

COLLEGE OF AGRICULTURE AND NATURAL RESOURCES

INTRODUCTION

The College of Agriculture and Natural Resources is one of the six Colleges of the University, with a mandate to train, research and disseminate knowledge in sustainable agriculture, renewable natural resources management and rural development. The College is made up of the following Faculties and Research Centres:

Faculty of Agriculture

Faculty of Renewable Natural Resources

Faculty of Forest Resources Technology

Bureau for Integrated Rural Development (BIRD)

Centre for Biodiversity Utilization and Development (CBUD)

KNUST Dairy/Beef Cattle Research Station, Boadi

Agriculture Research Station, Anwomaso

The College has a student population of approximately two thousand one hundred and ninety four (2,194), with one hundred and three (108) teaching and research staff, and two hundred and ten (210) supporting staff.

COLLEGE ADMINISTRATION

The College administration remained unchanged and consisted of:

Provost	- R. C. Abaidoo, PhD
Ag. College Registrar	- Mr. Kofi Appiah Koranteng
Ag. College Accountant	- Mr. E. Appiah-Kubi
Ag. College Librarian	- Mr. E. K. Bani
Assistant Registrar	- Mr. Anthony Adjapong

ACTIVITIES

Physical Development

Under the NPT/GHA/278 project, funds have been allocated for the completion of the Training Centre which was started with financial support from NUFFIC (Netherlands) through the NPT/GH/088 project. The Centre, which is near completion, will serve as a venue for short courses/sandwich programmes to be run by the College. Boreholes for regular access for water were provided to the Faculties of Agriculture and Renewable Natural Resources and at the Faculty of Agriculture Research Farms.

Staff Recruitment and Development

Nine (9) new Lecturers were recruited during the period while one obtained KNUST scholarship to pursue a sandwiched PhD Programme. In addition, the process of identifying two staff, in consultation with our consortium partners, was completed resulting in the resumption of PhD training programmes in Wageningen University. The two students spent three months in Netherlands and are back in Ghana to conduct thesis research.

Presentation of ITC Degrees to MSc GISNATUREM Candidates

The fourth graduation ceremony of candidates enrolled in the joint KNUST-ITC MSc programme in GISNATUREM took place at the Faculty of Renewable Natural Resources in March 2010. Two successful candidates received ITC degrees. KNUST degrees will be presented to the two candidates in June 2010.

COLLABORATIONS/LINKAGES/PROJECTS

Wageningen International

The College signed a co-operation agreement with Wageningen International, Netherlands, in October 2009 to run an international course on Adaptive Management Tools and Methods for Sustainable Natural Resource Management at Miklin Hotel, Kumasi.

The Nuffic Funded Project on Institutionalization of Integrated Natural Resource Management (INRM)

Introduction

The College of Agriculture and Natural Resources (CANR) since 2005 has been involved in the implementation of a Nuffic-funded Project on Institutionalization of Integrated Natural Resource Management (INRM)–NPT/GHA/278, under the Netherlands Programme for Institutional Strengthening of Post-Secondary Education and Training Capacity. NPT/GHA/278 (Phase 2) is an extension of NPT/GHA/088 (Phase 1). CANR is implementing this project in collaboration with 4 Dutch institutions namely; DHO-University of Amsterdam, Tropenbos International (TBI), International Centre for Development-oriented Research in Agriculture (ICRA) and Centre for Development Innovations (CDD)-Wageningen University. The funding support for the project is €1,600,000.00.

Progress and Achievements

The project currently runs two short courses for professionals in the areas of *Adaptive Management in Natural Resources* and *Governance in Natural Resource Management*. In addition to this is the Trans-disciplinary Students' Platform Approach (TSPA), which is an annual research programme organised for Graduates of KNUST and universities in the Netherlands, through which the students solve problems related to sustainable development.

CANR through the project has been able to create awareness for a change in mind-sets of college members and staff regarding the use of holistic approach to problem solving, engage stakeholders (especially the employers of graduates) in the design of teaching and research programmes. Currently, two college staff under the project are pursuing PhD programmes in the Netherlands. To further enhance capacity building of staff, graduates and professionals, the College of Agriculture and Natural Resources with funding support from Nuffic in April this year commissioned an international training centre for integrated natural resource management.

Finatrade Model Farm

Last year, we reported that Finatrade Foundation had donated an amount of GH¢50,000.00 to the CANR to establish a model farm in the Faculty of Agriculture to offer much needed practical and hands-on training to students of Agriculture. During the academic year 2009/2010, the Departments of Animal Science, Horticulture and Crop and Soil Sciences made a significant start and progress. The Department of Animal Science raised 2,500 broilers for sale to the University community; the Department of Crop and Soil Sciences cultivated 4 hectares of maize and harvested 150 mini bags of maize that were sold to the Department of Animal Science for the feeding of animals; the Department of Horticulture established a turf grass nursery as well nurseries for ornamental plants and fruit crops including avocado and mango. Students were actively involved in all aspects of the production and management. During the long vacation special 6-week field training for Finatrade scholarship award winners will be organized.

West African Network of Organic Agriculture Research and Training (WANOART)

The College/Faculty of Agriculture became a founding member of a consortium of five West African Universities and Coventry University, U.K., in the formation of this network aimed at building capacity in Organic Agriculture in the West African Region through a EU-ACP Edulink program grant of almost EUR 500,000. Other members are the University of Cape Coast, University of Agriculture, Abeokuta, Nigeria, University d'Abomey-Calavi, Benin and Njala University, Sierra Leone. The Faculty has been selected to host the first WANOART training of trainers workshop in Organic Agriculture in West Africa in July-August 2010.

Agro-forestry Practices to Enhance Resource-Poor Livelihoods Project

The Contribution Agreement between the Canadian International Development Agency (CIDA) and the University of Guelph for the "Agro-Forestry Practices for Resource-Poor Livelihoods Project" (S063440) was signed on August 25, 2006 under the auspices of CIDA's "University Partnerships in Cooperation and Development" (UPCD) funding mechanism. The CIDA contribution is \$3,000,000 and is scheduled to terminate on November 30, 2013.

The lead Canadian partner institution is the University of Guelph, Department of Environmental Biology. The lead Ghanaian partner institution is the Kwame Nkrumah University of Science & Technology (KNUST), Faculty of Renewable Natural Resources (FRNR) in Kumasi, Ghana. The project aims to enhance livelihoods in resource-poor communities by increasing environmental, social and economic capital, including improved gender equality, which will lead to increased income and improved food security.

The project is aimed at strengthening KNUST in particular, Faculty of Renewable Natural Resources (FRNR and Faculty of Forest Resources Technology (FFRT) in the hope of KNUST becoming West Africa's centre of excellence in agro-forestry solutions to sustainable natural resource management.

Project results falls into four categories:

- The resource poor – demonstrated improvements in income generation and food security from sustainable natural resource management (NRM) in three communities – Ayakomaso, Fiapre and Dumesua- in the Sunyani Municipality Area
- KNUST – strengthened its vision of becoming West Africa's centre of excellence in agroforestry by providing: a) solutions to sustainable NRM, b) solutions to problems of income generation and food security, c) FFRT with increased capacity for teaching and applying agroforestry strategies d) FRNR with state- of- the –art soil and plant analysis laboratory e) Geographic Information System facility at both FRNR and FFRT f) training for five men (1 PhD and 4 MPhil) and one woman as Agroforestry experts g) libraries at FFRT and FRNR enhanced for research and learning
- Young Ghanaian professionals – training men and woman as Agroforestry professionals for careers in the public and private sectors
- Ghana – through enhancing and developing sound agroforestry policies during the project.

PROGRESS AND ACHIEVEMENTS

Outcome 1 (Poverty alleviation in target communities)

Income generation and improved livelihood

The APERL project has made great strides under outcome 1, and there is a wide range of community-level activities which have delivered the income-generation generally expected of them. These include:

- Seedlings of various species were raised in the three targeted communities (Ayakomaso, Fiapre and Dumasua). Seedlings raised at Ayakomaso comprised *Terminalia superb* (4450), *ceiba pemntandra* (4299), *Moringa oleifera* (57), *Gliricidia sepium* (400), oil palm (1500); at Dumesua *ceiba pentandra* (2400), *Terminalia superb* (2400), oil palm (1500) an citrus (4000); at fiapre: *Leucaena leucocephala* (11000), *Voacanga africana* (7100), *Moringa oleifera* (92500) and citrus (1000).
- The rate of agroforestry technologies adopted by farmers has increased in the three communities; however the interest lies most in fruit trees
- Two hundred and fifty youth from the three communities have participated in livestock training at the Wenchi Farm Institute. A total of 750 micro-livestock comprising goats, sheep, pigs and grasscutters have been supplied by the project to farmers this year.
- The project has addressed endogenously and exogenously-set fires and their damaging effect to natural resources at the level of the communities.

OUTREACH

Five hundred and ten (510) members of twelve clubs were trained in fire prevention to enhance their technical capabilities for wildfire prevention campaigns in their communities. Linkage with Brong-Ahafo Radio (BAR) has been very successful. A bi-weekly programme of APERL project activities are being aired via radio BAR.

Outcome 2 (KNUST as the centre of excellence in West Africa delivering Agroforestry technologies)

Laboratories

FRNR has made a significant achievement in appointing five technicians in various fields with an admirable focus on gender balance. They have been given further training in soil and plant analysis. The state-of the art lab is now being used by staff and students for training and research. The laboratory has generated *circa* GHc 1,000.00 since its operation in August 2009.

Geographic Information Systems (GIS)

GIS remains an area of high commitment. The GIS laboratory with ten stations is being used by staff and students of the MSc GISNATUREM programme for learning and research. The GIS laboratory at the FFRT is also being used for training and research as well as for income generation. The laboratory has generated *circa* Ghc 4,000.00 this 2009/2010 academic year.

FACULTY TRAINING

Six APERL sponsored students are at various stages of their MSc and PhD training. Three are currently in University of Guelph, Canada to complete their data analysis and Theses write-up.

LIBRARY ENHANCEMENT

Nine faculty members have received library access card to Guelph on-line library, which has enhanced their quality of research and teaching. Some books worth CAN \$ 8,400.00 has been purchased for the FFRT library.

UNIVERSITY OF GUELPH (UOG) AND KNUST LINKAGE

Cooperation between the UoG and FFRN to develop BSc and MSc as well as on-line distance learning programmes, commenced during the visit by the KNUST project Coordinator to Guelph in February 2010. The Departments of Silviculture and Forest Management, and Agroforestry together with UoG have progressed significantly with the development of a joint UoG/KNUST programmes in Environmental governance and Agroforestry.

The Director of the APERL project and the Project Manager visited KNUST and the project sites. A meeting was held with the bilateral programme officer at the Canadian Embassy to set the stage for a possible bilateral project at the end of the APERL project.

Outcome 3 (National Agroforestry policy revitalized and strengthened)

Policy

The policy debate re-opened with a meeting with the Ghana Management Committee and the Human Resource Director of the Ministry of Food and Agriculture (MoFA).

VISITORS TO THE CANR

Among the numerous visitors to the College were:

- A 2-member delegation from the ITC (Netherlands) led by Louise Van Leenwen. Their visit coincided with the fourth graduation ceremony of the MSc GISNATUREM programme
- Pieterneel Boer and Oliver Bello, University of Amsterdam.
- Howard Gidley from United Kingdom (U.K.) on AGRA.
- Paul Amaza, University of Maiduguri, Nigeria, AGRA Consultant
- Mr. I.K. Antwi, UDS/KNUST Librarian.

BENEFACTORS

Forty-three (43) students of the College received academic scholarships from S.T. Nankani Scholarship, Poku Transport Endowment Fund, Finatrade Foundation, Educational Pathway International (E.P.I.), Kingdom Books Scholarship, Tertiary Education Scholarship Trust (TEST) and others.

FACULTY OF AGRICULTURE

INTRODUCTION

The Faculty of Agriculture, which is in the College of Agriculture and Natural Resources, was established in 1953. As one of Ghana's major teaching and research centers, the Faculty continues to make significant contributions to the country's agricultural and economic development.

The Faculty is made up of following four academic Departments: i) Department of Agricultural Economics, Agribusiness and Extension; ii) Department of Animal Science; iii) Department of Crop and Soil Sciences; and iv) Department of Horticulture. In addition to the existing programmes (B.Sc. Agriculture and B.Sc. Post Harvest Technology), the Faculty admitted students into four (4) new programmes during the 2009/2010 academic year. The four new programmes introduced this academic year are: (i) BSc Agribusiness Management, (ii) BSc Dairy and Meat Science and Technology, (iii) BSc Landscape Design and Management and (iv) BSc Agricultural Biotechnology. The introduction of the new programmes has increased the undergraduate student population to 1,025. Graduate programmes leading to the award of Master of Science (MSc), Master of Philosophy (MPhil) and Doctor of Philosophy (PhD) degrees in Agronomy/Crop Physiology, Plant Breeding and Genetic, Soil Erosion and Conservation, Soil Fertility, Plant Nutrition, Soil Genetics, Morphology and Classification/Pedology, Soil Physics, Forage Crop Production and Management, Entomology, Plant Pathology, Nematology, Animal Nutrition, Reproductive Physiology, Meat Science, Animal Behaviour, Animal Breeding and Genetics, Agricultural Economics, Landscape Design, Floriculture, Olericulture, Pomology, Post Harvest Physiology and Science are also on offer in the Faculty.

STAFF STRENGTH

The Faculty has a teaching staff strength of forty-eight (48) made up of six (6) Professors, three (3) Associate Professors, sixteen (17) Senior Lecturers and twenty-four (22) Lecturers. The teaching staff is supported by technical, administrative and ancillary staff totaling 130.

DEANSHIP AND HEADSHIP POSITIONS

The following held managerial positions in the Faculty during the year under review:

Prof. A. Donkoh	-	Dean of the Faculty
Dr. J.V.K. Afun	-	Vice Dean and Head, Dept. of Crop and Soil Sciences
Dr. S.C. Fialor	-	Head, Dept. of Agric. Economics, Agribusiness & Extension
Mr. P.Y. Adjei	-	Head, Dept. of Horticulture
Dr. E.L.K. Osafo	-	Head, Dept. of Animal Science

FUNDING OF RESEARCH ACTIVITIES

The Faculty continued to depend heavily on external agencies, programmes and projects to provide financial resources and physical facilities for its research activities. Specific research activities in the Faculty may be found in the reports from the various Departments detailed below.

COMMUNITY SERVICE

The Faculty continued to make available to primary, junior and senior high schools in Ghana, farmers and farmer groups, its facilities for diverse uses. Students from several institutions came to the Faculty to acquaint themselves with our research and production practices. Researchers from the Faculty were involved in several outreach services delivery with support from MIDA, AgSSIP, RTIP, RTIMP, EDIF, DFID and ASNAPP. Other details of community service offered by the Faculty are detailed in the Departmental Reports.

REHABILITATION OF INFRASTRUCTURE IN THE FACULTY

The following works in the Faculty were completed during the year under review:

- Drilling of a borehole with funding support from the Provost's office
- Rehabilitation of the Faculty's washrooms

The Faculty started implementing programmes towards overcoming the numerous challenges through the use of its present staff, laboratories, research farms and production units. The Faculty is already engaged in limited income generating activities and has been in the process of re-organizing itself to fully exploit its potential to generate more income; one such activity is the establishment of the Finatrade/KNUST Model Farm project. Funds from the income generating activities of the various Departments of the Faculty namely, Department of Animal Science, Crop & Soil Sciences and Horticulture, were used to provide and improve infrastructure and to reduce the burden of the numerous challenges. In addition, income was generated from rendering of laboratory analytical services to Poultry and Pig farmers and other Agricultural institutions. The complete removal of these challenges will be needed in order to launch the Faculty into the forefront of agricultural development in Ghana.

INSTALLATION OF INTERNET FACILITIES AT HORTICULTURE AND ANIMAL SCIENCE DEPARTMENTS AND PROCUREMENT OF NEW COMPUTERS

The Faculty, in its bid to enhance information and communication technology in some of its Departments, has installed internet facilities at the Department of Horticulture and this is being extended to the Department of Animal Science. In addition, the Faculty has procured 10 new computers to augment the number in the Computer laboratory.

DETAILS OF LINKS WITH OTHER UNIVERSITIES AND INDUSTRY

These are provided in the reports by the various departments.

DONATIONS RECEIVED

Finatrade Foundation offered scholarships worth six hundred Ghana cedis annually to each of the best five second year students in the Faculty. The award ceremony took place on 17th February 2010 at the Oak Plaza Hotel, Accra. The Faculty was represented by the Dean and the Vice-Dean. Also in attendance were all current Finatrade Scholarship beneficiaries from KNUST. The Ghana Association of Agricultural Students donated a standby generator worth GH¢1,050 to the Faculty. In addition, the GAAS executives instituted a scholarship scheme worth GH¢500 to support 5 needy but brilliant students of the Faculty. The management of Amal Bank has donated 2 computers and accessories to the Faculty to support academic work. The Faculty wishes to thank these donors for their acts of philanthropy.

VISITORS TO THE FACULTY

The following visited the Faculty during the year under review:

- Prof. Andrew Manu - Iowa State University
- Prof. Samuel Essah - Colorado State University
- Dr. (Mrs.) Celeste Welty - Ohio State University
- Ms. Juliana Asante-Dartey - ASSNAPP, Ghana
- Mr. Stephen Boadu - ASNAPP, Ghana
- Mr. Victor M. Momsu - NCRC, Ghana
- Dr. Dan Whyner - USAID, Liberia
- Dr. Allen Turner - ARD, Liberia
- Dr. Aikira Kato - Sapporo, Japan
- Mr. Maxwell Asante - WACCI, University of Ghana
- Dr. Louse van Leeuwen - ITC Enschede, The Netherlands
- Prof. Isaac O.O. Aiyelaagbe - WARIOART, University of Agriculture, Abeokuta, Nigeria

DEPARTMENT OF AGRICULTURAL ECONOMICS, AGRIBUSINESS & EXTENSION INTRODUCTION

The Department of Agricultural Economics, Agribusiness and Extension (DAEAE) is one of four Departments of Faculty of Agriculture of Kwame Nkrumah University of Science and Technology. The Department offers training in agricultural economics and farm management, agricultural extension, rural sociology and agribusiness management.

UNDERGRADUATE PROGRAMMES

Forty students were admitted as the first batch to pursue the new B.Sc programme in Agribusiness Management. The programme is quite popular partly due to the fact that it is the only one in the College that offers admission to both science and arts students with economics or accounting knowledge to pursue a common programme.

In the final year options offered under the 4-year composite BSc. Agriculture Degree programme, the Agricultural Economics option, is still the most popular one students opt for, but due to the

limited infrastructural support and specifically lack of adequate classroom space for seminars the intake is cut down to the most manageable number of students. The second option, Agricultural Extension and Rural Sociology takes in relatively fewer students due to lack of teaching space and low staff numbers. Nonetheless the products of the Department continue to benefit from several job opportunities in the changing job market due to the broad disciplinary exposure the programs entail. This has been made possible because the Department has maintained high standards in training its students and the continual modification of the internal content of lectures to reflect the fast changing developments in the local and international professional fields.

GRADUATE PROGRAMMES

The Department's 2-year M.Phil programme in Agricultural Economics has replaced the M.Sc. programme in popularity. The M.Sc option nevertheless remains open for prospective students. The intake for the Ph.D programme has also picked up with an average of two students per academic year.

STAFF STRENGTH

The Department currently has twelve senior members, including one part-time lecturer, two technicians a secretary and one cleaner/messenger. Dr Gyiele Nurah has returned to the Department as full-time lecturer after a two-year sabbatical leave as the Chief Director of the Ministry of Food and Agriculture. In line with its new policy of improving staff capacity development, members of staff continue to benefit from training and development opportunities by international organizations. Mr Patrick Appiah was awarded a five-month fellowship by NUFFIC in order to upgrade his expertise in area of rural innovations and agricultural extension at the International Centre for development-oriented Research in Agriculture, (ICRA) Wageningen.

LOCAL AND INTERNATIONAL COLLABORATION

The Department has rejuvenated its research collaborative efforts with other institutions of higher learning and application of higher learning. On-going linkages include:

- Research and staff exchanged arrangements with the North Carolina A&T University, USA: During the year under review Faculty from the NCA&T, specifically the Department of Agribusiness, Applied Economics and AgriScience Education were in the country to deliver a series of seminars and offer advice to graduate students of the Department under the theme: *Enhancing the International Agricultural Campus: Strengthening Faculty and Student Global Competency and Competitiveness*.
- Collaborative research with the Department of Food Science and Technology and KCCR, KNUST, the Universities of Auburn, and Georgia, Alabama, USA and supported by the US Peanut Collaborative Research Support Project (PCRSP) for studying the effects of aflatoxin contamination in groundnuts on the farmer-consumer food chain in Ghana
- Research support for the Root and Tuber Improvement and Marketing Project (RTIMP) with the Ministry of Food and Agriculture (MoFA) and International Fund for Agricultural Development (IFAD)
- Value Chain Analysis Project with the University of Cape Coast and the GTZ
- Training and Evaluation support for the Millennium Development Authority (MiDA)
- National Agribusiness Development Programme (NADEP) in collaboration with the Universities of Ghana, Legon, University of Cape Coast, and the University for Development Studies, Tamale

SERVICE TO THE COMMUNITY

In addition to teaching and research activities staff of the Department continue to use their intellectual competence to the benefit of the larger community. Drs. Fialor, Bakang and Ohene-Yankyera are External Examiner/Assessors for the Department of Agricultural Economics and Extension, University of Cape Coast; Dr. Bakang offers similar services to the University of Ghana and the University for Development Studies, Tamale while Dr. Ohene-Yankyera offers such services to the Sunyani Polytechnic. Mr Maxwell Asiamah performs additional roles as the Senior Tutor of Queens Hall and in charge of the Faculty of Agriculture Staff common Room. Dr. S.C. Fialor performs additional roles as a Hall Council member of the University Hall while Dr. K. Ohene-Yankyera continues as the local UTAG President after a full term as the National President. Mr. Patrick Appiah remains the Examination Officer of the Faculty of Agriculture, Mr. Fred Nimoh as the Departmental Examinations Officer while Dr Victor Owusu continues to serve as the Department's Postgraduate Studies Co-ordinator.

DEPARTMENT OF HORTICULTURE

INTRODUCTION

The Department of Horticulture, KNUST, is one of the four academic Departments in the Faculty of Agriculture that runs the BSc (Agriculture) composite degree programme, the 4 year BSc (postharvest) degree and the BSc Landscape Studies Programmes.

TEACHING

Staff continued to participate fully in the undergraduate and graduate programmes offered in the Faculty of Agriculture and the MSc (Postharvest technology) programmes by the Institute of Distance Learning. Most of them also attended the yearly AGM organized by the Ghana Institute of Horticulturists (GhIH). Seminars, tutorials, field and laboratory practical training also formed integral part of our academic programmes. The professional horticultural courses taught by staff of the Department included Vegetables, Fruit, Seed Science and Technology, Landscape Design and Floricultural Crop Production. Others are Ornamental Nurseries and Nursery Management, Plant materials for Landscaping, Plant Propagation, Amenity Horticulture, Organic and Sustainable Horticulture, Herbs, Spices and Aromatic Plants, Postharvest Physiology and International Trade.

GRADUATE PROGRAMMES

The Department's graduate programmes attract applicants from all the five Public Universities and other research outfits. Regarding the year under review about 12 applicants applied and all but only one person did not qualify.

DISTANCE LEARNING

The Department was able to mount an MSc in Postharvest programme in Distance Learning last year and this is entering the second year.

STAFF RESEARCH

The following staff of the Department carried out research activities. Research activities are on-going, some papers are in press and others had been published. Some of those which are still on-going are outlined in the following areas.

Mr. P.Y. Adjei

- Studies into seed sterilization of avocado for better and quicker seedling growth.
- Strategies for combating the fungal infection of the MD2 pineapple on the field.

- Appropriate methods for the propagation of the Duiker nut (*Ir vingea gabonensis*).
- Improving the production of citrus/cocoa and cocoa/oil palm intercrop systems.

Mrs. I. Idun

- Formulation of soilless media for rooting difficult – to root ornamental plants.
- Assessing consumer preference, shelf-life, and quality of different banana varieties.

Dr. (Mrs) N.S. Olympio

- Assessment of postharvest quality traits for tomatoes varieties in Ghana for
- The export market.
- Seed health Technology transfer to farmers.
- Evaluation of priority indigenous forest tree species for drought tolerance.
- Identification and control of seed borne pests/diseases of selected germplasm.

Mrs. G.M. Timpo

- Analytical studies on intensively grown *Moringa oleifera* as a leafy vegetable.
- Multiplication and agronomic studies on *Xanthosoma sagittifolium* for leafy vegetable production.
- Processing methods and assessment of acceptability of processed selected traditional leafy vegetables (TLVs).

Prof. P.Y. Boateng

- Effect of cultural practices on the growth, yield and quality of some vegetables.
- Studies into the use of soil amendments in the control of nematodes in some vegetable crops.
- Evaluation of four exotic and two local cultivars of tomato for pests and diseases resistance.

Mrs. H.V. Adzraku

- Effect of road construction on the landscape. A Case Study of KNUST – Ejisu road.
- The use of ornamental plants to solve pollution problems in an Industrial Environment, Case Study of GHACEM.
- Formulation of soilless media for rooting difficult – to – root ornamental plants using two different stem cutting types.

Mr. P. Kumah

- Quality assessment of organically and conventionally grown banana.
- Control of crown rot disease of banana using botanical.
- Determination of crown rot causing pathogens and mapping of affected areas in Ashanti Region – near ending.
- Extension of shelf-life of various fruits and vegetables – on-going.

Dr. B.K. Maalekuu

- Evaluation of several tomato cultivars for storability, resistance to pests and diseases.
- Quality evaluation of okra and cucumber cultivars.
- Effect of flower food on flower vase life.

Mr. F. Appiah

- Availability and distribution of breadfruits in Ghana.
- Studies into the physico-chemical properties of breadfruits in Ghana.
- Effect of fermentation on mineral content of breadfruits in Ghana.

Mrs. P.D. Kaledzi

- Characterization of sweet potato
- Assessment of nutritional and nutritional and seed quality of egusi melons.
- Assessment of agronomic performance of egusi melon varieties under spacing and staking.
- Field performance of three cultivars of egg plant under spacing and stage of transplanting.

Dr. B.K. Banful

- Soil fertility improvement and pathogen reduction using legume green manures in organic vegetable production.
- Biologically efficient and profitable intercropping systems for organic okra and pepper production.
- Development of nutrient and water management systems for organic vegetable production.
- Determination of appropriate botanicals for pests and disease control in Organic Vegetable production.

PROJECTS EXECUTED/BEING EXECUTED

The Department and individuals executed various programmes and projects in the year under review as follows:

- The Department has retained the four (4) foreign students under Postharvest and Seed Science Technology from SCARDA (Strengthening the Capacity and Agricultural Development in Africa) and AGRA (Alliance for a Green Revolution in Africa). The co-leader of the project is Dr. (Mrs) Olympio. This earned the Department a sum of \$6,440 from fees paid from these students.
- Dr. (Mrs) Olympio, Mr. P.Y. Adjei and Dr. B.K. Maalekuu are on a – 5 year programme for
- Export Marketing and Quality Awareness Project (EMQAP) which started in 2008 at a cost of about \$1.5 million and Mrs. Hannah Adzraku led a team to execute a nearly GH¢50,000 project for the Department.

CONFERENCES ATTENDED

The following staff members attended the 9th AGM of the Ghana Institute of Horticulturist (GhIH) from 10th – 11th September 2009.

Mrs. G.M. Timpo; Prof. P.Y. Boateng; Dr. (Mrs.) N.S. Olympio; Mrs. Hannah Adzraku; Mr. P. Kumah; Mrs. Irene Idun; Mr. F. appiah; Mrs. P.D. Kaledzi and Dr. B.K. Maalekuu.

Mr. P.Y. Adjei went on a special mission to select the National Best Farmer for 2009.

Dr. Banful; Mr. Francis Appiah and Mr. P.K. Kumah attended the All Africa Horticultural Congress at Safari Park Hotel. Nairobi, in Kenya from August 31 – September 3, 2009.

Mrs. P.D. Kaledzi also attended the West African Network on Organic Agriculture Research and Training Workshop at the University of Agriculture, Abeokuta, in Nigeria from 15 November – December 6, 2009.

SERVICE TO THE COMMUNITY

The following members of staff are members of the Ghana Institute of Horticulturists (GhIH) and the export marketing and Quality Awareness Project (EMQAP) for fruits and vegetables: Mr. P.Y. Adjei, Dr. (Mrs.) Olympio and Dr. B.K. Maalekuu. Dr. Maalekuu is still a member of CANR, KNUST consultancy group working for MIDA in East Effiduase District.

MEMBERSHIP TO NATIONAL/INTERNATIONAL BODIES:

Dr. Maalekuu is an external examiner in Postharvest Technology for the University of Ghana, Legon and also a member of the financial committee of the GhIH. Mr. P.Y. Adjei is a co-operated member of the council for GhIH and president of the middle zone of the GhIH. He is also a member of the export Marketing and Quality Awareness Project (EMQAO) for Papaya. Dr. B.K. Banful is the National President of the GhIH and member of the Export Marketing and Quality Awareness Project (EMQAP) for some vegetables.

Dr. (Mrs.) N.S. Olympio is the immediate-past National President of the GhIH and Council member. Mrs. Hannah Adzraku is the National Treasurer of the GhIH and Mrs. Irene Idun is the immediate Treasurer for the middle zone of GhIH. Mr. F. Appiah is the National Secretary of the GhIH.

Mr. P.Y. Adjei is a member of the Ghana Science Association and the Ghana Institute of Horticulturists.

Prof. P.Y. Boateng is a member of the Ghana Science Association, Ghana Institute of Biology and a fellow of the Ghana Institute of Horticulturists. Mrs. G.M. Timpo is also a fellow of the Ghana Institute of Horticulturists; member, Ghana Science association and a member of the Third world organization for women in Science (TWOWS).

Dr. (Mrs.) Olympio is a fellow of the Ghana Institute of Horticulturist (GhIH) and a member of the Ghana Science Association.

Dr. Maalekuu is a member of the Ghana Institute of Horticulturists (GhIH) and the International Society for Horticultural Science (ISHS). He is also the treasurer of the middle zone of the GhIH. Mrs. P.D. Kaledzi is also a member of the Ghana Institute of Horticulturists (GhIH) and the Ghana Science Association. Mrs. Hannah Adzraku is a member of the Ghana Institute of Horticulturists (GhIH) and the Ghana Science Association.

Mr. F. Appiah is a member of the Ghana Institute of Horticulturist (GhIH) and the Ghana Science Association. Mrs. I. Idun is a member of the Ghana Institute of Horticulturists and the Ghana Science Association and the last but not the least; Mr. P. Kumah is also a member of both the Ghana Institute of Horticulturists and the Ghana Science Association.

DEPARTMENT OF CROP AND SOIL SCIENCES

The Department of Crop and Soil Sciences is one of the four Departments of the Faculty of Agriculture. The courses offered at the Department provide students with excellent knowledge and practical skills, and with options for specialisation in many fields. The mission of the Department is

teaching, research and transfer of technology in Agriculture as well as income generation through crop production and consultancy services.

The Department at the moment runs Tissue Culture/Plant Biotechnology facility in the University which is being expanded to include molecular genetics work. It has satisfactorily equipped Soil Science, Plant Pathology and Entomology laboratories. There are also an Insectary, Plant-houses, teaching/research and model farms with cocoa, coffee, rubber, coconut, citrus, and oil palm plantations.

UNDERGRADUATE AND GRADUATE PROGRAMMES

The Department continues to contribute to the running of the composite BSc (Agriculture), BSc (Post Harvest Technology), BSc (Landscape Design & Management), BSc (Meat Science) and BSc (Agric Biotechnology) degree programmes through a number of courses it offers. BSc Agriculture (Crop and Soil Sciences Option) students conduct research in Agronomy/Crop Physiology, Plant Breeding and Genetics, Soil Fertility, Plant Nutrition, Forage Crop Production and Management, Entomology, Plant Pathology, Nematology and Biotechnology (Tissue culture) for their dissertation as partial fulfilment for the degree. A four-year BSc Agriculture (Biotechnology) degree programme was introduced during the 2009/10 academic year and is progressing well. The number of final year undergraduate students in the Crop and Soil Sciences option stood at 58 during the period under review.

Graduate studies leading to the award of MSc, MPhil and PhD are offered in all the courses offered at the undergraduate level. In the 2008/09 academic year, the Department admitted 14 local and foreign students to the MSc Programmes in Plant Breeding, Biotechnology and Crop Protection. These students are being sponsored by AGRA and SCARDA. This current batch of students is scheduled to graduate in June 2010. The number of postgraduate students enrolled in the Department during the year under review is 17. During the same period, six (6) students completed their PhD studies, one completed MPhil and 20 completed the MSc programme. Plans are far advanced to start a special PhD Programme in Soil Science for 20 foreign and local students to be funded by AGRA. These students will be engaged in research aimed at solving basic crop and soil problems as well building capacity for Soil Fertility Management towards increased productivity in the West Africa sub-region.

MAJOR RESEACH ACTIVITIES

Research activities of Senior Members:

Prof. R.T. Awuah

- Biological control of blackpod disease of cocoa with a yam rhizobacterium.
- Identification and management of *Fusarium* basal rot of onion in the Kwahu South District of Ghana.

Prof. Rev. Mensah Bonsu

- Land evaluation for rice-based cropping systems.
- The contribution of Oblogo land fill in Accra to pollution of the Densu River.
- Assessment of soil degradation in the form of compaction and crusting using infiltration parameters.
- Assessment of agricultural burning on emissions of greenhouse gases.
- Development of activity data and emission factors for greenhouse gases inventory in Ghana.
- Fertilizer use by crops in Ghana.

Prof. C. Quansah

- Agronomy of *Artemisia annua* in Ghana.
- Modelling siltation and nutrient export in some small reservoirs in the Upper East Region.

Dr. E. Asare

- Agronomic and physiological studies in arable crops.
- Media and hormonal studies in arable crops and medicinal plants
- Farming system models in cereals, legumes, and root and tubers.
- Mineral nutrition of arable crops.

Dr. J.V.K. Afun

- Biology and management of the mealy bug, *Planococcus citri* on white yams.
- Management of the eggplant fruit borer, *Leucinodes orbonalis* with ethanolic extracts of *Anona muricata* leaves.
- Efficacy of ethanolic extract of the roots of *Thevetia peruviana* Juss (milk bush) in the control of the major insect pests of cowpea.
- The role of leaf and root extracts of Acheampong weed, *Chromolaena odorata*, in the management of *Sitophilus zeamais* in stored maize.
- Susceptibility of 12 maize varieties to the maize storage weevil *Sitophilus zeamais* under various botanical control measures.
- Application of salicylic acid on the infestation rate of maize stems borers.
- Organic amendments of soil on populations and damage severity of potato weevil, *Cylas* spp.
- Long term fumigation on the biology of maize storage weevil, *Sitophilus zeamais*.

Dr. Richard Akromah

- Transfer and genetics of fresh seed dormancy in peanuts
- Genotyping the Pona yams of Ghana by molecular markers
- Screening rice genotypes for heavy metal absorption in four mining environments in Ghana.
- Screening for tomato yellow leaf curl virus resistance in exotic and local tomato germplasm.
- Transfer and inheritance of pod shattering in soybean.

Dr. Joseph Sarkodie-Addo

- Farming system research in groundnuts
- Nitrogen fixation studies of newly released groundnut varieties.
- Evaluation of some orange flesh sweet potato genotypes for their yield, resistance to diseases and pests, and food quality.

Dr. Charles Kwoseh

- Quality of dry cocoa beans for processing and export.
- Evaluation of cowpea cultivars for resistance to rootknot nematode (*Meloidogyne* spp.)
- Management of *Meloidogyne* spp. on Okra using aqueous garlic extract.
- Poultry manure for the management of *Meloidogyne* spp. on egg plant
- Airborne fungi in indoor and outdoor environments of the Faculty of Agriculture, KNUST.
- Integrated management of onion leaf browning disease in the Brong-Ahafo Region of Ghana.
- Screening tomato genotypes for resistance to *Meloidogyne* spp.

- Evaluation of liquid and powdered food dyes for staining *Meloidogyne* egg masses on root surfaces

Mr. Thomas Adjei-Gyapong

- Estimation of thermal and radiation potential for maize production in Ghana.
- Improving manure quality for increased agricultural production on small-holder farms in the Upper East Region of Ghana.
- Soil fertility evaluation of selected inland valleys in Ghana.
- Site characterization of farmlands and experimental sites.

CONFERENCES/WORKSHOP/SEMINARS ATTENDED

Prof E.Y. Safo

PhD (Soil Science) Curriculum Development Workshop organized by the Alliance for Green revolution (AGRA) in collaboration with the Faculty of Agriculture CANR from 16-19 August, 2009 at the Golden Tulip Hotel, Kumasi.

AGRA Results-based Monitoring and Evaluation Training Workshop. March 1-3, 2010 at the Africa Regent Hotel, Accra.

Moderator/Facilitator for the Workshop on Soil Management of Cocoa Trees Stocks and Agroforestry in cocoa Cultivation in West and Central Africa. Organized by the Cocoa Producers' Alliance (COPAL) in conjunction with the Government of Republic of Ghana. March 16-18, 2010 at the Golden Tulip Hotel, Kumasi.

Prof. C. Quansah

Quansah, C. (2010). Restoration and conservation of soil fertility in cocoa cultivation. Workshop on Soil Management of Cocoa Tree Stocks and Agroforestry Applied to Cocoa Cultivation in West and Central Africa, Golden Tulip Hotel, Kumasi, Ghana, 16-18 March, 2010.

Quansah, C. (2009). Cumulative soil loss under different tillage practices and its effects on the growth and yield of Maize (*Zea mays*, L.) in the Semi-deciduous Forest Zone of Ghana. 9th African Crop Science Conference, Southern Sun Cape Hotel, Cape Town, South Africa. September 28 – October 1, 2009.

Quansah, C. (2009). Good Agricultural Practices/Good Harvesting and Collection Practices: Fundamentals for Sustainable Production and Supply of NTFPs. NCRC/ASNAPP Workshop on the Commercialization and Economic Potential of NTFPs. Greenland Hotel, Agona Swedru, Ghana, August 12-14, 2009.

Quansah, C. (2009). Post-Harvest Handling Systems for NTFPs: Enhancing Product Quality and Delivery. NCRC/ASNAPP Workshop on the Commercialization and Economic Potential of NTFPs. Greenland Hotel, Agona Swedru, Ghana, August 12-14, 2009.

Quansah, C. (2009). Building Capacity at the Community Level: Feedback from trainings and testing of illustrated Norms on NTFPs. NCRC/ASNAPP Workshop on the Commercialization and Economic Potential of NTFPs. Greenland Hotel, Agona Swedru, Ghana, August 12-14, 2009.

Quansah, C. (2009). Assessment of Social, Economic and Environmental Benefits of Existing Sustainable Land Management Technologies (SLM) in Ghana for the Development of the Ghana

Strategic Investment Framework (GSIF) and SLM Global Environment Facility (GEF). Environmental Protection Agency (EPA) Accra, Ghana.

The 9th Conference of the Parties (COP 9) of the United Nations Convention to Combat Desertification (UNCCD), Hilton Hotel, Buenos Aires, Argentina. September 21-25, 2009.

The African Preparatory Meeting to the 9th Session of the Conference of the Parties (COP 9). Laico Hotel, Tunis, Tunisia, July 27-31, 2009.

The 9th African Crop Science Conference. Southern Sun Cape Hotel, Cape Town, South Africa. September 28 – October 1, 2009.

NCRC/ASNAPP Workshop on the Commercialization and Economic Potential of NTFPs. Greenland Hotel, Agona Swedru, Ghana, August 12-14, 2009.

Dr. J.V.K. Afun

Training Workshop for Technical and Training Service Providers (TTSPs) Accredited by the Millennium Development Authority (MiDA). Kwahu Pepease, Eastern Region, Ghana. 15-18 June, 2009.

Retreat on the virtual absence of teaching and learning of agricultural science at the basic and secondary levels of education in Ghana. Forest Hotel, Dodowa. 21-23 Jan. 2010. Organised by the Ministry of Education and Ministry of Food and Agriculture.

Dr. C. Kwoseh

Workshop to review Ministry of Food and Agriculture projects coordinated by Council for Scientific and Industrial Research, 29th – 30th March, 2010, Regional MOFA Conference Centre, Sunyani.

Mrs S. Duku

WIAS Science Day, Wageningen University, 12th March, 2009

Mr. A. Opoku

Workshop on advocacy, communication and proposal writing organized by the Strengthening Capacity for Yam Research-for-development in central and Western Africa (SCYReC) project of the International Institute for Tropical Agriculture (IITA). 21-26 March, 2010. Accra, Ghana.

COLLABORATION

The Department continued its collaboration with:

- Agribusiness for Sustainable Natural African Plant Products (ASNAPP)
- The International Atomic Energy Agency (IAEA), Vienna, Austria and the Biotechnology and Nuclear Agricultural Research Institute (BNARI), Kwabenya.
- International Institute of Tropical Agriculture, Ibadan, Nigeria
- CSIR-Soil Research Institute, Kumasi.
- CSIR-Crops Research Institute, Kumasi.
- Ministry of Food and Agriculture (MOFA), Ghana.
- United States Department of Agriculture, Faculty Exchange Programme on New Sanitary and Phytosanitary Issues.

In addition, the Department initiated collaboration with:

- Department of Agriculture, University of Guelph, Canada, under Faculty Exchange Programme.
- Alliance for a Green Revolution in African (AGRA), Bill Gates Foundation and the Rockefeller Foundation, Nairobi, Kenya for the establishment of Postgraduate Plant Breeding and Seed Science Centre.

GRANTS TO THE DEPARTMENT

The Department attracted various grants to support academic and research activities during the year. These include:

A US\$397,000 from the Alliance for a Green Revolution in Africa (AGRA) to train 10 MSc students in Plant Breeding and Seed Science and Technology. The students are nationals of Ghana (6), Liberia (2) Sierra Leone (1) and Niger (1). The funds cover their two year training that ends in June 2010.

A GH¢47,000 for tomato improvement project from the Ministry of Food and Agriculture. This is a 3-year project of which the first year's payment of GH¢11,000 has been made by the Ministry.

A GH¢34,000 from the Root and Tuber Crops Improvement and Marketing Project (RTIMP) for Soil Fertility Management Technologies for Efficient and Profitable Production of cocoyam cormels and leaves. (GoG/IFAD-sponsored project).

A GH¢5,700 from RTIMP for in vitro conservation of root and tuber crops.

A US\$21,000 from the Food and Agriculture Budgetary Support (FABS) for integrated management of onion leaf browning disease. FABS is being implemented by the Ministry of Food and Agriculture, Ghana.

A GH¢78,000 grant for soybean seed production by the Export Development and Investment Fund (MoFA).

SERVICE TO THE COMMUNITY

Prof. R.T. Awuah

- Provided disease diagnostic services for onion farmers in the New Oworobong area of the Kwahu South district. *Fusarium* basal rot was diagnosed to be the most important disease in the area. This diagnostic service has now paved the way for research on control of the disease.

Rev. Prof. Mensah Bonsu

- Reviewed Manuscripts for the Journal of Science and Technology, KNUST
- Reviewed Manuscripts for the Journal of Natural Sciences, University of Cape Coast.
- Internal Examiner, Department of Crop and Soil Sciences, KNUST.
- External Examiner, Faculty of Agriculture, University of Ghana, Legon.
- External Examiner, School of Agriculture, University of Cape Coast.
- Chairman, Appointments and Promotions Committee of Cocoa Research Institute of Ghana, (CRIG).
- External Assessor of Promotions to Senior Research Scientists, CSIR – SARI.
- Priest-in-charge, St. Monica's Anglican Church, Bonwire, Ashanti.

Prof E.Y. Safo

- Chaired several postgraduate oral examinations on behalf of the Dean, School of Graduate Studies.

Prof. C. Quansah

- External Examiner, Faculty of Agriculture, University of Development Studies (UDS), Tamale.
- Represented Ghana as the Science and Technology Correspondent (STC) at the African Preparatory Meeting to the 9th Session of the Conference of the Parties (COP 9) in Tunis, Tunisia
- Represented Ghana as the Science and Technology Correspondent (STC) at the 9th Session of the Conference of the Parties (COP 9) in Buenos Aires, Argentina.
- Reviewed manuscripts for the Journal of Science and Technology, KNUST.
- Reviewed manuscripts for the West African Journal of Applied Ecology, University of Ghana.

Dr. JVK Afun

- Reviewed manuscripts for Agriculture and Food Science Journal of Ghana
- Reviewed manuscripts for the Journal of Science and Technology, KNUST.
- Faculty representative, Books and Publications Committee of KNUST.
- Member, Editorial Committee of the Journal of University of Science and Technology (JUST).
- Member, Public Lecture Committee of KNUST.
- Trained 98 farmers in group formation and dynamics and the economics, production, value addition and marketing of maize in the Sekyere Afram Plains District of the Ashanti region. (MCA-MiDA PROJECT)
- Guest Speaker, Golden Jubilee Celebration of General Agricultural Workers Union (GAWU) of Ghana, Ashanti Chapter. 7th October, 2009.
- Moderated draft questions and marking schemes for HND Agriculture Programme of Sunyani Polytechnic.

Dr. E. Asare

- Continued to offer part-time lecturing services in Crop Physiology and Plant Breeding to the University of Education, Winneba, Mampong Campus.
- Collaborator on the Agribusiness for Sustainable Natural African Plant Products (ASNAPP) project on the conservation and utilization of selected medicinal plants.

Dr. R. Akromah

- Continued to offer part-time lecturing services in Crop Physiology and Plant Breeding to the University of Education, Winneba, Mampong Campus.
- Hall Master of Queen Elizabeth II of Residence.
- Project leader, KNUST-Masterfoods USA Cocoa-Natural Plant Products
- Leader, Intercropping Model and the Export Development and Investment Fund (EDIF) Ministry of Food and Agriculture, for soyabean cultivation.
- Collaborator on the International Atomic Energy Agency (IAEA) project on the sanitization of cassava by mutation breeding and tissue culture techniques with counterparts at the

Biotechnology and Nuclear Agricultural Research Institute (BNARI), Ghana Atomic Energy Commission, Kwabenya, Accra.

Dr. J. Sarkodie-Addo

- Hall Master, University Hall of KNUST.
- Pastor, Deeper Life Campus Fellowship, KNUST.
- Member, Council of Convocation.

Dr. Charles Kwoseh

- Sectional Head, Plantation/Arable Crops Section of the Department of Crop and Soil Sciences.
- College of Agriculture and Natural Resources representative on the Senior Members Housing Committee
- College representative on TALIF.
- Reviewed manuscripts for JUST
- Reviewed manuscripts for the Journal of Ghana Science Association
- Reviewed manuscripts for the Agriculture and Food Science, Journal of Ghana.
- Moderated draft questions and marking schemes for HND Agriculture Programme of the Sunyani Polytechnic.
- Trained farmer groups in group formation and capacity building in maize/cassava production, value addition and marketing in the Sekyere Afram Plains District of the Ashanti region (MCA-MiDA PROJECT).

Mr. T. Adjei-Gyapong

- Coordinator of production operation at Anwomaso Research Farm.
- Consultant for soil sustainability assessment for Industrial Sugar cane production in Central African Republic and the Republic of Togo under the partnership of ASNAPP.
- Trained farmers in group formation and dynamics and Business production capacity building in Sekyere East and West Districts in the Ashanti Region (MCA – MiDA Project).

DEPARTMENT OF ANIMAL SCIENCE

INTRODUCTION

The Department of Animal Science is one of the four academic Departments that constitute the Faculty of Agriculture. The mission of the Department is to provide instruction, conduct research and extend knowledge and technology in Animal Science. The Department is located on a 40-hectare plot of land. The Department has two sections; Poultry and Livestock Sections. The Poultry Section has structures for 10,000 birds. The Livestock Section has facilities for a 60-sow-herd, 100 cattle, 500 sheep and 300 goats. The Meat Processing Unit has the capacity to process 60 metric tons of meat per year. The Department also has Nutrition and Veterinary Diagnostic Laboratories which provide services for teaching and research.

UNDERGRADUATE AND POSTGRADUATE PROGRAMMES

The Department continues to contribute to an undergraduate programme leading to the award of the composite BSc Agriculture degree. It also offers graduate programmes leading to the MSc., MPhil., and PhD degrees. The areas of specialization for graduate students are in Animal Nutrition, Animal Nutrition and Management, Animal Breeding and Genetics and Reproductive Physiology. BSc Agriculture students (Animal Science option) conduct research in the courses mentioned above. Seminars, tutorials, field trips and laboratory practical training form important components of the

teaching programme. The Department also provides service courses to two Departments; the Department of Biochemistry and Biotechnology and the Department of Agroforestry. The painting and Sculpture and Physics Departments use the facilities of the Farm for student work.

MAJOR RESEARCH BY STAFF

The thrust of the Department's research interests are in finding ways to increase the productivity of small animal holdings, through finding efficient and cost effective ways of feeding farm animals through the use of non-conventional feed resources as well as the use of genetically improved breeds. Members of the Department collaborate with colleagues in other Departments and Colleges of the University. These include the Faculties of Pharmacy and Pharmaceutical Sciences, Renewable Natural Resources and the Colleges of Science and Engineering. The Department believes such collaborations would help improve the livelihoods of the small animal holding in a holistic way.

MAJOR RESEARCH ACTIVITIES

The research projects initiated by the academic staff of the Department during the year are as outlined below:

Prof D. B. Okai

- Utilization of exogenous enzymes in pig and poultry diets in Ghana – A case study of the Ashanti and Greater Accra regions
- Dawadawa (*Parkia biglobosa*) fruit pulp as a feed ingredient in swine diets
- Improving the nutrient composition and nutritive value of cassava peels using slaughter house by-products
- On –farm feeding trial using Direct-Fed-Microbials / Probiotics
- Nutrient composition and nutritive value of new feed resources: water melon rind and pawpaw peels
- Methods of swine manure disposal in the Ejisu-Juabeng district of the Ashanti region

Prof S. A. Osei

- The growth performance of broiler chickens fed on *Adenanthera pavonina* seed meal
- Response of broiler chickens fed on diets containing *Aspilia africana* leaf meal
- *Laportea aestauns* leaf meal as a supplement in broiler diets

Prof A. Donkoh

- Probiotics and Prebiotics in animal feeding systems
- Utilization of enzymes in farm animal nutrition
- Chelates and their role in animal nutrition
- Extension of pork shelf life using plant extract
- Administration of Direct Fed Microbial via the drinking water and its effects on health and performance of broiler and layer chickens

Prof C. C. Atuahene

- Behavioural studies of laying hens and pigs
- Evaluating the performance of French guinea fowl kept on a commercial farm
- A preliminary study on the effect of Anatto (*Bixa orellana*) leaf meal on the growth and performance of finishing broiler chickens

Dr. O. S. Olympio

- The effect of naked neck (*Na*) and frizzle (*F*) genes on egg production and hatchability of Chicken eggs
- The influence of naked neck (*Na*) and frizzle (*F*) genes on the performance and blood parameters of F₂ and F₃ generations of crosses of local and commercial chickens
- Cash Flow Budget for commercial Layer and Broiler farms using Microsoft excel
- Financial losses caused by egg breakages on a commercial farm
- Reformulation of a commercial Broiler, Layer and Parent stock ration using Microsoft Excel Solver

Dr. E. L. K. Osafo

- Nutritional evaluation of four varieties of Napier grass at different harvesting dates
- Exotic dog production : A case study in the Greater Accra and Kumasi metropolises
- Constraint of goat production in the Ashanti region of Ghana: a survey of taboos and religious beliefs

Dr. K. Asare

- Age as a predisposing factor to poultry diseases
- The effect of management on the health of birds in the Kumasi metropolis.

Mr. P. K. Karikari

- Analysis of household consumption of meat: A case study of the Ayigya community
- A study of drinking yoghurt using different levels of sodium benzoate as a preservative
- Feed intake and growth performance of weaner and female adolescent rabbits fed a blended leaf meal of *Chromolaena odorata*, *Gliricidia sepium* and *Leucaena leucocephala*

Mrs. V. Attah-Kotoku

- Nutritive value of *Samanea saman* leaves
- *Samanea saman* pods as feed for livestock

Mr. Worlah Akwetey

- Effect of pre-rigor and post-rigor on the quality of hamburger
- Pre- and Post-rigor treatment effects on tenderness, cooking loss and water holding capacity of roast pork loin steaks

MAJOR SERVICE TO THE COMMUNITY

The farms of the Department have served the practical training needs of farmers with the on-hands training model it operates as well as giving students of both the Faculty of Agriculture and other agricultural institutions the opportunity to appreciate the science that backs agricultural production. Several students from many Junior and Senior High Schools as well as other sister Universities, such as the University for Development Studies, Tamale and the University of Education, Mampong Campus visited the various sections of the farm during the year.

The Department still operates the model farm established with the grant from FINATRADE Group of companies where students have continued to have practical experiences of raising broilers and fattening pigs with profit as an added motive.

Several institutions, private organizations, and many farmers continue to use the services provided by the Nutrition and the Veterinary Diagnostic Laboratories to solve industrial and farm level problems.

Animal products such as eggs, chickens and several processed meat products were provided on a more stable basis this year. The pigs from the breeding farm of the Department are the first choice of farmers in the Ashanti Region and as far as Sefwi in the Western Region.

SERVICE TO THE COMMUNITY

Prof. D. B. Okai continues to serve on many international and local animal related organizations. He continues to be the editor-in-chief of the Ghanaian Journal of Animal Science and was one of the editors for the Ghana Society of Animal Production Conference Proceeding 2009. He still serves as a member of the Ashanti Region Research-Extension-Farmer Linkage Committee (RELC)

Prof. S. A. Osei serves on the Board of Education of the Assemblies of God Church. He serves as External Examiner to several sister Universities. He is also a reviewer of the Ghanaian Journal of Animal Sciences.

Prof. A. Donkoh is the Dean of the Faculty of Agriculture and he continues to serve on several university boards. He is a member of the Steering Committee of the West African Agricultural Productivity Programme. He is also a reviewer for Animal Feed Science and Technology (the Netherlands), Ghana Journal of Agricultural Sciences and the Ghanaian Journal of Animal Sciences. He also serves as the Chairperson of the Board of Governors of the KNUST Senior High School and an External Examiner to several sister Universities.

Prof. (Mrs) C. C. Atuahene serves as External Examiner to several sister Universities. Prof. (Mrs) Atuahene continues to serve on the Board of the Council for Scientific and Industrial Research (CSIR) as well as being a member of the University Council of the Presbyterian University. She is also a reviewer for the Ghanaian Journal of Animal Sciences.

Dr. O. S. Olympio is working with two of his PhD Students (Mr. Adomako and Mr. Hagan) at Akate Farms and Trading Company Limited to develop a breed of Chickens (Layers with the Naked Neck, Frizzle and Naked Frizzled gene) which are better adaptable to the tropics. The project is in its third year phase and much progress has been made. He was one of the editors for the Ghana Society of Animal Production Conference Proceeding 2009 and a reviewer of the Ghanaian Journal of Animal Sciences.

Dr. E. L. K. Osafo is the Head of Department of Animal Science. He is an elected member of the Executive Committee of the University

Mr. P. K. Karikari continues to Head the Boadi Cattle Research Station of the university. He is a board member for several university committees and a reviewer for the Ghanaian Journal of Animal Sciences. He also serves as External Examiner to several sister Universities.

Mrs V. Attah-Kotoku continues to be the Deputy Faculty of Agriculture Examinations Officer. She is also a reviewer for the Ghanaian Journal of Animal Sciences

Mr. W. Akwetey is the sectional Head of the Meat Science and Processing Unit of the Department of Animal science

DONATIONS TO THE DEPARTMENT

Agricare Limited supported the Department in many ways by providing financial support for staff to attend Scientific meetings. Akate Farms also donated one thousand day old chicks and some crossbred naked necked pullets for research at the Department

DAIRY/BEEF CATTLE RESEARCH STATION

INTRODUCTION

The Station which was established in 1974 is a teaching and research facility for the Faculty of Agriculture. It stocks cattle, sheep, goats and rabbits for research purposes. The main research areas are livestock production and dairy processing.

RESEARCH

The following research programmes were completed in the year under review.

- Effect of moringa leaf meal (MOLM) on nutrients digestibility, growth, carcass and blood indices of weaner rabbits.
- Effect of millet residue meal based diets on the reproductive performance of mixed-breed domestic rabbits in a tropical environment.
- Shea nut cake in supplemental concentrates for growing Djallonke rams fed a basal diet of rice straw and groundnut haulms in the dry season..

The Station's on-going research programmes include the following:

- Household consumption of rabbit meat in the Ayigya community in Kumasi.
- A study on drinking yoghurt using different levels of sodium benzoate as a preservative.
- Feed intake and growth performance of adolescent female rabbits fed diets containing a blended leaf meal of *Chromoleana odorata*, *Gliricidia sepium* and *Leucaena leucocephala*.
- The nutritive value of *Gliricidia sepium*, *Leucaena leucocephala* and *Chromoleana odorata* in the diets of weaner rabbits.

COMMUNITY SERVICE

The Station continued to provide technical assistance to farmers and would-be farmers in the field of livestock production. Several people, including students, were taught yoghurt production in the course of the year. Some final year students of the Department of Animal Science of this University were assisted to undertake their project work at the Station. Also, several second cycle institutions paid educational visits to the Station during the year under review. The Station provided extension advice to livestock farmers and yoghurt producers during the year. It also extended its yoghurt market beyond the confines of the University. Several agents were secured for this purpose.

INCOME GENERATION

Breeding and live animals for slaughter were also sold to the general public during the year. An amount of GH¢43,342.57 was generated from the commercial activities of the Station.

AGRICULTURAL RESEARCH STATION (ARS) – ANWOMASO

The Agricultural Research Station (ARS)–Anwomaso, about 10 kilometers from the main University campus has a total land area of 554.492 hectares (ha) (1,386.23ac) of extensive arable land suitable for livestock/crop production, as well as fish farming, of which less than 10% of the total land area is developed into the Station's oil palm and citrus plantations. It shares boundaries with the following settlements – Anwomaso, Domiabra, Kwamo, Fumesua and Bebre.

ACTIVITIES

The activities of the Station over the period included:-

- Research
- Plantation development and arable crop production.
- Extension and Community services
- Establishment of Forage and Weeds museum
- Briefing visiting students to the Station

RESEARCH

Research being undertaken at the Station include:

- Integration of pastures and small ruminants in oil palm plantations
- Performance of various forage species in the semi deciduous forest zone of Ghana
- Tolerance of forage species to oil palm canopy cover.

PLANTATION DEVELOPMENT AND ARABLE CROP PRODUCTION

The Station established an oil palm nursery from which transplantable seedlings were used to fill vacant spaces of the replanted 4 ha (10 ac) field and for establishment of new over grown fields. Other activities during the period included maintenance of the nursery, oil palm and citrus plantations, harvesting of farm produce and vegetable production.

EXTENSION AND COMMUNITY SERVICE

The Station continued to sell farm produce (main income earner of the Station) viz oil palm fresh fruit bunches (FFB), citrus fruits, maize and vegetables to the University community, the Animal Science Department, St Louis Girls' High School, the Okomfo Anokye Teaching Hospital and resident communities around the Station. Some farmers interested in oil palm cultivation visited the station for some advice on the cultivation of the crop.

The second year regular students (2009/2010 group) of Faculty of Agriculture, visited the Station in one of the practical periods to observe and study the various forage species (legumes and grasses) established in the Forage and weeds museum at the Station.

PROBLEMS/CHALLENGES

The Station continues to operate without the basic facilities viz: a residential and office accommodation, electricity, water and therefore continues to use an old zinc shed, the only structure available for an office, changing room for workers and students, as well as a store for records, farm inputs and implements. Other setbacks include the following:

- Aging labour force
- Non-replacement of retired employees
- Inability to attract casual labour due to low minimum wage rate compared to private rate
- Annual bush fires in the dry seasons resulting in the slow development and low yield of palms.
- Degradation of arable land due to sand winning activities.

FACULTY OF RENEWABLE NATURAL RESOURCES INTRODUCTION

The Faculty of Renewable Natural Resources is one of the three Faculty components of the College of Agriculture of the Kwame Nkrumah University of Science and Technology, Kumasi. It was

established in 1982 and runs undergraduate and postgraduate programmes in Renewable Natural Resource Management.

TEACHING AND RESEARCH

The Faculty consists of five academic Departments and they are:

- Wood Science and Technology Management
- Wildlife and Range Management
- Silviculture and Forest Management
- Fisheries and Watershed Management
- Agroforestry

In addition, the Faculty runs a separate postgraduate programme, GIS (Naturium), under the auspices of ITC (Netherlands)

STAFFING

The Faculty has 30 Senior Members, 17 Administrative and Technical staff.

INTAKE OF STUDENTS

During the year under review, the student population increased to the following figures:

- Postgraduate Students 50
- Undergraduate Students 695

TEACHING AND LEARNING

The Faculty continues to enhance teaching and research activities. During the year under review, five LCD projectors were purchased for the Departments. A new postgraduate office was also opened with internet facilities where students could carry out their research work.

REACTIVATION OF THE DEPARTMENTAL LABORATORIES

The five Departments of the Faculty have been reactivated and laboratory technicians have been appointed to serve in these departments.

VISITORS TO THE FACULTY

From 4th to 8th December, 2009, the Faculty received Prof. Neil Thomas, APERL-CIDA Representative from Canada.

From 5th to 11th March, 2010, the Faculty received Prof. Andrew Gordon and Prof. Naresh Thevathasan, APERL-CIDA Director and Coordinator respectively from Canada.

DEPARTMENT OF SILVICULTURE AND FOREST MANAGEMENT

INTRODUCTION

The Department of Silviculture and Forest Management is under the Faculty of Renewable Natural Resources. The Department's mission is to promote through teaching and research, knowledge relating to the creation and management of forest resources.

Its objectives are to:

- train professional foresters through undergraduate and postgraduate programmes
- conduct quality research into forestry and its allied sciences
- carry out extension, consultancy services and other income generating activities.

PROGRAMMES OFFERED BY THE DEPARTMENT

The Department provides opportunity for a specialization in silviculture and forest management in the BSc. (Nat. Res. Mgt) degree offered by the Faculty of Renewable Natural Resources and offers M.Phil and PhD Programmes in Silviculture and Forest Management.

STAFF DEVELOPMENT

Miss Joana Ameyaw began a PhD sandwich programme in the Wageningen University and Research Centre in January 2010.

Dr Emmanuel Acheampong attended the following training workshops:

- Training Workshop on “Learning-Oriented Monitoring and Evaluation (M&E)”. (5-8th October 2009). Training offered by Wageningen International, Netherlands.
- Training Workshop on “Enhancing Stakeholder Participation in National Forest Programme (NFP) Processes” (16th – 21st November 2008).
- Training offered by the FAO of UN and the Forestry Commission of Ghana.
- Training Workshop on “Participatory Monitoring and Evaluation” (18 – 21 February 2008); course offered by Wageningen International, Netherlands.

RESEARCH ACTIVITIES

The Departmental research programme is concentrated on the following areas:

Dr Emmanuel Acheampong

Forest-related livelihoods and forest governance in the high forest zone of Ghana:

Using timber resource creation as a case, the research objective is to examine the role of forest governance innovations in shaping local peoples’ reliance on forest resources as livelihood support, and what further improvements will be required to harness the contribution of forests and trees to livelihoods of local people.

Dr. Boateng Kyereh

Indigenous ecological knowledge of on-farm tree management:

This research is essentially an ethno-ecological survey to assess differences in levels of indigenous ecological knowledge on trees among knowledge holders in farming communities and to test for the existence of any discernible patterns in knowledge.

Species invasion of Ghanaian forest reserves

Starting with *Broussonetia papyrifera*, an invasive medium-size tree originally from the Far East, this study aims to determine the ecological traits of the species as well as the environmental and socio-economic conditions that enhance its invasion in natural and semi-natural plant communities in Ghana.

Dr. E.A. Abeney

Logging and natural forest regeneration

This research attempts answering questions related to the forest’s ability to recover successfully after it has been logged. Specific studies under this research are examining the impact of felling and hauling on the residual forest vegetation and soils as well as seedling population dynamics of trees which regenerate after logging.

INSTITUTIONAL COLLABORATION

The Department collaborated with key forest sector institutions and overseas universities on various developmental and research projects in the country. Senior members who participated on such projects and the roles they played are listed below.

Dr. Boateng Kyereh

Scientific Coordinator of Tropenbos International Ghana. Responsible for the scientific direction and quality of all Tropenbos supported research projects in the country.

Member of the project management team of the European Union Supported Project on Developing Alternatives for Illegal Chainsaw Lumbering Through Multi-stakeholder Dialogue in Ghana and Guyana. (Implementing Agency, Tropenbos International)

Member of the working group on Small and Medium Forest Enterprises Development in Ghana (Implementing Agency, Tropenbos International)

Member of the project implementation team of the ITTO Project for “Quality Control and Standardization of Ghanaian Wood Products”. (Implementing Agency, Forestry Research Institute of Ghana).

Local supervisor of two PhD students of Wageningen University and Research Centre, the Netherlands. The students’ research topics are (i) Scenario analysis of sustainable forest management in Ghana (ii) Effects of climate change on regeneration of forest tree species in Ghana

Local supervisor of a PhD student of the University of Amsterdam researching on forest and tree-related livelihood conflicts in the high forest zone of Ghana.

Local supervisor of one MSc student of University of Freiburg, Germany who is working on the role of stakeholders in the management of timber resources in off-reserve forest areas of southern Ghana.

Dr Emmanuel Acheampong

Member of Project Team - National GHG Mitigation Potential Assessment for the Agriculture and Forestry Sectors of Ghana. This project was under the Government of Ghana/UNDP Annual Work Plan, 2009. It aimed at strengthening capacities to reduce risks associated with climate change among key institutions and harmonising policies and practices to manage climate change/disaster risks.

Member, Forest Connect Working Group. This Project seeks to reduce poverty by linking small and medium forest enterprises (SMFEs) with market and service providers.

Member of Proposal Formulation Team on “Development of Timber Procurement Policy for Ghana”. Proposal submitted to Ministry of Lands and Natural Resources by the Forestry Research Institute of Ghana (FoRIG).

Member of research team (based in FoRIG) for “Developing Alternatives to Illegal Chainsaw Milling through Multi-stakeholder Dialogue in Ghana and Guyana”. Specifically worked on “Forest and tree tenure and access to timber and their impact on chainsaw milling in Ghana.”

SERVICE TO COMMUNITY

Dr. E.A. Abeney

Chairman National Working Group on Forest Certification

Member of the Multi-stakeholder Implementation Committee of the Voluntary Partnership Agreement on legal timber between Ghana and the European Union.

Dr. E Acheampong

Member of Project Team - Newmont Ghana Gold Limited (NGGL) external stakeholder perception and expectations study. The objective of the study was to identify the basis of stakeholder perceptions and the root cause of their expectations/demands on NGGL and to advise NGGL on how to engage external stakeholders in ways that build on its foundation of transparency and, to a reasonable extent, meet stakeholder expectations.

A member of a consortium that developed a proposal on “Assessing the socio-economic and ecological implications of industrial biodiesel plantations: Repercussions of *Jatropha curcas* on rural land use alienation and conflict escalation in Ghana and Ethiopia”. This Project is under the Conflict and Cooperation over Natural Resources in Developing Countries (CoCooN) Programme, funded by the Directorate General of Development Cooperation (DGIS) of the Ministry of Foreign Affairs of the Netherlands and the Netherlands Organisation for Scientific Research (NWO).

WORKSHOPS/CONFERENCES ATTENDED

D. Boateng Kyereh

Managing the consequences of timber legality standards on local livelihoods workshop. 8-9th October 2009 Erata Hotel Accra

Workshop on preparation of sectoral policy briefs on climate change and disaster risk reduction. July 29 – August 01, 2009. Manet Hotel Ada Foah.

Workshop on sawmill conversion efficiency and chain of custody in forest certification. 16 -19 March 2009. Miklin Hotel Kumasi.

Consultation Workshop on Development of National Strategy on Climate Change Mitigation. Organized by the EPA, Kumasi (16th – 19th August, 2009).

Africa Regional Workshop on Chainsaw Lumber Production. Organized by Tropenbos International–Ghana and Forestry Research Institute of Ghana, Accra, Ghana (25th – 26th May, 2009)

Dr Emmanuel Acheampong

Workshop on National Forest Programme Update. Organized by Resource Management Support Centre of the Forestry Commission of Ghana and FAO, Wood Industries Training Centre, Akyiawkrom, Ejisu, Kumasi (30 December 2009).

Consultation Workshop on Development of National Strategy on Climate Change Mitigation. Organized by the EPA, Kumasi (16th – 19th August, 2009).

Regional Workshop on chainsaw lumber production. Organized by Tropenbos International – Ghana and Forestry Research Institute of Ghana, Accra, Ghana (25th – 26th May, 2009).

Dr. Philomena D. Kumapley

Participatory Scenario Development for Costing Climate Change Adaptation. World Bank/Participatory Development Associates. Coconut Grove Hotel, Accra. June 11, 2009.

Regional Sensitization Workshop on the Forest Instrument: A Contribution to Reducing Deforestation and Forest Degradation. FAO and Forestry Commission. Wood Industries Training Center. Akyawkrom July 14, 2009

Financing and Cost Recovery Mechanisms for Invasive Alien Species Prevention and Management in Ghana. UNEP/GEF/IAS Project on Removing Barriers to Invasive Plant Management in Africa. Ministry of Environment Science and Technology/CSIR. Science and Technology Policy Research Institute Accra, October 29, 2009.

Second National Forestry Forum under the auspices of Natural Resources and Environmental Governance Programme. Forestry Commission. WITC Akyawkrom. April 1, 2009

INTERNAL INCOME GENERATION

For the period under review, the Department's fund-raising activities were concentrated on research proposal development/application for research grants. Some grants totaling €11000 were subsequently received from Tropenbos International Ghana to support undergraduate and post-graduate research work in the Department. A project proposal submitted to the International Tropical Timber Organization on sustainable management of mangrove forests in the Amanzuri and Ama Emissa River Estuaries has been approved and advertised in the international donor community for funding.

DEPARTMENT OF FISHERIES AND WATERSHED MANAGEMENT

The Department has a mandate to train students and personnel for inland fisheries management, aquaculture, and watershed and wetlands management to facilitate sustainable utilization and management of fisheries and aquatic resources.

TEACHING AND RESEARCH

The Department continues to effectively teach the Fisheries and Watershed Management of the Faculty's programme while conducting, laboratory practical and field studies. Research activities in the Department are focused in the following areas:

- Aquaculture and Environment
- Fish Nutrition in Aquaculture.
- Best Management Practices for Effluent control from fish farms
- Habitat modification and Fish Population dynamics
- Broodstock Management and Fingerling production
- Ecology of Cichlids in the Lake Bosumtwi.

Undergraduate student research topics are largely centered on Fish Farming, Freshwater Ecology, Aquatic Pollution, Effects of Aquatic Habitat Modification, Watershed Management, Fishing and alternative Sustainable Livelihoods.

Postgraduate research at MPhil and PhD have recently focused mainly on Aquaculture, Aquatic Ecology, Pollution, Climate change and impacts on livelihoods in watershed communities.

COLLABORATIVE RESEARCH

Dr. S. Amisah

Served as the Ghana Principal Investigator of the “AquaFish Collaborative Research Support Initiative in Sub-Saharan Aquaculture” with funding from The University of Purdue, the USAID and the American people. A memorandum of understanding was signed between the department and Purdue University. Dr. Amisah recently presented papers at the World Aquaculture Conferences in Seattle, Washington State and San Diego, California in the USA. A collaborative research with Virginia Tech is already underway and studies have been conducted on impacts of fish farm effluents on receiving streams in mid-southern Ghana.

Another study evaluating the efficacy of indigenous fish species as aquaculture candidates, with funding from Aqua Fish CRSP, the USAID and Virginia Tech and State University is well underway and 3 MPhil students are already recruited to pursue this study. One of the MPhil students is already in Virginia Tech but will be back to Ghana for data collection later in the summer.

Through the initiatives of Mr. Ben Campion and also Dr. Amisah, the Department received equipment for water quality determinations and some teaching aids worth over USD 20,000 from Germany and the USA. Similar equipment including hand held GPS units have been received by the Department and this is enhancing research and teaching in the Department.

The Department of Fisheries and Watershed management has embarked on active peer reviewed publications in journals of international repute. A considerable number of publications have been made as a result over the past year. These are presented in the sections that follow. It is hoped that many more will follow with as our collaborative researches progress.

INTERNATIONAL CONFERENCES

S. Amisah(2010) Management practices for the control of fish farm effluents in fish farms in mid-southern Ghana. *Paper presented at World Aquaculture Conference*, San Diego, California, USA, Feb 27- March 6, 2010.

S. Amisah and Frimpong, E. (2009) Evaluating pond aquaculture effluents through biological assessment of fish and benthic macroinvertebrate assemblages in receiving streams. *Paper presented at Aquaculture America 2009*. February 15-18, 2009. Washington State Convention Center, Seattle, Washington, USA

EXTENSION LINKS/COLLABORATION

A formal research and education linkage between the Department and Virginia Tech and State University, Blacksburg was established while research collaboration at the local level is strongly maintained with the CSIR/Water Research Institute.

A Memorandum of Understanding (MOU) has been signed between Virginia Tech and State University Blacksburg, USA, University of Auburn, Alabama, U.S.A and the Department, in particular, and with KNUST as a whole. In another development, Dr. Steve Amisah represented Ghana on the CRSP to organize site inspections in South Africa, Brazil, Ghana and Vietnam for future research and development.

SERVICE TO THE COMMUNITY

Messrs. Alfred Dassah, Godfred Owusu Boateng and Benjamin Campion continue to serve as resource persons in fish farming workshops organised by the Fisheries Department. The Department continues to provide services to prospective fish farmers and also supplies fingerlings and table size fish. Dr. Amisah continues to represent KNUST and Ghana at the World

Aquaculture Conferences held at various locations on the globe including. The Department is playing a leading role in teaching fish farmers on management of fish farm effluents.

DEPARTMENT OF WOOD SCIENCE & TECHNOLOGY TEACHING

The Department continues to provide support to the FRNR regarding the teaching of several Undergraduate courses including Basic Genetics, Pathology and Microbiology, Environmental Physiology and General Entomology. The Department also undertakes Postgraduate programmes in MSc MPhil, PhD in Wood Science Technology, Timber Engineering, Furniture Design and Production.

MAJOR RESEARCH BY STAFF

Dr. Charles, Antwi-Boasiako

- Comparative wood Anatomy of Secondary (Lesser-Known and Utilized) Ghanaian Timber Species.
- Properties of Secondary and related wood species and Natural Durability Studies of using: field and laboratory tests
- The use of different strains of decay organisms (e.g. fungi) in natural durability and biotechnology studies.
- Preservative Treatment of Wood including Identification, Characterization and Assessment of the use of Extractives as ‘Natural Preservatives’ in treating Wood.
- Studies on the propagation, properties (chemical analysis) and potential utilization of bamboo and rattan - A Research Programme in conjunction with ICBR in Beijing, China.
- Biomass Energy Production.
- Growth performance of *Moringa* spp. and other related research issues of the genus.

Prof. K. Frimpong-Mensah

- Forest Policy on Wood Residue Utilization in the timber Industry.
- Identification of durable Lesser Utilized Species for Construction (Bridges, Timber Frame Houses).
- Sawing Accuracy of Stellite-tipped Saws.
- Surfacing and finishing of Wood.
- Furniture Design for Interior Decoration.
- Wood Packaging material requirements for the International Plant Protection Convention (ISPM 15).
- Utilization of lesser utilized timber species for light bridge construction.
- Solid timber waste utilization for briquettes and biomass energy.
- Utilization of timber for construction.
- Furniture design in non-timber wood products.
- Remnant trees on cocoa farms.

Mr. Jonny Osei Kofi

- Microbiological applications in wood preservation.

- Investigations into Non-Timber Industrial materials as supplements to traditional timber species.
- Bamboo anatomy and its influence and response to preservative methods.
- Bamboo preservation with candidate plant extracts.
- Local oil/fat based plant products as potential water repellent materials for bamboo products.
- Studies on *Borassus ethiopum* as a potential commercially viable woody constructional material.
- Investigation into plants with high yielding tannin production and optimum use of harvested residual materials.

Dr. N. A. Darkwa

- Pulping Characteristics of Lesser utilized Plantation Species (*Gmelina arborea*).
- Physical and Chemical Properties of *Gmelinaarborea* wood.
- Paper recycling techniques.
- Tannin extraction from indigenous plant species for formaldehyde-free wood adhesive production.

Dr. Abdul K. Boakye-Yiadom

- Comparative study of the Anatomy of Ghanaian wood species.

SERVICE TO COMMUNITY

- Members of the Department provide support to the FRNR/FCGE/HSB project between Ghana and Switzerland.
- The initial protocols for the development of a formaldehyde-free adhesive production project in Ghana with Bern University of Applied Sciences, Biel, Switzerland has been discussed. The Kumasi Glue Factory has accepted the role of an industrial partner in this research and production project.
- A member also participates actively in the structuring and functioning of the Centre for Disability and Rehabilitation Studies (CEDRES) of the School of Medical Sciences. Other services are as follow:

Dr. C. Antwi-Boasiako

As the immediate past head of department he supervised the administrative and academic issues regarding the staff and students of the Department. He deputized for the Dean of FRNR on several occasions. He is a lay-preacher and the Secretary to his church (The Salvation Army). He is also the first and current Secretary of the Moringa Association of Ghana (MAG).

In addition, he served as:

- Vice-Patron of the Renewable Natural Resources Students Association (RENARSA), KNUST.
- Facilitator of AROCHA, KNUST
- Member, The International Moringa Association (IMA) and Moringa Association of Ghana (MAG)
- Secretary, GACON (Ghana Assoc. for the Conservation of Nature), an NGO concerning Environmental issues (also an Associate Consultant).
- Facilitator, INBAR (on bamboo and rattan issues & products).
- Chairman, FRNR Guest House Committee

- Chairman, Investigating team regarding of a missing computer from FRNR students' Computer Pool.

Resource Person and Facilitator

- Public Teachings & Practical Demonstrations in mushroom cultivation, snail-rearing and bee-keeping & honey production.
- Moral education and public lectures on the radio, in schools, churches, and the general community regarding youth and adult issues.
- Gave a talk on career development themed: “*Stirring up the academic giant in you*” at the Queen’s Hall for the International School of Prayer Incorporated (ISOPI) and at Church of Pentecost, Gyenyase District.

Practical Training Programmes

- In charge of all Practical Training Programmes for Wood Science students at FRNR.
- Team member and a Supervisor in the **Timber Bridges Research Project with BERN University, Switzerland**: As a Researcher,
- Student Tutoring Project: Dr. Antwi-Boasiako had the chance to be engaged in the “*Student Tutoring Project*” at the Reading University, Reading (UK).
- Part-time lecturer: At the Postgraduate level at the Faculty of Technology, University of Education Winneba, Kumasi Campus.
- Visiting Scholar/Researcher - International Centre for Bamboo and Rattan (ICBR): invited by ICBR in Beijing, China, from 19th February to 19th April 2008 to study the chemical analysis of some selected tropical bamboo species from Ghana.

Prof. Nana K. Frimpong-Mensah

- Board Chairman, Oweriman Schools, Domeabra, - Ashanti-Akim.
- External Moderator/Examiner, Department of Renewable Natural Resources, UDS, Tamale.
- External Moderator/Examiner for National Board for Professional Technical Examinations (NABPTEX).
- External Examiner for Accra, Takoradi, Kumasi Polytechnics, Departments of Furniture Design and Construction.
- Member, College of Science Board. Representing the College of Agriculture and Natural Resources.
- Board Member of Aninwah Medical Centre at Emena, Kumasi.
- Member, International Union of Forest Research Organizations, IUFRO.
- Member, Institute of Professional Foresters, Ghana.
- Member, International Steering Committee, World Energy Congress XI, WREC – 2010 and Exhibition, 25-30 September 2010, Abu Dhabi, UAE.
- Member, National Accreditation Board panel on College of Technology Education programme on Wood Science and Technology.
- Installed as Adontehene of the Domeabra Traditional Area.
- Member, Unity Hall Council
- Member, Board of Directors of GACON, an Environmental NGO.
- Researcher and Team leader of Timber Bridges Research Project with BERN University, Switzerland:

Mr. J. Osei Kofi

As the Head of Department, regular consultations have been held on harnessing the resources of the department to enhance best practices by students and staff at the department's wood workshop and laboratory by providing additional tools, equipment and materials for practical work. Every student of the department must know the use of basic tools and machines. Three new wood drying kilns are inspected to put in use. Our workshop successfully participated in the refurbishment of the Faculty of Renewable Natural Resources Guest House.

- Cognate Member, representing FRNR at the Faculty of Forest Resources Technology, Sunyani campus
- Team Leader, Tannin Adhesive Project (DWST-FRNR) with Bern University of Applied Sciences, Biel, Switzerland (2009 to date)
- Member (2008 to date), FRNR Guest House management committee.
- Member, Investigation team in respect of stolen computer from FRNR students' Computer laboratory (2008 to date).

Participation in NUFFIC NPT Project GHA/089 at the School of Medical Sciences as follows:

- Facilitator of the "Disability Project" for the Community Health Department (School of Medical Sciences) in collaboration with NUFFIC, in the Netherlands.
- Team Member, Curriculum development for B.Sc., M.Sc, Ph. D programmes for Disability and Rehabilitation Studies at Centre for Disability and Rehabilitation Studies, Department of Community Health, SMS.
- Development of conceptual block plan for construction of the Center for Disability and Rehabilitation Studies (CEDRES) complex for KNUST.
- Organization of Disabled Peoples Organizations (DPOs) to participate as frontline partners in the Disability Project of SMS with respect to capacity building, identifying research sites, allocating research students to PWDs for field assistance.

Part-time Lecturer- Garden City University College, Nursing School- courses: Microbiology and Anatomy.

Director, Foundation Africa Next Door, Kumasi – A human development oriented NGO with special attachment to vulnerable groups.

Member, Catholic Graduates for Action (CAGA), Kumasi, Ghana.

Member, Dr, John Kofi Turkson Foundation, Kumasi, Ghana – youth development and energy issues.

Team member, NUFFIC NPT Project 278 at College of Agriculture and Natural Resources

Dr. N.A. Darkwa

- Served as a member of the Ashanti Regional Environment Networking committee.
- Researcher and Team member; Timber Bridges Research Project with BERN University, Switzerland:
- Lead Expert on adhesives, Tannin Adhesive Project (DWST-FRNR) with Bern University of Applied Sciences, Biel, Switzerland,

Dr. Abdul K. Boakye-Yiadom

- Patron of the Ahmadiyya Muslim Students Association of Ghana (AMSAG) since March, 2002, and helped organize several symposia for the KNUST Branch.

SEMINARS, CONFERENCES AND WORKSHOPS**Dr. Antwi-Boasiako**

Facilitating multi-stakeholder Processes and Social Learning. Wageningen UR, International (Netherlands) **September, 2009**

Mr. J. Osei Kofi

Organization of the 1st National Disability Conference, Great Hall, KNUST 3rd – 4th August, 2009.

Member, Delegation of the Centre for Disability and Rehabilitation Studies (SMS) to the 2nd Symposium of the African Network for Evidence-to-Action in Disability (AfriNEAD), hosted by Stellenbosch University, Cape Town, South Africa – 30th November to 4th December, 2009.

Workshop for Development of Sustainability Plan for the Centre for Disability and Rehabilitation Studies and preparation and presentation of 2009 Annual Report to NUFFIC. Hogeschool Leiden, Leiden and NUFFIC Headquarters, The Hague. Netherlands, 20th – 26th March, 2010.

NPT Training workshop. Applying INRM Principles in Learning Programmes on Innovative NRM Approaches. Kuntanase, Ashanti. 6th – 10th July, 2009.

NPT Training Workshop on Monitoring and Evaluation, Santase, Kumasi. 5th – 8th October, 2009

Member, Delegation of the Centre for Disability and Rehabilitation Studies (SMS) to the 2nd Symposium of the African Network for Evidence-to-Action in Disability (AfriNEAD), hosted by Stellenbosch University, Cape Town, South Africa – 30th November to 4th December, 2009.

DEPARTMENT OF AGROFORESTRY**INTRODUCTION**

The Department of Agroforestry is one of the five Departments of the Faculty of Renewable Natural Resources providing support to FRNR in the teaching of undergraduate courses in Soil Science, Technical Communication, Agroforestry, Agriculture, Natural Resources Extension and Economics, Social and Urban Forestry. The Agroforestry option in BSc Natural Resources Management Programme continues to be attractive to students with the current third and fourth year Agroforestry option classes being 35 and 29 in number, respectively. The Department's graduate programmes continued to attract students. In the year under review eleven (11) graduate students registered including one PhD candidate.

ACADEMIC STAFF

The Academic staff strength of the Department is six. Prof. S.J. Quashie-Sam retired from the Department in January after serving the University for 30 years. Dr. V.R. Barnes was recruited to strengthen the teaching and research activities in the forestry aspects of Agroforestry. The Department requires more lecturers and efforts are being made to recruit additional staff.

RESEARCH

The academic Staff in collaboration with other colleagues and graduate students continued to conduct research in the following areas:

- Rhizobial and Mycorrhizal studies on indigenous tree legumes.
- Nutrient dynamics in agroforestry systems and forest plantations.
- Social-economic evaluation of Agroforestry systems.
- Agroforestry in community development.
- Agronomic studies on *Jatropha curcus* established from seeds and from cuttings
- Use of multipurpose trees biomass for soil fertility improvement.
- Global Energy Assessment
- Gender and Agroforestry
- Ecological and Socio-economic effects of land use and fire in and around forest reserves.
- Climatic Change and forest fire incidence in Ghana.
- Evaluation of Community Fire Management around Forest Reserves

COMMUNITY SERVICE

Academic staff of the Department continued to offer their services both to Local and International Institutions.

Dr. Twum-Ampofo is a member of the Regional Agroforestry Training Team and also served as a consultant/Agroforestry Specialist to TechnoServe USAID funded food security programme

Dr. (Mrs) Olivia Agbenyega is a member of the Technical Advisory Committee (TAC) for the oversight of surveys on Labour and Agricultural Practices by the International Labour Organization (ILO)/United States Agency for International Development (USAID). She is also the lead Author for Global Energy Assessment, coordinated by the Energy Program at the International Institute for Applied System Analysis (IASA) Vienna, Austria. Furthermore, Mrs Agbenyega is the coordinator for Gender mainstreaming workshops for APERL Project communities in the Brong Ahafo Region.

Dr. Charles Oti-Boateng is involved in the Training of Farmer Based Organization (FBOs) in the Ejura-Sekyeredumase and Sekyere West Districts of Ashanti in improved technologies to improve the production of major crops in the district. He is parenting Catholic Students (International Movement of Catholic Students – Pax Romana) at KNUST and also served as Guest Speaker for the 79th Speech and Prize Giving Day, St. Augustine’s College, Cape Coast in March 2009.

Dr. Victor Rex Barnes is coordinating the formation of Environmental Youth Clubs in three Forest Fringe Communities in Brong-Ahafo to enhance environmental activities. He is also a member of the Forest Stewardship Council (FSC) Certification Project under the Kumasi Wood Cluster.

COLLABORATION

The Department continues to collaborate with local and International Institutions in enhancing teaching and research activities of academic staff and students. In collaboration with University of Guelph, members continue to provide support to the Ghana – Canada APERL Project funded by CIDA. The Project seeks to enhance resource poor livelihood using Agroforestry technologies. In addition, the APERL Project has provided the Department a state of the art Plant and Soil Analysis Laboratory. Six Postgraduate Students have also benefited from APERL

Project Scholarship for 3 – 6 months research training at University of Guelph.

In collaboration with University of Guelph, Department of Environmental Biology an International MSc Programme in Agroforestry and Development and an undergraduate Distance Education programme are being developed.

The Department also collaborates with the Natural Forest Division of Forestry Research Institute of Ghana, Kumasi and the University of Ibadan, Department of Forest resources, Ibadan, Nigeria on the African Forestry Research Network (AFORNET) funded Project on “Assessment of Conflicts among Forestry, Agriculture and Land Policies in Ghana and Nigeria: “Prospects for Reconciliation”. **Dr. Twum-Ampofo** is on the research team as Agroforestry and also coordinates the Ghana programme.

CONFERENCES, SEMINARS AND WORKSHOPS

Dr. (Mrs.) Olivia Agbenyega

- 2nd World Congress of Agroforestry, Nairobi, Kenya, 2009.

Dr. C. Oti-Boateng

- 2nd World Congress of Agroforestry, Nairobi, Kenya, 2009
- The 2nd Generation Biofuels/Jatropha Global Summit 2009, Accra, Ghana, 2009.

DEPARTMENT OF WILDLIFE AND RANGE MANAGEMENT INTRODUCTION

The Department continued to offer courses leading to the award of BSc Natural Resources Management, MPhil and PhD in Wildlife and Range Management degrees. Plans are underway to diversify the postgraduate degree programmes offered by the department and also to start a taught Masters. The department also houses the MSc programme in GIS for Natural Resources Management, collaboration between KNUST and ITC, Enschede, The Netherlands.

STAFF RESEARCH

- Virus biology, host ecology and human behaviour as determinants for coronaviral zoonoses in Ghanaian bats. Collaborating with KCCR and University of Bonn Medical Centre, Germany. S. K. Oppong, Principal Investigator
- Curbing Malaria in Kumasi Region using environmental compatible strategies. Collaborating with KCCR, KNUST. S. K. Oppong, Principal Investigator
- Grasscutter breeding project; to demonstrate husbandry and management of grasscutters under captivity. Departmental Staff Research.

COMMUNITY SERVICE

Members of staff continued to offer their services to many national and international agencies including the following;

Prof. S. K. Oppong

- Joint Course Coordinator, ITC/KNUST MSc in GIS for Natural Resources Management programme, 2005 to date
- Management Team, Agroforestry Practices to Enhance Resource-Poor Livelihoods (APERL), Project No. S63440, Funded by Canadian International Development Agency
- Reviewer, Ghana Journal of Agricultural Science
- Reviewer, Journal of Ghana Science Association
- Reviewer, Journal of Science and Technology
- External examiner, Faculty of Renewable Natural Resources, UDS, Tamale
- Consultant, Accra Plains Irrigation Project, July, 2009

Prof William Oduro

- Coordinator/Research Scientist. Central Ghana Sector of the Project “Sustainable Land Management for Mitigating Land Degradation, Enhancing Agricultural Biodiversity and Reducing Poverty in Ghana (SLaM; Funded by GEF/UNDP/Ghana Gov. – 2005 to 2009
- Coordinator KNUST – Agroforestry Practices to Enhance Resource-Poor Livelihoods. Funded by Canadian Development Agency (CIDA). University of Guelph/KNUST – 2008 to date
- Assessment of Development Result (ADR) of Ghana meeting. Evaluation Office of UNDP. Friday, October 2009. Airport west hotel, Accra, Ghana
- Member, KNUST Strategic Plan Implementation Committee. 2009-2010
- Chair, Adhoc committee to consider policy options to regulate the approval of permission to pursue part-time, sandwich, distance studies etc. for junior and senior staff. 2009 -2010
- KNUST representation on the scholarship review committee, scholarship secretariat. Accra. 2008 to date
- Member, Embedding Changes Group. Responsible for embedding changes in College of agriculture and Natural resources culture and analysing Strategic choices (E&S). NPT 278 project. 2009 to date
- Member, Ad-hoc Commitment to review Committees of the University. April 23 2009 to date
- Member, Change Coordination Committee. Responsible for overall coordination of project activities. 29 May 2009 to date.
- Member, central, undergraduate Admissions committee to select applicants 2008 to date
- Appointment as Dean Faculty of Renewable Natural Resources, CANR, 3 October, 2008 to date
- Member, FC/FFRT, CANR, KNUST Sawmill Sub- Committee. 2008 to date
- Chair, inception workshop on review of national biodiversity strategy and action plan project. Wednesday 6 May, 2009, Miklin Hotel, East Legon, Accra.
- Patron, agency for Health and Food Security. Ntonsu, Kwabre district, Ashanti Region. January , 2010
- Trustee, RAINFOREST FRIENDS, GHANA-RAFFS/G (affiliated to Forest Friends Ireland-FFI). RAFFS/G 2008 to date
- Chair, Seminar on Job opportunities for the natural resources personnel. RENARSA, FRNR, KNUST 4 Nov, 2009
- Member, serves on TROPENBOS International Ghana Bi-National Steering Committee. 2008 to date
- Served as Specialist on Interview pane for 9 job applicants. Wednesday, 24 February 2010
- Member, UNESCO-MAB Sub-Committee. 2009 to date
- Reviewer African Journal of Ecology. 28 May 2009 to date
- Examiner, School of graduate studies University of Cape –Coast. 2009 -2010

Mr. E. Danquah

- Feb 2010: Fauna Survey of Tarkwa Mine Concessions in Ghana. (Tarkwa Mines Project)
- July 2009 – Sep 2010: Status, Survey and Conservation of Chimpanzees and Endangered Primates in Western Ghana. (USF&WS / A Rocha Project _GA-0582).
- Sep 2009 – Nov 2009: Baseline Survey and Ethno-Biological Assessment of Zukpri Wildlife Sanctuary, Sureso-Pebase and Pusupu CREMAs in Ghana. (GEF-SGP/FC/A Rocha Project)

- Jun 2009 – Jun 2009: Fauna Survey of Oda River Forest Reserve, Ashanti Region, Ghana. (Ghana Millennium Villages Project).
- Apr 2009 – Jun 2009: Natural Resources Related Conflicts Study in the TBA Region (Ghana and Cote d'Ivoire). (CARE International TBA Project).
- *Mar 2009 – Jun 2009*: Monitoring Matters: Mammal Survey of the Ankasa and Bia Conservation Areas, Western Region, Ghana. (EU/WD PADP II Project)
- Apr 2009 – Apr 2009: Fauna Survey of Tano Nimiri, Boin Tano and Boin River Forest Reserves, Western Region, Ghana. (Samartex/Ghana Forest Certification Project).
- Feb 2009 – Mar 2009: Biodiversity Assessment and Mapping of Jema Assemkrom CREMA, Western Region, Ghana. (CARE International TBA Project).

Mr. Mac Elikem Nutsuakor

- June-August 2009, Towards a database of the terrestrial land snails of Ghana and Togo: Making land snails data available for ecological, conservation and applied studies.

ATTENDANCE AT SEMINARS/CONFERENCES/WORKSHOPS

Prof. S. K. Oppong

- Workshop on Sustainable Financing for Conservation and Protected Areas in Ghana, Ghana Protected Areas Development Programme, Phase 2, Forestry Commission Headquarters, Accra 6 May 2009.
- Understanding the implementation of the forest instrument in Ghana: Regional Sensitisation workshop for Western, Ashanti, Central and Brong Ahafo Regions, Wood Industry Training Centre, Ejisu, Ashanti Region 14th July 2009
- Consultation Workshop on National Strategy on climate Change Mitigation, EPA, Noda Hotel 16-19 August, 2009
- AWARD Mentoring Workshop, Indian Ocean Beach Hotel, Mombasa, Kenya, 21-25 September, 2009
- National Stakeholder Consultation Workshop on the Implementation of the Non-Legally Binding Instrument on all types of forests in Ghana. Mplaza Hotel, Roman Ridge, Accra, 3-4 November, 2009
- 3-Day Validation Workshop on Accra Plains Irrigation Feasibility Study and Detailed Design Reports, Ange Hotel, Accra, 11-13 November 2009
- AWARD/IFS Scientific Writing and Policy Development in Agricultural Research Course, 16-27 January, 2010, Maputo, Mozambique
- 15th Meeting of the Conference of the Parties of CITES, 13th -25th March, 2010, Doha, Qatar
- AWARD 2009 Fellows and Mentors West Africa Regional Progress Monitoring Meeting, 20-21 April, 2010, Novotel Hotel, Accra

Prof William Oduro

- Environmental and Natural Resources Annual Sector Review Workshop 11th to 14th August 2009. Holy Trinity Spa Hotel, Sogakope, Volta Region, Ghana.
- Stakeholder validation workshop on the ecological mapping of the Songor RAMSAR Site – UNESCO MAN & the Biosphere (MAB) National Committee. EPA Training school, Amasaman. 10 September 2009
- Expert meeting on assisted natural regeneration (ANR). Forestry Research Institute of Ghana. FORIG and FORM International, FORIG, Kumasi. 23 November 2009.
- Third Bi-national steering Committee Meeting. TROPENBOS International Ghana. Wednesday, 9 December, 2009. Forestry Commission, Accra, Ghana

- Convention on International Trade in Endangered Species of Wild Fauna and Flora. (CITES). *Strengthening CITES implementation capacity to ensure sustainable wildlife management and non-detrimental trade*. 19 – 21 January 2010 Imperial Royal Hotel, Kampala, Uganda.
- The African Academy of Sciences (AAS). The Forest Research African Network (AFORNET) Final Conference: 24 – 26 January 2010, ANITA Hotel, Kumasi
- The African Academy of Sciences (AAS). The Forest Research African Network (AFORNET) Final Conference: 15 - 16 February, 2010, Nairobi, Kenya.
- Project Directors/Coordinators meeting, 3 -5 February 2010 Ottawa, Canada

Mr. E. Danquah

- Society for Conservation Biology. 1st Africa Section Regional Meeting: From Conservation Science to Policy in Africa.” University of Ghana, Legon. January 28-30, 2009.

Mr. Louis Addae-Wireko

- NPT Training workshop. Applying INRM Principles in Learning Programmes on Innovative NRM Approaches. Kuntanase, Ashanti 6 to 10 July 2009
- NPT Training workshop on Monitoring and Evaluation. Santase, Kumasi 5 to 8 October 2009.

FACULTY OF FOREST RESOURCES TECHNOLOGY, KNUST, INTRODUCTION

This report covers the 2008/2009 Academic Year. The report looks at students’ in-take, visitors to the Faculty, income-generating activities and other interesting events.

The Faculty has teaching staff strength of twenty-five (25) made up of thirteen (13) full time and twelve (12) part time Lecturers. The teaching staff is supported by forty-seven (47) technical, administrative and ancillary staff.

ADMINISTRATION OF THE FACULTY

The Faculty is administered by the following:

Mr. L. B. Antwi	- Dean
Dr. D.E.K.A. Siaw	- Vice Dean
Mr. Anthony Adjapong	- Assistant Registrar
Mr. Paul Nana-Nketiah	- Accountant

ACADEMIC DEPARTMENTS

The Faculty continues to run four academic departments, namely,

- Social Forestry
- Wood Processing and Marketing
- Ecotourism and Forest recreation
- Land Reclamation and Rehabilitation

STUDENT IN-TAKE

During the period being reported on, one hundred and twenty-three students were admitted BSc. Level 100. One hundred and nine students, made up of ninety-six men and thirteen women, registered for the BSc. programme. In the Diploma class, the Faculty registered fourteen students, made up of thirteen men and one woman.

RESEARCH PROJECTS

APERL Project

The APERL project, which aims at intervening in poverty situations in rural communities using Agroforestry strategies in the vicinity of the Faculty continues to engage the attention of the Faculty. During the year under review, a livestock project was started with sixty-seven (67) beneficiaries undergoing a week-long training to equip them with skills to rear the animals at the Wenchi Farm Institute.

Malaspina Project

The Ghana-Canada Partnership for Environmental Education (formerly the Malaspina Project) is an environmental education programme aimed at educating people on waste management (plastic waste, in particular), wildfire management and ecotourism, as well as water disinfections.

RENOVATIONS

The former Leo Hall was renovated and converted into a block of offices for lecturers on the upper floor and seminar rooms on the ground floor. For now, there are twelve (12) offices that are allotted to lecturers.

ACCESS ROAD

An access road was constructed to link the academic area and the hostel to make for unhindered movement. With this done the Sunyani West District Assembly magnanimously provided lights for the street.

UNIFORM FOR SECURITY MEN

The security men for the Campus were provided with uniform for the first time during the period under review.

INTERNALLY GENERATED FUNDS

The Faculty generated income from its two-acre nursery that produced various tree seedlings for the CBRD and other NGOs on request.

MANGO PROJECT

The Faculty, in collaboration with Ministry of Food and Agriculture, started implementing a 3-year Village Mango Project in the three (3) Northern and the Brong-Ahafo Regions. The project is aimed at poverty alleviation through the use of improved mangoes. Over 10,000 improved mango seedlings have been planted so far.

VISITS TO THE FACULTY

During the year under review, the Faculty hosted the following dignitaries.

Name	Institution	Purpose of Visit
Prof. K.K. Adarkwa	KNUST	Matriculation
Rev. Theresah Barnie	Madonna H.S.S.	Excursion
Prof. E.A. Gyasi & Co.	Nat. Accrd. Board	Assessment for Accrd.
Mr. Alex Asiedu & Co.	MOESS	Official Visit
Electoral Team	KNUST	Election of Pro V-C
Prof. K.K. Adarkwa	KNUST	Official Visit
Bob Booth ICRA	NPT Meeting	
Nana Dr. S.E. Edusah	BIRD	NPT Meeting
Mr. K. Nyamekye-Marfo	Reg. Admin. B/A	SRC Week

Prof. R.C. Abaidoo	KNUST	Official Visit
Girls from Asutifi	Actionaid	Excursion
Prof. W.O. Ellis	KNUST	Official
Stephen Boakye	Kingdom Bookshop	To open a Branch
Mr. Kobby Yebo-Okrah	KNUST	Official Visit
H. Chris Gentrish	CorDatus Group	Facilities Assessment
John Bundy	CorDatus Group	Facilities Assessment

DEPARTMENT OF WOOD PROCESSING AND MARKETING

INTRODUCTION

The Department of Wood Processing and Marketing offers training and research into wood related issues. Their main aim is to provide skillful Wood Scientists and Wood Technologists so that they can contribute effectively to the National development. Thus, the Department prepares graduates to meet National demand for academic skills to effectively work in Timber Industries, Forest Institutions and Research Institutions. The current third year and forth year Wood Processing and Marketing option classes are six (6) and fourteen (14) in number respectively.

ON-GOING RESEARCH BY STAFF

Staff Research activities include the following:

Mrs. Sylvia Adu

- Economic utilization of wood residue and its effect on the Environment.
- Assessing the Traditional and Kiln method of charcoal production.

Mr. Osei-Owusu Antobre

- Assessing Chainsaw and Portable Sawmilling
- Lumber Recovery from a community-based processing mill

SERVICE TO COMMUNITY

- Visit to selected Timber Industries in the Brong Ahafo Region to educate workers on safety precautions
- Research into problems facing some Timber Industries in the Brong Ahafo Region by lecturers and supported by students of the Department.

DEPARTMENT OF SOCIAL FORESTRY

INTRODUCTION

The Department is one of the four academic Departments in the Faculty of Forest Resources Technology (FFRT), KNUST. It supports FFRT regarding the teaching of undergraduate courses in Soil Science, Introductory Ecology, Introduction to Agroforestry, Experimental Design, and Introduction to Agriculture.

The Department started in the 2007/2008 academic year and has attracted a considerable number of students in the Faculty. It currently has 65 students. Students go into departments at level 300. The Department also supports the Faculty in teaching courses in the area of Silviculture and Forest Management in the Diploma in Natural Resource Management programme.

ON-GOING RESEARCH BY STAFF

- Ecological studies of an Invasive exotic species *Broussonetia Papyrifera* in Ghana Forest

- Compatibility of *Jatropha curcas* in a hedgerow intercropping system
- Effect of diversity and spacing of Teak on agricultural crops
- Economic viability of free nurseries in the Sunyani municipality
- Conservation of Ghana's Natural Resources: Is it Economic Interventions or Equitable Institutional Authority Process?

WORKSHOPS AND CONFERENCES

L. B. Antwi

- 2nd World Congress of Agroforestry, 23-28th August, 2009, Nairobi, Kenya

Anthony A. Adomako (PhD)

- National Education Forum on Duration of Senior High School Programme – June, 2009.

Mr. Daniel Akoto Sarfo

- Six (6) months Training on Agroforestry Technologies, University of Guelph, Canada, February – August, 2008

Mr. A. B. Afrifa

- Workshop on Instructional Skills at the Vancouver Island University in Canada in September, 2009
- National Forestry Conference and Annual General Meeting of Canadian Institute of Forestry in Nanaimo, Canada from September 21 to 23, 2009 on the topic “Stewardship: Energizing Forestry through New Strategies and Partnership.”

MEMBERSHIP OF NATIONAL AND INTERNATIONAL ASSOCIATIONS

Dr. A. A. Adomako,

- Member, National Decentralization Technical Committee

SERVICE TO COMMUNITY

The Department continues to serve the 3 APERL communities, (namely Ayakomaso, Dumasua and Fiapre) to enhance their livelihood. Training and field visits by staff to these communities are carried out on regular basis. Mr. I. K. Abebrese continues to serve as Hall Master. Mr. A. B. Afrifa continues to serve as the Examination Officer and participated on Environmental programme in the area of fire prevention and control under the Ghana-Canada Partnership for Environmental Education Project.

COLLABORATION

The Department is currently collaborating with a number of organizations in the training of students. Our major collaboration is with Samartex at Samreboi where students spend a semester with the firm for their compulsory practical attachment.

DEPARTMENT OF LAND RECLAMATION AND REHABILITATION ON-GOING RESEARCH BY STAFF

Dr. D.E.K.A. Siaw

- Enhancing germination of indigenous forest tree species seed
- Effects of indigenous tree species on mine tailing dam soils.

Mr. Emmanuel Acquah

- Human-animal interface in National Parks, Mole

WORKSHOPS AND CONFERENCES**Dr. D.E.K.A. Siaw**

Resource Person: Training of Trainers' Workshop for the Rural Infrastructure Coordinating Unit (RICM) of the Ministry of Local Governments' Community-Based Rural Development Project Staff, March 29 to April, 3 2009.

SERVICE TO COMMUNITY**Dr. D.E.K.A. Siaw**

- National Treasurer, the Ghana Institute of Foresters
- Board Member, Vision 2050, a non-governmental organization which is executing a carbon credit project in Ghana.

DEPARTMENT OF ECOTOURISM AND FOREST RECREATION**ONGOING RESEARCH BY STAFF****Acquah, Emmanuel**

- Evaluation of the Minigu/Mognori Community Resource Management Area (CREMA) near Mole National Park.
- Assessing Human-Wildlife conflict at Larabunga and Mognori Community near Mole National Park, Ghana.

Siaw, D.E.K.A. and Obour, Richard

- Assessing the socio-economic impact of small ruminant livestock on three communities near the Sunyani Municipality

WORKSHOPS AND CONFERENCES**Mr. Emmanuel Acquah**

- Competency Based Education Training, Vancouver Island University, Vancouver, B.C. Canada in 2008 September 12 to October 8, 2009.
- *Resource Person* for the training of trainers' workshop for Rural Infrastructure Coordinating Unit (RICU) on behalf of the Ministry of Local Government, Community Based Rural Development Project CBRDP held at FFRT March 19 to April 3, 2009.

BUREAU OF INTEGRATED RURAL DEVELOPMENT (B. I. R. D.)**INTRODUCTION**

The Bureau has been busy in the 2009/2010 academic year. Our core business of research, consultancy, teaching and outreach all saw the injection of challenging but exciting activities. And despite our precarious staff strength and our limited logistics, the Bureau was able to meet all commitments to our clients on time and executed initiated programmes with success. The activities undertaken by the Bureau during the Academic Year have included the following broad areas: research, teaching/training, outreach and consultancy. Details of the activities are summarized below.

STAFF STRENGTH

The Bureau has a research staff strength of five (5) made up of three (3) Senior Research Fellows and two (2) Senior Research Assistants. The research staff is supported by three (3) technical/administrative, Two (2) junior staff and Five (5) National Service persons. Our limited research staff strength has been a major constraining factor in the expansion and development of the Bureau (see section 13 below).

RESEARCH

The departmental brainstorming session on every Tuesday of the week during which senior members and senior staff look at development problems of the country and discussed possible research interventions has continued. Although not as regular as in the previous years due to conflicting departmental obligations exacerbated by our reduced staff strength, the activity still serves as a useful platform for identifying and prioritizing research areas.

Within the reporting period, the department has prioritized socio-economic baseline studies in selected districts in the oil enclave of the coastal belt of the Western Region. This will be followed by an expanded research in Sustainable Natural Resources Management in the selected districts. Desk studies have already commenced on the socio-economic baseline studies and possible research collaborators have been identified.

Output of the Bureau's research on "Assessing the Effects and Impacts of Rural Development Policy Interventions: Development of Indicators", has once again attracted the attention of the Ministry of Local Government and Rural Development (MLGRD). The Ministry has asked its Rural Infrastructure Coordinating Unit (RICU), implementers of the Community Based Rural Development Project (CBRDP), to liaise with the Bureau in using the initial findings of the above-mentioned research, and the output from the Technical Workshop organised by the Bureau on "Redefining Rural Development: Concepts and Issues" as a basis for a collaborative assessment on how to revamp the Rural Development Department of MLGRD.

One of the spillovers from this collaborative assessment will be the support that BIRD will receive to continue its research on "Assessing the Effects and Impacts of Rural Development Policy Interventions: Development of Indicators". It is noteworthy that MLGRD supported the Bureau with about GH¢25,000 in November 2008 towards the research. Information reaching the Bureau indicates that a memo on the collaboration between BIRD and RICU has already been completed for the perusal of the National Coordinator of RICU/CBRDP. If all goes well the collaborative assessment will commence before the end of the second quarter of the year.

In spite of this new and exiting development, the Bureau intends to consider other options for funding the research including the use of internally generated funds. It is our hope that the research will culminate into a yearly publication to be entitled "The status of rural development in Ghana".

In the area of contract research, the Department, within the reporting period, has been engaged on two major assignments for Newmont Ghana Gold Limited (NGGL). The first, completed in December 2009 was on "Stakeholder Expectation Studies in the Newmont Ahafo Mine Area" and the second, which is nearing completion, is on "Quantitative Survey of the Resettlement Action Plan Completion Audit" The contract sums were GH¢47,000 and US\$81,000 respectively.

The Bureau is rapidly building a very good reputation for herself with NGGL, an international mining conglomerate in the area of research and development. NGGL has demonstrated its commitment to partner BIRD to work on research and development in the mining sector by

agreeing to grant BIRD permission and funding support to use materials from the outputs of the contract research to publish papers in reputable journals. This opportunity fits into the departmental research and publications agenda on “Changes in socio-economic environment of mining communities”.

Other contract research and development activities undertaken within the period were for the Root and Tuber Improvement and Marketing Programme (RTIMP) of the Ministry of Food and Agriculture (MoFA); a SWOT Analysis of Tailor-Made Root and Tuber Chain Linkage Activities and Training of Trainers (ToT) in Business Plan Development Training.

COMMUNITY SERVICE

BIRD undertook a capacity building training course in community Based Project Planning and Management in 2008 for Sustainable Development Committees (SDCs) of the Newmont Ahafo Development Foundation (NADeF). The specific tasks under the assignment were:

- Training the SDCs in community-based project planning;
- Equipping them with the skills required to write project proposals;
- Introducing SDCs to needs assessment, project budgeting, financing, resource mobilization and management;
- Preparing the SDCs for effective reporting and dissemination of project findings and best practices among themselves;
- Introducing the SDCs to basic monitoring skills;
- Guiding SDCs to adopt skills in basic stores management, records keeping and facility management;
- Introducing participants to the concept of Transparency and how to ensure its implementation;
- Introducing participants to the concept of Sustainable Development

In the last quarter of 2009, a refresher training programme on the above was executed for all the 10 participating communities upon request from NADeF. The Bureau has also been asked to develop two new modules (Economic Empowerment and Collaboration Amongst Contiguous Traditional Areas). Concept papers have already been submitted and approved. Each training programme will fetch the Department about GHC40, 000.

LOCAL AND INTERNATIONAL COLLABORATION

At the local level, BIRD is collaborating with the Ministry of Local Government and Rural Development in a research to establish indicators for tracking the effects and impacts of rural development interventions. This collaboration is an extension of earlier joint activities in workshops and political forum on rural development. As mentioned under section 3 MLGRD through its Rural Infrastructure and Coordinating Unit (RICU) has expressed interest in using relevant research outputs of BIRD as input in a process to redesign and strengthen the Rural development Department of the Ministry.

At the international level, BIRD is facilitating the link programme between KNUST and the University of Venda (UNIVEN). Following a visit paid to the KNUST by UNIVEN to renew a MoU on 21st September 2009, BIRD was tasked by the Vice Chancellor to lead the process to actualise the link. The Bureau has successfully facilitated a visit by a three-person delegation from KNUST to the University of Venda. The delegation comprised Professor R.C. Abaidoo [Provost, College of Agriculture and Natural Resources (CARN) and leader of delegation], Dr Paul Sarfo-Mensah (Director of BIRD) and Mrs. Ernestina Fredua Antoh (Senior Research Fellow of BIRD). The main objective of the visit, which was undertaken between 21st of Feb to 1st of March 2010,

was to follow-up on the processes of cementing the link between KNUST and UNIVEN. Specifically, the visit was used to develop a Memorandum of Agreement (MoA) between Bureau of Integrated Rural Development (BIRD) of KNUST and Center on Rural Development and Poverty Alleviation (CRDPA) of UNIVEN. Another important output of the visit was the development of an action plan for the link. BIRD sponsored the travel of her staff at a cost of about US\$4000 from internally generated funds.

TEACHING AND SUPERVISION OF THESIS

As part of her mandate, the Bureau provides teaching and supervision of student theses. Nana Dr. S.E Edusah lectures in Project Management at the Department of Geography and Rural Development at the Post Graduate level. The library/conference hall facility of BIRD is used to support the teaching and learning of the students. He serves as an external examiner to University of Cape Coast.

A Senior Member (Dr. Paul Sarfo-Mensah) has been supporting teaching and learning in CANR and other Colleges of the university. Staff provided supervision of both fieldwork and thesis writing of Masters and Undergraduate students in the following Faculties and Departments;

- Faculty of Renewable Natural Resources (FRNR)
- Department of Environmental Resources Management of the College of Engineering
- Department of Planning and Land Economy.
- Dr. Paul Sarfo-Mensah acted as Internal and External Examiners for Master's at KNUST at the Department of Material Engineering, School of Engineering. Currently he is a supervisor of two Masters students.
- Dr Nana Edusah continues to act as an External Examiner for the Institute of Development Studies (IDS), University of Cape Coast.

MODERATION OF QUESTIONS

A staff of the Bureau (Dr. Sarfo-Mensah) has in the last two years acted as external examiner for the Department of Renewable Natural Resources, Faculty of Agriculture, University of Development Studies. This has centered mainly on question moderation for the following courses RNR 310, RNR 312, RNR 311, RNR 410, RNR 412, RNR 413, RNR 409 and RNR 411.

PROJECT PROGRESS AND ACHIEVEMENTS

Nana Dr. S.E. Edusah, a core staff of BIRD has since the inception of the NUFFIC Project worked as the Main Coordinator and the Schedule Officer for the project. His commitment has made appreciable impact on the Project NPT/GHA/088 to the extent that among all the NUFFIC Projects being run by tertiary institutions in the country it is the only project that has been selected for a second phase (NPT 278) for another 4 year period. The funding support for the project is €1,600,000.00.

TECHNICAL REPORTS ISSUED

Technical reports issued by the Bureau include the following;

- Stakeholders Expectation Survey Report led by Ernestina Fredua Antoh
- Social Inclusion Transfers at the local level led by Paul Sarfo Mensah
- Training of Sustainable Development Committees from Ten Communities in the Newmont Ahafo Mine Area led by Paul Sarfo Mensah
- Baseline Survey for Volta Project–Plan Ghana led by Ernestina Fredua Antoh
- Identification and Management of Joint Development Areas between Contiguous Districts in Ashanti Region led by Paul Sarfo Mensah

INTERNATIONAL CONFERENCE(S) ATTENDED

Dr Paul Sarfo-Mensah attended an international conference titled 'Illegal or Incompatible? Managing the consequences of timber legality standards on local livelihoods Project Workshop in Ghana. The theme of the Workshop was: Social safeguards in the EU-Ghana VPA – jointly developing a research & development agenda for improved forest governance Date: 8th & 9th October 2009 Venue: Erata Hotel, Accra.

STAFF DEVELOPMENT

Two staff members are currently pursuing PhD programmes.

- Mrs. Ernestina Fredua Antoh is pursuing a four-year PhD sandwich programme in International Professional Doctorate in Education at the University of Sussex, Brighton, United Kingdom. She has successfully completed the first phase. She has submitted her Critical Analytical Study for the phase two and is awaiting assessment from the University of Sussex Graduate School.
- Mr. Sarpong is also pursuing a PhD with the topic 'Inter-sectoral Policy Learning for Natural Resource Management in the Forestry and oil sectors of Ghana: *What Role for Science?* The PhD programme is for a period of four years starting from January, 2010 to January, 2014 with the Forest and Nature Conservation Policy Group and the Communication and Innovation Studies group of the University of Wageningen, the Netherlands. It is NUFFIC-Funded Netherlands Programme for the Institutional Strengthening of Post-Secondary Education and training Capacity (NPT-278) Project at the College of Agriculture and Natural Resources (CANR) of the Kwame Nkrumah University of Science and Technology (KNUST).

LOGISTICS

Within the reporting period, the Bureau procured some critical logistics with internally generated funds. A Toyota 4x4 Hilux Pick-up vehicle was purchased at a cost of US\$32,000. Two other old departmental vehicles (a Peugeot Estate and a Nissan 4x4 Pick-up) were rehabilitated at an estimated cost of GH¢5,000. These vehicles were needed to support departmental activities especially on our expanded contract research programmes with NGGL. Two new Toshiba lap top computers, a Canon photocopier and a Scanner were also purchased.

CHALLENGES OF THE BUREAU

The major challenges of the Bureau are in the areas of staff strength and office space. The department presently has three senior members as against its establishment of six as at year 2000. Presently, the only female senior member is on a distant doctoral programme which takes her out of office for two months within each academic year. One of the remaining two senior members spends 80 percent of his time on the NUFFIC Project. This situation does not augur well for the development of the department and its contribution to the university and needs to be addressed urgently. The department has been allocated two places which are yet to be filled. The department has subsequently put up an advert for the recruitment of two senior members; a policy analyst and a development economist. It is our hope that the processes of recruitment will be given the due urgency.

The Bureau has been grappling with the problem office accommodation for several years. The problem is hampering expansion and development of the Bureau. Some senior staffs are paired up in their offices and some supporting staff including national service persons do not have offices. We have been compelled to use our library as temporal office space for our national service persons, a situation which does not arguer well for the effective use of the library for research.

PROJECTIONS FOR THE YEAR 2010/11

The Bureau has made tremendous efforts in establishing herself as a key Consultant of NGGL. We anticipate a very fruitful working relationship with the mining conglomerate in the coming year, especially as the company prepares to expand her activities to the Eastern Region of Ghana. We are very confident and convinced that all the training programmes and contract research the Department has executed for the company in the Ahafo Mine Area will be replicated in the Eastern Region.

The Bureau is currently working for the company in its Resettlement Action Plan Completion Audit (the Quantitative Survey), which has a budget of US\$83,000. There is a follow-up to Qualitative Survey which the Department will be asked to play a major role and we anticipate earning something in the range of the amount being paid for the Quantitative Survey. In addition, there are two other training programmes which will be executed for Newmont Ahafo Development Foundation (NADeF) and will earn the Department about GH¢80,000.

BIRD is also collaborating with an International Firm (based in the United States) to bid for the Mid-term Review of the MiDA Programme in Ghana. If the bid is won by the Firm, BIRD will play a major role in the review exercise with a bid budget of US\$198,000.

BIRD intends to plough back some of the earnings within the period to fund departmental research and publications activities. We intend, as indicated above, to undertake departmental research in selected districts in the oil rich enclave in the Coastal Belt of the Western Region. Retreats will be organised by the Department for Senior Members and Research Assistants to prepare draft journal articles for publication in reputable international refereed journals.

The Department will endeavour to move the Link between the KNUST and UNIVEN faster by facilitating the implementation of the action plan developed by BIRD and CRDPA during the former's visit to South Africa. As soon as the Draft MoA of the link is finalised and signed the Department will mobilize herself to operationalise her expected roles.

CONCLUSION

The department will very shortly put together a research strategy document to guide it to revamp her research activities. BIRD has continued to make major contribution to creating visibility for the university by the numerous linkages it has developed with clientele in various fields of development in the country through outreach, training and consultancy services. The Bureau has the potential to grow to become a major center of excellence in research and development

COLLEGE OF ARCHITECTURE AND PLANNING

The College of Architecture and Planning comprises two (2) teaching faculties and a research institute. The two teaching faculties and the research institute also have two departments and two centres respectively. These are:

Faculty of Architecture and Building Technology

Department of Architecture

Department of Building Technology

Faculty of Planning and Land Economy

Department of Planning

Department of Land Economy

Institute of Human Settlements Research

Centre for Land Studies

Centre for Settlements Studies

The College's vision is to promote excellence in the advancement of knowledge in the Built and Natural Environment. To achieve this vision, the College has provided the environment for teaching and training, research and service in Architecture, Planning, Building Technology and Land Economy for the creation of wealth and poverty reduction in Ghana.

All the teaching Departments in the College except the Department of Architecture run two undergraduate programmes. The Departments and the programmes they offer are as follows:

Department of Architecture

- BSc Architecture

Department of Building Technology

- BSc Building Technology
- BSc Quality Surveying and Construction Economics
- BSc Construction Technology and Management

Department of Planning

- BSc Development Planning
- BSc Human Settlement

Department of Land Economy

- BSc Land Economy
- BSc Real Estate

All the Departments run Postgraduate programmes and it is one of the leading Colleges in presenting Postgraduate students during congregations for the conferment of degrees. The College has Two thousand and Sixty-one (2061) Students during the 2009/2010 Academic Year, comprising of Two hundred and ninety one (291) postgraduate students and One thousand seven hundred and seventy (1770) undergraduate students.

ADMINISTRATION OF THE COLLEGE

The following constitutes the administrative personnel of the College:

Provost	Professor S. O. Asiamah
College Registrar	Mr. O. A. Debrah
College Finance Officer	Mr. George E. Asamoah
College Librarian	Mr. C. B. Adusei

ACTIVITIES

It was reported during the 43rd Congregation that the College was constructing a four-storey postgraduate block. The College has successfully completed the project solely funded from its internally generated funds (IGF). The Chancellor, Otumfo Osei Tutu II, commissioned the project on 10th February, 2010. The College is constructing an ultra modern toilet facility for the use of students. The project is being funded by the College of Architecture and Planning Students Society (CAPSS) and the College Administration, and is expected to be commissioned before the commencement of the 2010/2011 Academic Year.

The College in order to motivate its staff has provided a Common Room for Senior Members to interact after lectures. This avenue has provided the necessary forum for Senior Members to discuss matters of mutual interest for the advancement of the College. Coffee/Tea and snacks are served from 10am to 3pm each day except on weekends.

STAFF RECRUITMENT AND DEVELOPMENT

The College recommended three (3) lecturers for appointment to the Departments of Land Economy and Planning. The successful applicants are yet to assume duty. The College also through the University Appointments and Promotions Committee appointed a Senior lecturer on Sabbatical leave for the Department of Architecture.

LINKAGES WITH INDUSTRY

The College is in discussion with STX Ghana Limited, a South Korean Construction firm. The STX (Gh) Limited is engaged in a housing project with the Government of Ghana for the construction of two hundred thousand (200,000) units of houses in all the Regional capitals. The College expects to serve as consultants to the project.

DEPARTMENT OF ARCHITECTURE

AIMS AND OBJECTIVES

Responding effectively to the needs of society at large has always been the major aim of the Department, as such academic programmes are developed in making it a Centre of Excellence in architectural education, both in scholarship and professional practice.

The Department also through international accredited programmes, aims at providing quality and versatile training to students to become effective leaders and competent professionals with sound theoretical basis for higher academic pursuits.

ACTIVITIES

Teaching

The Department has two programmes at the undergraduate and graduate levels. At both levels, the studio programme (Architectural Design Studio) is the core around which the theory courses are structured and taught.

Inherent in the undergraduate programme is a well designed academic activity which gives a solid basis for a broad architectural education, producing architectural scholars and leaders in technical teams responsible for the development of the built environment. This is achieved through critical consideration of climate, culture and construction.

NEW PROGRAMMES AND COURSES

As stated in the last report, it is the intention of the Department to introduce new courses at both the undergraduate and graduate levels. At the undergraduate level, the Department is in consultation with the Departments of Horticulture (College of Agriculture and Renewable Natural Resources) and Painting (College of Arts and Social Sciences) to mount new programmes in Landscape Design and Interior Design respectively, very soon.

In addition to the two-year Post-Graduate Diploma in Architecture degree course, the Department has started a Master of Architecture (M. Arch) degree course of which the first seven (7) students graduated last November.

An MSc (Arch) programme for architects who have already completed the Post Graduate Diploma in Architecture degree course is also in the offing. (The draft document has been completed.) These new programmes are to help strengthen the theoretical and academic component of the graduate programmes in the Department and prepare graduates for the higher or and terminal degrees in the fields of architecture. They will further enable architects to specialize and focus on areas within the profession which would be beneficial to both the individual and society, in local and global contexts.

STUDENT POPULATION AND COMPOSITION

The Department presently has a student population of 500. Out of this there are 178 graduate students; 160 Post-graduate Diploma students, 4 MPhil students, and 14 MArch students. There is therefore a lecturer student ratio of 1:33.

RESEARCH ACTIVITIES

The Department continues with its rural survey in the second year and urban survey in the third year whilst the fifth year also studies the Central Business District (CBD) of Kumasi. The Department undertook a rural study on the impact of gold mining activities in New Abirem in the Eastern Region.

CONFERENCES/SEMINARS/WORKSHOPS

Members of staff continue to attend conferences and seminars both locally and internationally. The following senior members attended the following conferences and presented papers:

S.O.Afram

Conference: African Perspectives 2009, in Pretoria South Africa

Paper: "The woes of a Strait-Jacketed Central Business District: The Case Study of Odum, Kumasi"

Conference: The National Housing Conference in Accra, in 2009 organised by the BRRI, GIA and Ministry of Water Resources, Works and Housing.

Paper: "The Traditional Compound House- A Forgotten Resource for Home Ownership of the Urban Poor.

Amos-Abanyie

Conference: 6th International Symposium on Heating, Ventilation and Air-conditioning (ISHVAC 2009) Nanjing, China.

Paper: Amos-Abanyie, S., Akuffo, F.O., Kootin-Sanwu, V.; “Energy saving Potential of Passive and Low energy Cooling Techniques in Buildings in Ghana”.

Sam Sarkodie-Mensah

Workshop: Training Workshop in Building Construction and Environmental Management for Building Inspectors, KNUST, in July 2009.

A conference by the Society of Architectural Historians would be held in Chicago, USA between the 21st -25th of April 2010 and the one of our staff would attend to present a paper;

Prof G.W.K. Intsiful

Conference; Society of Architectural Historians Annual Meeting, Chicago, USA

Paper: “The Teaching and Making of African Architecture in Ghana”

COMMUNITY SERVICE/SERVICE TO SOCIETY

S.O.Afram was elected the Vice-President, Ghana Institute of Architects and is serving on the Council of the Institute (2009 to date).

Prof. G.W.K. Intsiful is serving as a member of the Architects Registration Council for a four year term (2009 to date)

Dr. Victor Kootin-Sanwu is serving on the Council of the Ghana Institute of Architects as the Representative of the Department of Architecture from 2009 to date.

Sam Sarkodie-Mensah provided landscape designs (Proposed) for the following projects;

- Liberian Institute of Public Administration Campus Project, Monrovia (2009)
- Liberia Camp Police Station, Budumburam, Ghana (2010)
- Ghana BNI Flats, Accra (2009)
- KNUST Teaching Hospital, Kumasi

He also undertook a Fauna and Vegetation Impact Studies for AngloGold Aduaprem Mines in Tarkwa, in February 2010.

Edward Botchway co-ordinated and help design the proposed KNUST Teaching Hospital. He also worked on the following projects:

Polyclinic Theatre Extension, Komfo Anokye Teaching Hospital (KATH)

- Design and Appraisal for the refurbishment of the TB and HIV Clinic, KATH.
- Design and Construction management scheme for the Administration, Residential and Teaching facilities for Garden City University, Kumasi.
- Project feasibility and design proposal for the construction of Eye Centre of Excellence and the Braky Therapy Unit, KATH.

G.F.A Olympio, was a consultant on conservation and enhancement of cultural heritage for a partnership initiated programme between the Reicerca e Cooperazione and the Ghana Monuments Board (GMMB) and funded by the Italian Government.

COLLABORATION

Trasacco Limited, a major construction firm in the country has expressed the desire to collaborate with the Department for their mutual benefit. They would from this year, select at least 5 students from the final undergraduate year, to work in their design offices and construction sites during the long vacation after which one would be selected for sponsorship in the post graduate years and employed permanently, if found suitable. This would help some of the students to get the practical experience needed. Some other construction firms are being contacted to admit students on their sites during vacations for the practical experience since the number of architectural firms are not enough for the number of students being trained.

The Dawson Family has also instituted two (2) annual awards for the Best Post-graduate student (M.Arch) and the Best Undergraduate Student BSc (Architecture). These awards were instituted to commemorate the centenary celebration of the late Architect D.W.K. Dawson, whose work included the Independence Arch at the Independence Square in Accra. The first awards were presented this February, the birth month of the Architect Dawson.

The Department has also strengthened its existing collaboration with the Ghana Institute of Architects by inviting six (6) of its members, including the President of the Institute and Arc Kpodotey, a 75year old architect with tremendous practical experience, to attend three different Interim Juries organized for the theses projects of the graduating Post-graduate year. They also gave seminars on some architectural buildings they have designed.

VISITATION

John Palmesino and Ann-Sofi Ronnskog, two renowned architects from the Architectural Association (AA) an architectural School in the United Kingdom visited the Department and gave a talk to the students on some of their works.

Architectural students from Ecole Africaine des Metier d'Architecture et d' Urbanisme (EAMAU) Lome, Togo numbering about 50, also visited the School and had interactions with our students in the design studios. An exhibition of students works were also mounted for their benefit.

LOCAL AND INTERNATIONAL LINKAGES

The Department has excellent links with the Architects Registration Council (ARC), the Ghana Institute of Architects (GIA) as well as the Commonwealth Architectural Association (CAA) which last year renewed the Department's accreditation for the next five (5) years, making the Department's BSc (Architecture) and the Post-graduate Diploma degrees equivalent to the Part II and Part II of the Associate of the Royal Institute of British Architects (ARIBA) respectively.

INTERNATIONAL AFFILIATIONS

Link/International Relations

KNUST/University of Michigan, USA Academic Link

This link has been in existence for over six years. Two batches of students numbering about 10 have paid academic visits to Michigan since the link was established. Several students from Michigan have also been to the Department to hold joint design charettes with our students as well. Plans are afoot to send another batch of students to Michigan and also work out a more elaborate academic programme to enable some of our students take elective courses there.

DEPARTMENT OF ARCHITECTURE/ IHS, ROTTERDAM RELATIONS

Institute of Housing and Urban Development Studies (IHS), Rotterdam, the Netherlands has also written to the Department to concretize and strengthen, the long standing but rather loose

relationship between it and the Department. This would translate into a research to be undertaken by the two in Ayigya, Kumasi in July this year, during the long vacation.

DEPARTMENT OF BUILDING TECHNOLOGY

INTRODUCTION

The Department of Building Technology is one of the two (2) teaching departments of the Faculty of Architecture and Building Technology in the College of Architecture and Planning in this University.

The Department, at the moment, is the only tertiary institution that turns out building technology university graduates in Ghana. The first B.Sc. degree in Building Technology was awarded in 1966. The products of the Department are employed in both public and private sectors of the construction industry as construction managers, site agents, construction cost estimators, and quantity surveyors. A sizeable number are also employed in the universities and polytechnics as lecturers and researchers.

STAFFING

Total staff strength of the Department is as follows: two (2) Assoc. Professors, five (5) Senior lecturers, seven (7) lecturers and three (3) part-time lecturers. Out of this, one senior lecturer is on Sabbatical leave and another on Study leave. Three additional lecturers were added to the Department in 2008/2009 academic year.

At the moment staff/student ratio stands at 1:32 as against 1:12 as required by the university. A number of service lecturers from other departments of the university provide assistance to the department in areas such as, Land surveying, Mathematics & Statistics, English, Operational Research and Financial Management.

STUDENTS

Population and Composition

The student population in the department stands at 434. Out of this number, 11 are MSc students and 3 PhD students. Three (3) PhD students who were on the VC's program have submitted their thesis and waiting for VIVA

Graduation

A total of 149 students at the undergraduate level were expected to graduate from the Department in 2008/2009 academic year. Three [3] students graduated in the First Class Division, seventy-four [74] in the Second Class Upper Division, forty-five [45] in the Second Class Lower Division, three [3] pass and twenty-three trailed various courses. Nine [9] MSc students graduated during the University's Special Congregation in November, 2009.

RESEARCH

Lecturers in the Department are undertaking research on various topics that address critical issues relating to the construction industry in Ghana. It is expected that publications emanating from these research efforts will contribute to knowledge and address critical issues relating to the construction industry in Ghana. The lecturers are also assisting undergraduate and graduate students in their research endeavours.

SERVICE TO COMMUNITY

During the period under review, the Department provided the following assistance to various organization in the following capacity:

- Cost consultants and quantity surveyors on projects such as rehabilitation of KNUST Teaching Hospital, Graduate Block for College of Architecture and Planning (KNUST), and Studio Block and Staff Offices for College of Architecture and Planning (KNUST).
- The Ghana Institution of Construction (GIOC) as National Council Members
- The Ghana Institution of Surveyors (GhIS) as National Council Member and Fellows
- Various Polytechnics as External Examiners/Reviewers, and moderators of Exams question
- West African Examination Council as examiners
- Chartered Institute of Construction (UK) as representative
- Two members were appointed as Fellows of GhIS
- Some members served on Board s of some Second Cycle Institutions
- A member served as chairperson for CSIR-FORIG's mid-year/ End of year reviews.

LOCAL/INTERNATIONAL LINKAGE

First phase of the upgrading of academic staff from Cape Coast and Sunyani Polytechnics at the BSc, MSc, and PhD levels has ended. Plans are underway to advance the program to its second phase.

VISITORS/SEMINARS

The Governing Council of the Ghana Institution of Surveyors (GhIS), paid a one-day working visit to the Department on November 13, 2009. Members interacted with staff and students.

INCOME GENERATION ACTIVITIES

The Carpentry and Joinery section of the Department continued to generate modest income for the Department. The unit is the main manufacturer of tables and chairs used for University Examinations.

The Department has been approved by the Ghana Institution of Surveyors as a quantity surveying practice office. Some of the projects handled so far by the Department include the Rehabilitation of the Elmina Castle, the Studio Block and Offices of the College of Architecture and Planning (CAP), KNUST Teaching Hospital, and Graduate Block for College of Architecture and Planning (KNUST).

NEW PROGRAMMES

The Department started two new programmes approved by the National Accreditation Board last academic year. The programmes are: BSc Construction Management and Technology and BSc Quantity Surveying and Construction Economics. The Department plans to introduce a sandwich programme in MSc. Construction Management to cater for people who cannot leave their jobs for full-time study. Also preparations are underway for BSc Procurement and Project Management and MSc Procurement Management to commence in the Department soon.

COMPUTER LAB

With assistance from the TALIF Project, the Department received a package of twenty (20) computers and accessories to set up a new computer laboratory. This will greatly enhance research activities and general Information Technology (IT) work in the Department.

FACULTY OF PLANNING AND LAND ECONOMY

INTRODUCTION

The Faculty of Planning and Land Economy comprises two departments, namely; Department of Planning and Department of Land Economy. The two departments offer both undergraduate and postgraduate programmes. These are professional programmes in the areas integrated development, land and property management and settlement planning. Both departments are also accredited by cognate professional bodies in Ghana, namely; Ghana Institute of Planners (GIP) and Ghana Institute of Surveyors (GhIS).

MANAGEMENT

The Faculty is under the management of the following key persons:

Prof. Sam Afrane	–	Dean
Dr. Yaw Nsiah-Peptra	–	Head, Department of Planning
Dr. John Bugri	–	Head, Department of Land Economy

ADMINISTRATIVE STAFF

The Dean is assisted by Ms. Charlotte Mensah, an Administrative Assistant and Mr. George Mallat Gyimah, a National Service personnel.

VISION AND GOALS

In 2007, the Faculty prepared a plan to steer its affairs as an infant faculty under the theme: “*Agenda for Growth and Identity*”. The vision of the Faculty as stated in the Plan is “to become a world class institution within the University at forefront of teaching and research in Development and Settlement Planning and land-related issues”.

Goals

The goals of the Faculty are as follows:

To create a faculty that has a unique image, character and spatial identity;

- To foster good academic and social relationship among staff and students of the two departments;
- To create a conducive environment for teaching and learning, knowledge sharing among staff and students of the two faculties;
- To improve the impact of the faculty on society and the built environment; and
- To expand the size of the faculty in terms of departments, programmes, staff and students numbers.

ACTIVITIES

Professional Lectures:

In keeping with our tradition of promoting knowledge sharing and learning from the practical experiences of the Alumni of the Faculty, two professional lectures were planned of the year under review, one for each semester.

Semester 1

Topic: “The Millennium Village Project: Review of Achievements and Challenges”

Speaker: Mr. K. Afram, Project Coordinator

Semester 2

Topic: “Customary Land Secretariat: The Way Forward”

Speaker: Mr. Mark Kakraba Ampeh

Unfortunately, due scheduling difficulties, this programme could not come off. It shall be re-scheduled for the next Semester.

EDUCATIONAL VISIT

This year, a new form of award was introduced for our best performing students. Instead of the investment coupons given to our best students last year, an educational visit was organized for them. A trip was organized for the four best students of each class in the Faculty to Goldfields in Tarkwa in the Western region. The purpose of the trip was to give the students the opportunity to learn about the Re-settlement schemes and land management issues resulting from the mining operations. In all, about 45 students and two staff were on this educational trip. The students were very satisfied with the trip.

RESEARCH

Research initiatives in the Faculty are on-going. It is our expectation that more funding will be secured to enable us implement these research projects.

Non-Profit Sector Research in Ghana

This is a joint research with the Urban and Regional Studies Institute of the Minnesota State University, Mankato. I am happy to report that the first draft has been completed and sent to our counterpart for his review and comments. We hope the final report will be completed soon.

Coping with Mining induced Change

The proposal has been submitted to Goldfields, Tarkwa for funding. Due our initial discussions with management, we expect the outcome to be positive. We are exploring the possibility of securing additional funding from the Ghana Chamber of Mines.

Poverty and Sustainability of Cocoa Farmers Income

Efforts are on-going to secure fund for this research from Cocoa Purchasing companies in Ghana.

In keeping with the joint-research policy of the Faculty, staff from both faculties will collaborate to carry out the research projects. This will not only promote cross-fertilisation of knowledge and expertise, but will also strengthen the bond between the two departments.

ESTABLISHMENT OF GEOGRAPHICAL INFORMATION SYSTEMS (GIS) LABORATORY PROJECT

The Faculty is working closely with the other two departments in the establishment of Geographical Information Systems (GIS) Laboratory for teaching and learning purposes. This is on cost-sharing basis through our internally generated funds. It is our expectation that additional external funds will be secured to enable us expand the laboratory in future. We are quite advanced with the procurement process. The laboratory will be located in the new Postgraduate Building of the College of Architecture and Planning.

COLLABORATIONS

Last year, we reported of an initiative to collaborate with the United Nations Development Programme (UNDP) and the World Bank in preparing a “State of Human of Settlement Report in Ghana”. We are happy to report that this initiative has been accepted and incorporated into an All Africa Project under the auspices of the African Cities Alliance based in Cape Town in South Africa. The Department of Planning will host the project in Ghana and coordinate the implementation with many other bodies in the country.

CONCLUSION

One of our dreams realised this year was the introduction of a new Programme in Real Estate by the Department of Land Economy. We congratulate the Head of Department and the staff for their dedication and commitment to this vision. In fact, we are determined to implement other projects outlined in our Plan and also contribute significantly to the growth process of the entire College of Architecture and Planning. Despite all the challenges, we are still hopeful that more can be achieved through hard work and greater commitment. The future is indeed bright.

DEPARTMENT OF PLANNING

INTRODUCTION

The Department of Planning is the only professionally recognised institutions by government in the country which trains skilled personnel to promote, coordinate and manage development at the national and sub-national levels. The philosophy of the Department of Planning is an 'integrated process of political, social, economic and spatial dimensions which affect the quality of life of all people'. The Department's approach in tracking development problems is therefore interdisciplinary, reflecting the multi-dimensional nature of development problems.

The Department's main mission is therefore to train skilled personnel required to formulate and manage various development policies and programmes at all levels of national development such as the National Vision on Socio-Economic Development which is required by the 1992 Constitution. The Department looks forward to a more dynamic future in which its activities – teaching, research and outreach programmes as well as community work – would become more directly relevant to the socio-economic and spatial development needs of Ghana, Africa and other developing economies.

STUDENT POPULATION

The Department of Planning has two undergraduate programmes, namely Human Settlement Planning (179 students) and Development Planning (360 students) which train undergraduate students. About 30 percent of the students are females; this emphasizes the promotion of gender education in planning in the Department. The Department also runs three taught post graduate programmes. These are Regular MSc Development Policy and Planning (46 students), Sandwich MSc Development Policy and Planning (54 students) that is organised during the holidays and MSc Development Planning and Management (SPRING; 31 Students). Research degrees are also organised for MPhil (7 students) and PhD (11 students). The total number of students in the Department stands at 688.

STAFF STRENGTH

The Department is staffed with 16 highly trained and experienced permanent faculty members with diverse academic backgrounds and research interests. These currently comprise one Associate Professor, three Senior Lecturers and fourteen Lecturers. During the year under review the Department lost one senior member. The Lecturer Student Ratio (STR) of the Department stands at 1:43 as against the average approved lecturer student ratio of 1:18. This implies that the staff in the Department of Planning is overloaded. We hope to recruit more qualified staff in the coming year to improve the STR.

One member of staff has been awarded a Commonwealth Scholarship and is therefore pursuing doctoral studies in the University of Sussex, England.

ACADEMIC PROGRAMMES

The Department, as indicated above, currently runs the following academic programmes:

- BSc (Four-year programme in Development Planning)
- BSc (Four-year programme in Human Settlement Planning)
- MSc (Two-year programme in Development Planning and Management – SPRING)
- MSc (Two-year programme in Development Policy and Planning on both Regular and Sandwich bases)
- MPhil in Planning and Development Studies
- PhD in Planning and Development Students

The BSc Human Settlement Planning Programme (HSP) which was introduced in the 2005/2006 academic year is making steady progress with student population standing at 179. The first batch of students on this programme numbering 48 graduated in June last year. To ensure that they are posted to the Town and Country Planning Officers in the country, the Department held discussions with the Head of Civil Service, the Chief Director of the Ministry of Local Government and Rural Development, the Director of the newly established Local Government Service and the Director of Town and Country Planning in Accra to impress upon them to facilitate the posting of the students to the Town and Country Planning Department for their National Service and their subsequent retention in the Town and Country Planning Offices as permanent staff in spite of the freeze on employment.

During the 2005/2006 academic year the Department designed and introduced a “Sandwich” postgraduate programme in Development Policy and Planning for the training of graduate students who cannot leave their workplace to come to the University as full-time students. This has increased the number of postgraduate students in the Development Policy and Planning Programme by almost 100 percent. The “Sandwich” programme is one of the effective ways of promoting self-financing postgraduate education in the Department of Planning, as all the students are fee-paying.

COLLABORATION

During the year under review the Department of Planning signed collaborative agreements with other institutions and organisations. The Department:

- Started a Faculty Exchange arrangement with Minnesota State University, Mankato for the 2008/2009 academic year;
- Is collaborating with the Community Water and Sanitation Agency (CWSA) to build capacity of people in 85 communities in four administrative regions in the country in community water and Sanitation Planning; and
- In partnership with the National Population Council and United Nations Fund for population activities has prepared a training manual captioned “Integration of Population Variables into Development Planning”. This is been published by the UNFPA and has become one of the United Nations training manuals for world-wide capacity building.

CONCLUSION

We are happy to note that the Department of Planning inspite of all its challenges is making every effort to fulfil its mission to train skilled personnel required to formulate and manage various development policies and programmes at all levels of national development. With the full introduction of the BSc Human Settlement Planning Programme that has heeded the national call to train professionals to staff the nation’s ailing Town and Country Planning Department to help plan and manage our cities and towns.

Again with the mounting of our Sandwich MSc programme in Development Policy and Planning that is in its third year the Department is giving the opportunity to high level managers who are unable to leave their work places and attend full time courses, to upgrade themselves and be more relevant to the socio-economic development of the country.

It is our hope that it would be possible for us to do more, in spite of the challenges facing the Department, especially in terms of high calibre personnel to help in the socio-economic development of Ghana.

DEPARTMENT OF LAND ECONOMY INTRODUCTION

The Department of Land Economy is the foremost training place for land professionals in the country. It has since its establishment in the 1966/67 academic year been awarding the BSc Land Economy degree to deserving students. However, in line with current market demand, a new BSc Real Estate degree was introduced during the year under review to reflect the changing dynamics of the real estate sector of the economy. Also available is postgraduate training for the award of MPhil in Land Management and doctoral study on land related problems. The diversity of programmes is aimed at equipping the Department, its faculty and students, with the tools to identify and find solutions to land problems facing the Government of Ghana through its land sector agencies, traditional land owners and their land governing institutions and individual land investors in the private sector. Thus, the Department is a source of knowledge and information on land resource ownership, use, development and management; to which access may be had by all stakeholders in the land sector of the country and beyond.

RESEARCH ACTIVITIES

The Department is in discussions with the Millennium Development Authority (MiDA) for the provision of training in the areas of land tenure, land law, land administration and client service to improve staff performance of the reformed Lands Commission as a means towards achieving the objectives of the current reforms in the country's land administration system. Similarly, a study on vested lands country-wide commenced last year and is on-going. The findings of this study are intended for the formulation of a national policy on vesting and de-vesting of land. In general, the scope of research activities undertaken includes:

- Land resource management
- Land administration
- Land valuation
- Land taxation
- Land tenure land registration
- Land use and allocation
- Environmental management
- Real estate development and finance; and
- Sustainable development

In the light of the above departmental research activities, individuals and groups have continued to undertake research as follows:

Dr. J. T. Bugri

On-going Research

- The role of social capital in land acquisition and development in Ghana.

- Patriarchy, social capital and the development of women's land rights in Northern Ghana.
- Environmental degradation, food insecurity and the emergence of environmental refugees in North-East Ghana.

SERVICE TO THE COMMUNITY

The Department's staff provided services to the community in diverse ways during the year under review.

Individually, staff continued to be of service to the local, national and international communities in many ways. **Dr. John Bugri** was appointed to serve on the Regional Lands Commission of Brong Ahafo and the Board of Graduate School of KNUST as a representative of the Ghana Institution of Surveyors and College of Architecture and planning respectively.. He also continued to serve as the representative of the College of Architecture and Planning on the Students' Financial Services Management Board, representative of the Department on the Valuation and Estate Surveying Division and Governing Council of the Ghana Institution of Surveyors and member of the Land Sector Technical Committee (LSTC) of the Ghana Land Administration Project. **Dr. Daniel Hammond** continued his role as external examiner to the Estate Management Department of the Kumasi Polytechnic, while **Mr. Anthony Gambah** serves on the Academic Board. **Mr Mark Adolwine** became the Faculty Examinations Officer. In the case of **Mr. Eric Tudzi**, training of student leaders and provision of career guidance and counselling to students through GHAFES and membership of KNUST Alumni Association at the executive level engaged his attention. **Mr. Jonathan Ayitey** was appointed College Examinations Officer and continued as member of the Senior Members Housing Committee, representative of College of Architecture and Planning on College of Science Board, Fellow of University Hall, member of the Property and Legal Committee of Watchtower Bible and Tract society, Ghana and also became the Examinations Officer, College of Architecture and Planning. **Mr. James Frimpong-Asante** continues to provide free consultancy services to the Kings Village Project, a complex of a malnutrition centre, hospital and schools for the deprived at Bontanga in the Tolon-Kumbungu district of the Northern Region.

INSTITUTE OF HUMAN SETTLEMENTS RESEARCH INTRODUCTION

As a result of the restructuring of the Kwame Nkrumah University of Science and Technology, Kumasi into six compact Colleges in 2005, the Institute of Human Settlements Research amongst other Faculties came into existence. It is a research faculty within the College of Architecture and Planning. It comprises two Departmental components; the Centre for Human Settlements Studies (CSS) and the Centre for Land Studies (CLS).

FUNCTIONS

The Institute of Human Settlements Research conducts research into human settlement planning, integrated development and management issues. Its work centres on land, housing, the environment, gender, governance, poverty, livelihood studies and development planning issues. It focuses on development-oriented research and service to the community through demonstration units and problem solving consultancy services. It seeks to devise affordable and ameliorative interventions targeted at the needs of the urban and rural poor in developing countries.

NEW DIMENSION

In a recent appraisal of its staff resources and functional potential, the Institute of Human Settlements Research intends to take the opportunities available to it to expand the scope of its brief to include some amount of postgraduate training. Plans are advanced in devising postgraduate

training work in the context of an MPhil Degree in Housing Studies and an MPhil in Urban Management Studies to complement the research and development activities of the Institute. These programmes would even also serve as meaningful conduit for the dissemination of the knowledge and research skills available within it.

CENTRE FOR SETTLEMENT STUDIES

BRIEF HISTORY

In 1957, a United Nations technical assistance team who reported on housing to the Government of Ghana recommended the establishment of an independent centre for research and development in housing, planning and building in the country. A subsequent team, invited by the Council of the Kumasi College of Technology (now Kwame Nkrumah University of Science and Technology, Kumasi) to advise on architectural education, supported the United Nations team's recommendation and further suggested the Centre's intimate functional association with the Department of Architecture of the University. On the basis of these recommendations, the Centre was established in 1959 as the Building Research Group. In 1963, it was made a Department of the Faculty of Architecture which was later named as the Faculty of Environmental and Development Studies, and the name Department of Housing and Planning Research (DHPR) was adopted. During the restructuring of the Departments and Faculties of the University in 2005 to operate a collegiate system, the Department was renamed the Centre for Settlements Studies (CSS).

MANDATE

The Centre for Settlement Studies is mandated to conduct research into the human settlements and planning issues generally and to devise interventions targeted primarily towards addressing the socio-economic and housing needs of the rural and urban poor. To achieve this goal, the Centre focuses on development oriented research leading to the formulation of policy guidelines, extension services to the community through demonstration units, and problem-solving consultancy.

Over the last decade, the Centre broadened its focus beyond housing to include policy- oriented research on issues of the other aspects of human settlements in line with the policy document of the government, the Ghana Poverty Reduction Strategy (GPRS) and the Millennium Development Goals of the UN. The Centre studies issues related to the human environment with the primary objective of designing interventions for reducing poverty generally. In brief, the Centre currently concerns itself with issues and problems of the human habitat, including population and employment, urbanization, housing, vulnerability, gender, poverty, infrastructure and service, land use planning and physical development, governance and decentralization, and settlements management.

The Centre also provides outreach programmes for the development and management of settlements and services for capacity building of relevant institutions. It collaborates with both local and international universities and research institutions. The Centre is also involved in postgraduate teaching and research through collaboration with the Faculty of Planning and Land Economy in the College of Architecture and Planning of KNUST.

The Centre has 26 supporting staff comprising stores superintendent, administrative personnel, technicians, artisans and labourers. The Carpentry and its allied workshops play a pivotal role in the University as a whole and especially to some Faculties and Departments in some Colleges such as the Colleges of Agriculture and Natural Resources, Art and Social Sciences, Engineering and Architecture and Planning in taking students through basic machine practices. Students are also

directed by their various Heads of Department to the workshop to be directed on related issues concerning their project works

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RESEARCH PROGRAMMES

The current research programmes of the centre fall within the following broad themes

- Housing Policy and Practice;
- Community-based Organisations in Development;
- Urbanization, Urban Management and Development Planning;
- Social Policy and Practice;
- Development of Alternative Materials, Tools and Techniques;
- Decentralisation, Good Governance and Poverty Mapping;
- District Resources Data Base and Development Studies;
- Gender Issues Analysis and Mainstreaming
- Project Planning, Management and Evaluation.

ON-GOING RESEARCH ACTIVITIES

The current research activities of the Centre and the research staff are as follows:

TALIF Project: Housing Data Management Unit

With a project grant of US\$10,856 received from the Teaching and Learning Innovation Fund (TALIF), the Centre has enhanced its capacity to support postgraduate studies in housing and human settlements. In place now at the Centre is a refurbished office space with three high capacity computers and accessories and a photocopy machine.

Basic human settlement and housing data from both published and unpublished documents and field surveys have been extracted and stored in the projects computers procured. The entire housing data from the entire 2000 National Population Housing Census – settlement by settlement, region by region, urban and rural – are stored in the project's computers. The data assembled already provides post-graduate students, lecturers and research fellows working in the field with materials to use in their programmes.

The Impact of Road Construction On Livelihood and Settlements

The Centre undertook a research entitled “The Impact of Road Construction on the Livelihoods of Street Vendors” started in the year 2007 and completed in January 2009. Most of the research staff in the Centre were engaged in it. The research was carried out along two major road construction sites on the Accra- Kumasi Road and Kumasi –Offinso Road. The Centre collaborated with the Ghana Highway Authority in the implementation of this project.

The Socio-Economic Viability of the Proposed Bui City: Prospects and Challenges in the Twenty First Century

The Centre has just begun a new research work on the above and it is at the preparatory stages on the Proposed Bui City in the Bui Dam area.

MPHIL PROGRAMME IN URBAN STUDIES AND MANAGEMENT

The Centre has completed and submitted proposals for the above programme and intends running it during the 2010/2011 academic year.

CONTEMPORARY ISSUES IN RESEARCH METHODOLOGY AND THE USE OF FACTOR ANALYSIS IN SOCIAL SCIENCE AND MANAGEMENT RESEARCH.

During the year 2009, the Centre successfully run these two(2) short courses for lecturers, researchers, postgraduate students and staff of other tertiary and research institutions.

BUILDING CONSTRUCTION REGULATIONS AND ENVIRONMENTAL MANAGEMENT

The Centre also successfully organised a training workshop in Building Construction Regulations and Environmental Management for Building Inspectors and Construction Technician Engineers of the various Metropolitan, Municipal and District Assemblies nation-wide.

In addition to the above, the individual staff are working on the following:

Prof. S.E Owusu

- Urban Rental Housing
- Housing Development and Poverty
- Gender Issues in Governance at the Local Level

Dr. Romanus D. Dinye

- Building Settlement Communities for Urban Low Income Families through Micro financing in Ghana

Dr. Rudith S. King

- Women in Construction Industry Labour Market in Ghana
- The Impact of Chinese Goods on the Local Economy

Mr. Joseph Edusei

- Evaluation of Community Participation in Rural Development Project.
- Effects of Urbanisation on Small Communities in and around the Kumasi Metropolis

Dr. Divine K. Ahadzie

- Evaluation of the Performance, Reliability and Durability of Tek-Blocks
- Innovations in Sandcrete Block Technology

Mr Paul K.B Asamoah

- Uncontrolled Development in Urban Ghana.
- The Role of Rural Banks in the Disbursement of Poverty Reduction Funds in Ghana.
- Assessing the Effects of Forest Conservation on Communities in Conserved Areas in Ghana.

Mr. Henry Kwaku Boafo

- Promoting Standardization of Building Components as Means of Minimizing Waste and Ensuring a High Level of Efficiency in the Building Industry in Ghana.

The following are the projects for which the Centre is expecting funding:

- **Co-operatives Project:** - The Ashanti Regional Office of the Department of Co-operatives is collaborating with the Centre to prepare a proposal and identify sponsors for its implementation.
- **Amalgamated Bank and CSS Lecture Series:** - The Head of CSS is negotiating with one of the newly opened Banks in the country to sponsor a series of lectures in “Sanitation in Kumasi and the Urban Environment”. The Bank has requested a proposal from the Centre which is currently being prepared.

TEACHING ACTIVITIES

The Research Fellows of the Centre for Settlements Studies participate in the teaching programmes (including students’ supervision) of the Department of Planning, Architecture, Building Technology and Land Economy of the College of Architecture and Planning and some Departments in the College of Art and Social Sciences, KNUST, Kumasi.

OUTREACH AND DISSEMINATION ACTIVITIES

Since the 1960’s, this Centre has been involved in rural housing development through the construction of demonstration houses, participation in resettlement programmes, and advice and supervision of individual house construction activities. The Rural Housing Demonstration Project was initiated in 1971 with a Government grant through the Ministry of Water Resources, Works and Housing. Through this project, various demonstrations housing designs were developed on which the stabilized soil-cement and the “atakpame” types of construction were applied. In the 1990’s, this project took the form of rural housing rehabilitation with funding from the former Bank for Housing and Constructing (BHC) through the Ministry of Water Resources, Works and Housing.

The Centre has continued the community-based outreach programmes and technical assistance to communities. The current one is the Village of Dompase Education Project which wants the Centre to help them establish a Library at the village spearheaded by a USA based native of the village.

Kwahu Praso Maternity Clinic Project

The Centre supervised the construction work for the Kwahu Praso Maternity Clinic initiated by the University of Dortmund, Germany. The Phase 1 of this project has been completed, and the community is preparing for the Phase 2 involving the building of Doctor’s bungalows and other facilities to receive visiting medical students and Professors/Lecturers. The clinic is currently part of the Presbyterian Church of Ghana health facilities and has been placed within the Agogo Health system. Under the current management, the Centre for Settlements Studies advises on aspects of the Phase 2 of the project and appropriate fees are paid for such services.

INCOME GENERATING ACTIVITIES

The Centre has made significant gains in this area. The Production Units of the Centre (i.e. the Carpentry, Welding and Block Moulding Workshops) produces door and window components and furniture for sale to the public and on order from the various units on campus. These activities generate income for the Centre and publicise the improved components that have been developed at the Centre.

CENTRE FOR LAND STUDIES

The Centre for Land Studies, formally earlier and later on known as the Land Administration Research Centre (LARC) and Land Resources Centre (LARC) respectively, is one of the constituents of the Institute of Human Settlements Research. The institute is one of the three Faculties of the College of Architecture and Planning of the Kwame Nkrumah University of Science and Technology; Kumasi, Ghana.

FUNCTIONS

The functions of the Centre of Land Studies are primarily in the realm of land administration, land management and development. The pertinent focal areas of its current research activities are in:

- Land Tenure and Policy Studies;
- Land Law and the Environment;
- Land use Planning and Management; and
- Urban Land Economics, Development Appraisal and Valuation.

RESEARCH SERVICES

Since its establishment in 1971, the Centre has been providing direct research services to the Government of Ghana through the Ministry of Lands and Forestry in particular as well as other Ministries and Departments. Traditional Authorities, Non-Governmental Organisations, International Agencies and other Universities outside Ghana have also benefited from the Services of the Centre.

SPECIFIC ACHIEVEMENTS

Land Title Registration in Ghana

The Centre initiated and developed a concerted and systematic research effort towards the introduction of land title registration in Ghana. It created the awareness of the essence of title registration as a means of securing valid title to land, guarantees to ownership boundaries and the elimination of unnecessary land litigation problems. The positive effects of these are being felt by the government, chiefs and the public.

Land Tenure Reforms

Through its systematic research and dissemination of information, the Centre has been able to diffuse the fact that the country's indigenous land tenure arrangements have certain positive ingredients which need to be preserved much as they form part and parcel of the total socio-cultural heritage of Ghanaians. As a result land nationalization, which hitherto has been a thorny and rather politically sensitive issue, is found not to be in the best interest of Ghana.

Land Desertification

In collaboration with the Council for Scientific and Industrial Research (CSIR) and the United States Agency of International Development (USAID), the Centre conducted a research project in North-Eastern Ghana. As a result of appropriate policy recommendations submitted to Government, a national awareness of the need to halt the invasion of the Sahara Desert into Northern Ghana has been created. Tacit efforts are being initiated by some United Nations Agencies and Government agencies towards protecting and conserving the Northern Savannah ecological zone and preventing the advancement of the deserts southwards.

Land Policy

Research of immense policy value and practical application carried out by the Centre are in the area of Housing and Urban Land Studies, Rural Development, Land Taxation, Review of Land Laws and

Land Use Studies. The Centre is one of the focus points of the Land Administration Project (LAP) of the Ministry of Lands and Forestry which is currently implementing the land reforms policies in the country.

RESEARCH

During the period under review the Centre conducted two research projects.

- **Ascertainment of Customary Law Project**

The purpose of the project is to identify and review available literature and secondary material on Customary Law on Land in Ghana. It has been commissioned by the National House of Chiefs/Land Reform Commission and funded by the GTZ.

- **Divested Lands in Northern Ghana**

In collaboration with the Department of Land Economy, the Centre has undertaken research on the nature and effects of the divested lands in the three northern regions of Ghana. The project has been funded by the Ministry of Lands and Forestry.

TEACHING

The Research Fellows of the Centre for Land Studies participate in the teaching programmes (including students' supervision) of the Department of Land Economy of College of Architecture and Planning, Medical School (Dept. of Community Health) and Biological Science (Environmental Sciences).

NEEDS ASSESSMENT

Human Resource development, recapitalization and office accommodation remain the most pressing problems of the Centre.

COLLEGE OF ART AND SOCIAL SCIENCES

INTRODUCTION

The College which is constituted by five academic faculties, viz. Social Sciences, Industrial Art, Law, Fine Art and School of Business, and a Research Center, the Center for Cultural and African Studies runs twenty-one departments and services to the entire University. The understanding is that a Science and Technology University needs a significant dose of the humanities and social sciences to prepare graduands for the world of work. This rationale drives the growth of the liberal arts programmes. Over the years, the College has turned out thousands of graduates some of whom now occupy very sensitive positions in the banking, commercial, industrial, planning, legal, economic and other sensitive sectors of the economy. Notable among these, of which we are proud of, is Mr Kofi Annan who passed through the walls of the social sciences.

In the course of the year, significant achievements have been made in areas of research and publications, industrial and professional linkages, capacity building, infrastructure development, teaching methods, income generation, expansion of library facilities, student organization, sports and games, exhibitions, participation in local and international conferences etc.

The forum created presentation of research findings, the Intra-College Seminars, is yielding results. There is a healthy competition among the faculties for slots for the presentation of seminars. The College is in the process of publishing the revised seminar papers. Besides, some authors have managed to refine some for publication in peer-reviewed journals. In course of the year over 35 papers were published in peer-reviewed journals of significant impact factor. A significant development in preparing an enabling environment and motivation for publication was the launch of the maiden College Journal, CASS Journal of Art and Humanities (JAH), which, the reviewer commends as one of the best in the country. Structures are being put in place to ensure its sustainability.

The College continued with its remarkable performance of establishing linkages with industrial and professional organizations locally and internationally. Memoranda of Understanding were established by the University through the instrumentality of the College with Gerrit Rietveld Academie, The Netherlands; Georgia Southwestern State University, USA; and Bergische Universitaet Wuppertal, Germany. Locally, MoUs were signed with EPP Books and Services and Ghana Trades Union Congress and Development Dimensions Limited.. Arrangements are far advanced for the signing of MoUs with Bowie and Howard Universities, both in the United States. The Provost's visit to the Georgia Southwestern State University with the Head of Department of Industrial Art created a historical edifice when the former President of the United States, Mr. Jimmy Carter sought audience with them to discuss certain health issues about Ghana.

There has been an improvement in capacity building to ensure efficient and effective rendering of academic services. Three lecturers and three PhD candidates on the Vice-Chancellor's Initiative successfully completed their PhD programmes. The School of Business is partially assisting three lecturers of the School to pursue their PhD programmes in institutions in Europe. Hopefully, they shall graduate in 2013. Akershus University College in Norway with which we collaborate, has, for the third year running, offered scholarship to an undergraduate in Integrated Rural Art and Industry to pursue a Masters' programme in Product Design. It is hoped that by 2014 when the College Strategic Plan would be ending, over 50% of academic staff would have had their PhDs.

Several staff members received awards, the most coveted being the Silver Award of the Ghana Academy of Arts and Sciences received by Dr. Kari'kacha seid'ou, a lecturer in the Department of

Painting and Sculpture. His Doctor of Philosophy Thesis entitled “Theoretical Foundations of the KNUST Painting Programme: A Philosophical Inquiry and its Contextual Relevance in Ghanaian Culture” won the 2008 Academy Silver Award in Humanities. The College has already awarded him for the honour.

The College faces a serious problem in infrastructure development. It has not been benefitting from GETFund allocation for a long time. It has had to use its scarce Internally Generated Funds (IGF) to provide some very modest infrastructure, especially, for the two Faculties of Art to ensure survival of the programmes being run. In course of the year, two projects, Textiles Workshop and a 50-seating capacity classroom for the Department of General Art Studies, were commissioned. The School of Business is pre-financing the GETFund classroom-staff offices project. The School has, to date, spent over one million Ghana Cedis (GH¢1,000,000.00) on the project. The facility is partially being used by the School which is in the process of starting the construction of a Lecture Theatre.

Faculty members made strides in improvement in pedagogy. Most members prepared modules on various courses for students. Students were guided to search for information through rigorous library search instead of the normal spoon-feeding of dictating lecture notes. The use of power-point in teaching has been adopted by some Departments. Arrangements are in place to ensure that all teaching are done through power-point presentation. Academic authorities were engaged by some Departments to moderate their curricula.

Income generation received a boost in course of the year, with over Two Million, Seven Hundred Thousand Ghana Cedis (GH¢2,700,000.00) realized from Production Units and non-traditional sources. The highest donation was made by the Export Development and Investment Fund (IDIF) which offered the College a grant of Two Hundred and Twenty-Five Thousand Ghana Cedis (GH¢225,000.00) to support the KNUST Jewellery Design and Technology Center which is a joint venture between the University and Development Dimensions Limited to train students at the Metals Section in Jewellery Design.

The College libraries experienced a quantum leap in increase in book stock and e-Library services. The stock of books increased from 19,598 to 25,583 this year, an increase of 30.5%. Various Faculty libraries have been provided with computers with Internet services to facilitate easy access to information. Book donations came from three sources:

- Books and journals worth Eight Thousand Dollars (US\$8,000.00) were posthumously donated by late Professor Konadu Agyemang of the University of Akron;
- A total of over Fifty Thousand Dollars (US\$50,000.00) worth of books were donated by Ghana Institute of Legal Studies, Canadian lawyers abroad, Sheikh Osamanu Sharbutu (Chief Imam), Readwide Ghana and Professor Mary James Mossman;
- Over Five Thousand Dollars (US\$5,000.00) worth of books were donated by Professor Yaw Debrah, moderator and external examiner of the School of Business.

In course of the year under review, the Rand Refinery Limited of South Africa donated a quantity of silver worth Nine Thousand, Five Hundred Dollars (US\$9,500.00) for use at the Metals Section to support teaching and learning.

The student body was well organized. The CASS Students’ Council was positioned to deliver services to advance the course and welfare of students. Problems associated with the organisation of the students’ movement were ironed out and unity was achieved. The unity among the movement

resulted in a successful organization of various programmes including sports and games in which the College emerged winners in several disciplines. The institution of the “Provost Cup” for the Faculties in the College to compete for, strengthened the fraternity within the students’ movement.

The Faculties of Art mounted several exhibitions to showcase their talents. The Packaging Section of the Department of Communications Design received bravura exposure in the media with the presence of the Deputy Minister of Trade and Industries who was impressed by the products of the Section. The year also saw over twenty conference papers presented at international conferences, with some papers receiving awards. Details are indicated in the Departmental Reports.

The College, nonetheless, faces excruciating problems including inadequate infrastructure, unbearable student-staff ratio (with inadequate lecturers), and a snail-pace professional advancement of academic staff. The provision of spacious laboratories, studios, workshops and lecture halls, staff offices and common rooms, and for the staff to be motivated to pursue PhD programmes and publish to guarantee their professional advancement would put the College on a higher pinnacle of recognition.

FACULTY OF INDUSTRIAL ART INTRODUCTION

The Faculty of Industrial Art continues to explore creative ways to achieve excellence in its core business of teaching, research and service. Some of the major activities within the year under review are outlined in the report.

Faculty members continue to render service both to the community and the nation as outlined in the various Departmental reports.

ADMINISTRATION

Dean	Mrs. Vesta E. Adu-Gyamfi
Vice Dean	Mr. J. K. Nsiah, Head, Department of Industrial Art
Principal Administrative Assistant	Mrs. Victoria Anyan

ACADEMIC PROGRAMMES

The Faculty offers a four year undergraduate programmes leading into the award of:

- Bachelor of Art in Industrial Art
- Bachelor of Art in Rural Art and Industry
- Bachelor of Art in Publishing Studies

In addition to the BA programmes, the Faculty runs MFA and MA programmes in the Departments of Industrial Art and Publishing Studies respectively.

STUDENT POPULATION

The total undergraduate student population of the Faculty stands at 1,738. The distribution is as follows:

• Department of Industrial Art	-	567
• Department of Integrated Rural Art and Industry	-	600
• Department of Publishing Studies	-	571

Graduate student population stand at 45.

- Department of Industrial Art - 25
- Department of Publishing Studies - 20

COLLABORATIONS

The Faculty enjoys fruitful collaborative relationships with the following institutions:

- Akershus University College, Norway
- Geneseo-Suny University, USA
- Pennstate University, USA
- Development Dimensions Ltd (DDL), Accra
- Ghana Tourist Board

DEPARTMENT OF INDUSTRIAL ART

INTRODUCTION

The Department of Industrial Art is made up of three sections, namely: Ceramics, Textiles and Metals. The sections are responsible for the training and production of high-level manpower in their respective disciplines for the Ghanaian economy.

The mission of the Department is to produce properly trained graduates with the requisite knowledge and skills for today's technology-based industries. The Department is committed to providing the best possible conditions for research, study, practice and teaching of design, Art and technology as related to the applied Arts. Upon entering the Department, students begin exploring the process by which design, art and technology impact on the individual and the community.

The Department is staffed by men and women who are committed to guiding students towards personal and professional excellence. Alumni of the Department are successfully engaged in industry, commerce and teaching.

Student population keeps increasing while facilities remain obsolete and inadequate. The Department currently has a population of five hundred and seventy-six (576) students and the breakdown is as follows:

	Textiles	Metals	Ceramics	
First Year (Foundation)				140
Second Year	74	27	29	130
Third Year	61	54	35	150
Fourth Year	57	51	23	131
	192	132	87	551
Post graduate MFA	14	3	8	25
Total				576

In line with current national policy and the recommendation of stakeholders, the Department is in the process of broadening its focus to include not only quality training and development of students but also graduates who are computer literate. To this end the Department is establishing a computer laboratory.

PROGRAMMES

The Department of Industrial Art offers a four-year undergraduate programme leading to the Bachelor of Art in Industrial Art in Ceramics, Textiles and Metals options. The first year is a common foundation course intended to provide students with specific basic skills required for Industrial Art disciplines.

The Department intends to broaden its programmes to include undergraduate/post graduate degree courses leading to BSc Ceramic Technology, BSc Textiles Technology and B. Tech. Clothing and Fashion. The Department runs postgraduate courses in Ceramics, Textiles and Metals Product Design.

A linkage has been formalised by the Department for Textiles Section and the Ghana Textiles Printing Company Limited. This will lead to the establishment of a chair of Textiles Section at GTP which will foster interrelationships in areas of academic development, industrial research, staff and students academic benefits.

STAFF ACTIVITIES

J. K. Nsiah, Lecturer/Head of Department

Service to Community

KNUST

- Vice-Dean, Faculty of Industrial Art. - 2009-2010
- Head of Department of Industrial Art - 2008-2010
- Member. Academic Board.
- Member – CASS board - 2008
- Member – Faculty of Industrial Art Board - 2008
- Co-ordinator MFA programme for Ceramics - 2008 - 2010

National

- Continuation of the GETFund project on the construction of incinerators for 24 Girls Senior Secondary Schools in Ghana.
- Adansi Oil Mills, Dompooasi, Ashanti Region. Oil Processing Company.
a. Report on Industrial Accident. b. Fabrication and replacement of the “first pass” (drum) of the accident steam boiler. – February 2009.
- Naja David Bondplex, Kumasi. Ashanti Region (Timber Industry) a. Report on Accident Steam Boiler No. 2. b. Redesigning, fabrication and re-installment of pre-heater system to replace accident unit - 2008, 2009, 2010.
- Ayum Forest Products Company Mim, Brong Ahafo Region. (Timber Industry)
a. Project on steam recovery. May 2008. b. Redesigning, fabrication and re-installment of pre-heater unit to replace worn and blocked unit: 20 bar pressure on boiler No. 2. - 2008, 2009, 2010
- J.C.M. Takoradi. Western Region (Timber Industry) Rehabilitation of Wulf Steam boiler – Refractories and pipework. May 2008, 2009, 2010
- Coppon Wood Process Company, Akim Oda., Eastern Region (Timber Industry) Preventive maintenance on the Refractories – December 2006/2007/2008.
- Ahanta West District Assembly – Construction of a Truck-loader combustible waste ‘Nsiah Incinerator’ Agona Nkwanta. W/R
- Josma Agro Industry – Mampong Ashanti- Agro Dryer for Gari Presessing Plant.
- L.L.L. Kumasi – Rehabilitation of Pelucci Steam Boiler, 2008, 2009, 2010
- Norpalm Oil Plantation – Takoradi – Changing of the refractories of the Steam Boiler

- Oti Yaboah Complex, Sunyani – Rehabilitation of Super Hot Water Industrial Boiler
- Consultant for C and M clay products Ltd. Sunyani Tanoso.2009-2010

International

Delta Timber Industries (D.T.I.) Burutu, Delta State. Nigeria.

Completion of services on re-installation and conversion of a 5 ton (2,800 K. cal.) liquid fuelled steam boiler to solid fuel, inclusion of designing and construction of a suitable furnace system with pre-heater. Filter unit for the products of combustion was designed, fabricated and installed for the avoidance of toxic and hydrocarbon emissions of trioxins, benzene, furans, dioxins etc. (environmental cleanliness) -2008, 2009, 2010.

SEMINARS/CONFERENCES

Presented a paper on uses of Clay products for the construction industry in Ghana – Emphasis on Bricks and Tiles. at the Brong-Ahafo Regional Residency – Sunyani, March, 2010.

Presented a paper on “How to be Self Employed After University Education” to 4th year Ceramic students at the Ceramic Section, Industrial Art Department.

Presented a paper on “Education and Wealth Creation” at a seminar organized by the National Service Scheme, Ashanti Region for National Service personnel within the Kumasi Metro during National Service Week Celebration at the Kumasi Polytechnic Auditorium on July, 2009.

RESEARCH ACTIVITIES

- The Effects of Boiler “Pre-heaters” and “Super-heaters” for Hot Water, Super Hot Water, Steam and Super-steam generation for industrial processes. – On-going.
- The study of fire grate system for thermal plants.-(On-going)
- Designing and construction of incinerators fitted with high pressure carbon – steel pipes for Hot water and steam generation. – On-going.
- Conversion of oil fuelled industrial boiler to solid fuel, A case study of Delta Timber industries, Burutu, Delta state, Nigeria.

BOOKS

- Basic Book on Refractories – receiving editorial attention.
- Education and Wealth Creation – co-authors: Joe Nsiah and Patrick Fares, MD. Fares Group of Companies, Ghana and U.S.A. – receiving editorial attention.
- Boilers, Kilns and Incinerators – on – going.

Albert B. Essuman, Lecturer

Service to Community

KNUST

- Departmental Examinations Officer - 2010
- Sectional Coordinator, Ceramics Section -2008-2010
- Member – Faculty of Industrial Art Board
- Co-ordinator MFA programme for Cceramics-2009 to 2010

Research Activities

- Clays Bodies as an Alternative to Wood in Furniture Production- on going.
- Effects of Ageing on Plasticity-on going
- Local Raw Materials for the production of Kiln Furniture-on going.

Peggy A. Fenning, Lecturer

Research Activities

- Modernism and Adinkra Symbolism in Jewellery Making on-going.
- Contribution of Jewellery in the Development of Ghana on-going.

Hughes Ofori Dompheh, Lecturer

Service to the Community

- College Examinations Officer (CASS). 2009-2010
- Coordinator - Metal Product Design Section 2008 -2010
- Member, Committee of Investigation Into circumstances leading to the alleged Refusal to register a student for an Academic Semester. 2008

Research Activities

- Research and Development of a Multi-Sectional Wax Extruder for the Local Gold-Smithing and Brass Casting Industry (on-going)
- Research into the Improvement of Jewellery quality with Computer-Aided Designs (on-going)

Mr. Kofi A. Asomaning, Lecturer

Seminars/Conferences

Presented a Paper on ‘The Importance and the Role of the Technician in a Technological University - With Emphasis on the College of Art and Social Sciences, on February 2009 at Anita Hotel. Ejisu.

Research

- Evaluation of Metal-Filled Plastic Resin as Material for Jewellery Embossing Mould (on-going).
- Adaptation of Drag Polishing Technique to Jewellery Workshop Situation (on-going).

Emmanuel Y. Ansah, Lecturer

Service to Community

- Member. Faculty Board.
- Developing a new lectern for the President’s office (Republic of Ghana)

Research

Industrial Design and Export Promotion in Ghana. (On-Going).

Esther V. Ulzen – Appiah (Mrs.), Senior Lecturer

Service to Community

National

- External Examiner, Department of African Studies, Legon. 2008.
- External Examiner / Moderator Kumasi Polytechnic – Fashion & Textile Department.
- Consultant – KAS Fashion Enterprise, Kumasi. 2008
- Consultant – Style Hunt – Ghana Annual Programme aimed at developing Young Fashion and Textile Designers.
- Member – Chartered Institute of Marketing – Ghana
- Member- Ghana Institute of Management International
- Member – Soroptimist International Association – Ghana (Association of Professional Women)

Awards

- Received the Provost (CASS) Award for Dedicated Service – 2010
- Received Citation from Textile Students Association – 2009-2010 for commitment to duty.

Research

- Resist Dyed And Printed Pieces, (on-going)
- Cushis Syndrome-Related Effects on the Figure and Clothing, – on-going.

Books

- Chemical Processing Resist Dyed and Printed Pieces – Quality State of the Art 2010
- Patterns for Clothing Design - 2009

E. Kofi Asante, Lecturer**Research**

The Use of Akuaba a Decorative Medium for Traditional African Ceramics Art. (On-going).

Service to Community**External**

- Faculty Member, Ghana Study Abroad Program. University of Georgia, Athens, Georgia, USA.
- Board Member, Association for the Advancement of African Literacy Art and Development Inc. Naples Florida 34110, Usa.2008 – 2009.

Exhibition

- National Museum of African Art.
- Smithsonian Institute, Washington D.C. 20560.USA.

Kofi Boateng, Senior Lecturer**Service to Community**

UniversityTutor, Unity Hall, 2008, 2009, 2010.

National

Assisting Prospective Ceramic Artists in my Ceramic Studio, 2009, 2010.

Research Activities

- Examination of Clays for both White Ware and Refractory Production (On-Going).
- Research into Forsterite and Cordierite Bodies for Refractory Production (On-Going).

J. M. Halm, Senior Lecturer**Service to Community**

- Designing and Production of the Presidential Seat for the Republic of Togo K.A. Sarpong and J.M. Halm.
- Peoples Warden: Thomas Cranmer Anglican Church, KNUST, Kumasi.

Books

- Jewellery Making for Senior High Schools, J. M. Halm and K. A. Sarpong.
- Metal Bead Production for Jewellery Students. J. M. Halm.

Kwabena K. Sarpong, Lecturer**Service to Community**

- Designing and production of the Presidential Seat for the Republic of Togo K.A. Sarpong and J.M. Halm.
- Bee Keeping Training for Adagya and Addwan in Ashanti Region.
- National, International: Upgrading Gold and Silver Smiting In Kumasi Area of Ashanti Region.

The Idea is to make people aware of the use of waste vegetable matter in The Production of manure thereby helping to dispose of waste that would otherwise pollute the environment.

Client: Charlottefields Company Limited, New Jersey and Kumasi.
The Production of the State Silver Stool (On-Going).

Services/Conference/Workshops

Clean Soldering Practices for Gold and Silver Smiths in Kumasi. Granulation as a Design and Silver Smith Work for Kumasi Gold and Silver Smiths. Workshops together With J.M. Halm and K.A. Sarpong. Elder, Ashanti Region: Voluntary Work Camps Association of Ghana.

Research Activities: The Role of Art in Industrialization.
Research for KNUST Inter-Collegiate Seminar, March 2009

Book

Jewellery making for senior high school, K.A. Sarpong and J.M. Halm- on going.

James K. Amoah, Senior Lecturer**Research Activities**

- Innovations in Ceramic Finishing (on- Going)

Exhibition

Participated in Group Exhibition at the Artist Alliance Gallery – Accra – 2008

Charles Adu-Boachie, Technical Instructor**Research Activities**

- Design and Production of a Simple Die-Forming Press for the Ghanaian Metalsmith (on-Going)
- Application of Granulation and Filigree in Metal Sculpture (on- Going)
- Design of a Chain of Office for the Chancellor of KNUST

Gladys Dankyi Sarpong, Lecturer**Research Activities**

- Meeting the Challenges of the Competitive Fashion Market - International Journal for Home Economics Research (on- Going)
- Enriching the skills and knowledge of Designing and Construction of Garments, Effect of Globalization on the Ghanaian Clothing and Textiles Industry (on- Going)

DEPARTMENT OF INTEGRATED RURAL ART AND INDUSTRY

INTRODUCTION

The year under review saw the Integrated Rural Art and Industry making giant strides in its effort to reach out to the industries and practitioners in the art and crafts. The Department has continued to take the largest number of students in the Faculty, and is running a part-time programme as well as the proficiency courses in all disciplines efforts are far advanced to begin a graduate programme next academic year

TEACHING

The student population keeps growing making the ratio of lecturers to students even worse. We now have seven hundred (700) students. This has called for new and innovative ways of teaching large classes. This notwithstanding three of our academic staff are pursuing PhD in this University and three of them are still handling these large numbers. Many a time the students have to be regrouped for the studio practice since the studio spaces cannot accommodate large numbers of students.

EDUCATIONAL VISITS

Several Senior Secondary Schools and some Junior Secondary Schools visited the Department to acquaint themselves with the realities of the programme in order to boost their study and understanding in the Visual Arts for the Senior Secondary School programme.

ACTIVITIES

Besides the lectures and studio practices, supervision of projects and thesis, Integrated Rural Art and Industry undertakes field trips and industrial attachment throughout the country in all the ten regions. Efforts are being made to introduce the Postgraduate programme next academic year.

Seven students from Kumasi Polytechnic were hosted for 6 weeks on practical attachment in various form of weaving.

FINASA procured and fitted three (3) Air Conditioners for our computer Lab. They also provided tables and chairs.

RESEARCH

- The Department has made a big leap in an attempt to produce paper from our local Bamboo.
- The Department participated in TRATECH exhibition.
- An innovative carport has been built by students as part of their project work.
- A sulfur fumigation tank for Rattan Bamboo and Wood.

WORKSHOPS ATTENDED/CONFERENCE/PRESENTATIONS

H. A. Quaye and K. A. Baah, "Traditional Ghanaian Art and Craft. Orientation Lecture for Lehigh University in Bethlehem, Pennsylvania, Global Citizenship Students. 5th January 2009. Engineering Guest House, Kumasi.

F. Ampah Clement, "Financial Planning – Financing Investment Decisions" Resource Person: Mr. Francis Kusi (Ghana Export Promotion Council). February 26, 2009.

F. Ampah Clement, "Advocacy seminar on the KNUST Institutional Repository (KNUST Space)" organized by the KNUST Library, Faculty of Law Auditorium, KNUST, Kumasi Ghana, March 25, 2009.

Dr. Steiner, Management and Processing of Local Raw Material (Training Workshop for Local Craft Men Bolgatanga. February 2009.

Dr. Steiner, Design & Standards. Rattan Skills Training Workshop for Master Rattan Artisans/Processors (INBAR) May 2009

Mr. A.E. Asmah, Good Finishing, Packaging & Marketing workshop organized by Ashanti Craftsmen Association in Collaboration with (Cultural Initiatives Support Programme) (C.I.S.P.) ATC

H.A. Quaye and K.A. Baah, Traditional Ghanaian Art and Craft Orientation Lecture for Lehigh University in Bethlehem, Pennsylvania, Global Citizenship Students. 5th January 2009. Engineering Guest House, Kumasi.

F.Ampah Clement, “Financial Planning – Financing Investment Decision” Resource Person: Mr. Francis Kusi (Ghana Export Promotion Council) February 26, 2009

Vesta E. Adu-Gyamfi (Mrs) – Main Speaker - “New Face for the African girls” organized by African Anglican Girls and Women at Christian Service University College, Kumasi, 11th – 16th August, 2009.

Lead Consultant: Dr. Osei Bobie Boahin, Emmanuel Tabi-Agyei; Managing Basic Problems Affecting the Quality of Indigenous, CISP – Training Workshop for Art and Craft, Marigold Hotel – Kumasi, Ashanti Region 27th - 30th September, 2009

Vesta E. Adu-Gyamfi (Mrs) – Participated in the training programme for women in Governor organized by Hedge, Ghana, under the auspices of Department of Women, Regional Secretariat at Miklin Hotel, Kumasi, 2nd October, 2009.

Vesta E. Adu-Gyamfi (Mrs) – Moderator – Regional Consultation forum on decentralization in Ghana at Golden Tulip, Kumasi, 12th November, 2009.

Lead Consultant: Dr. Osei Bobie Boahin – CISP – Training Workshop for Art and Craft practitioners – Bolgatanga, 7th -12th November, 2009

Vesta E. Adu-Gyamfi (Mrs) – Evaluation for cultural initiative support project under the auspices of National Commission for culture, Ministry of Finance and European Union – December 2009.

The Department of Integrated Rural Art and Industry is making gigantic strides in actualizing its vision, mission, and it is hoped that with commitment hard work and sacrifices the ultimate goal shall be realized.

DEPARTMENT OF PUBLISHING STUDIES

The Department of Publishing Studies established in 1984 with UNESCO assistance is the first of its kind in West Africa and one of the few in Africa. Our programmes of study and extra curricular activities give students the opportunity to develop skills and creativity that a modern work place

needs. This include our Industrial Attachment Programme organized by the Department for every third year student during the second semester which ensures effective practical skill acquisition.

The Department also focuses on imparting a high sense of moral uprightness into students through a strong student –lecturer relationship and efficient monitoring and evaluation system. Alongside developing subject specifications, the student will acquires other skills like teamwork, problem solving and communication, all valuable for the student’s future profession and personal life.

The Department has so far produced from 1987-2009 about 1,326 graduates with a current student population of 591.

MISSION

We educate men and women to be entrepreneurial leaders in a rapidly changing world of Publishing and Print Media. We prepare them to identify opportunities and initiate actions that result in genuine accomplishment. Our innovative curriculum challenges students to think creatively and across disciplinary boundaries.

VISION

To be the best Publishing and Print Media institution in Africa where men and women are trained to be innovative, entrepreneurial and dynamic leaders in a rapidly changing world.

PROGRAMMES

BA Publishing Studies

The Department runs a 4-year degree programme in publishing with students specializing in:

- Publishing Administration
- Printing Technology
- Book Design and Illustration

Two-Year MA in Publishing Studies

A 12 month Post-graduate Diploma programme.

Short courses are available for industry players in various areas of the Book Industry based on a thorough needs assessment.

Plans are underway to establish an African Centre for the Study of Online Publishing in our Department. It is in line with this that a paper “ESTABLISHING AN ONLINE SCHOLARLY TRAINING CENTER AT KNUST” was presented by Mrs. Lucy Ry-Kottoh and Mr. Eric Anane-Antwi in July 2009 at the 2nd PKP International Conference on Scholarly Publishing, Vancouver, Canada to set the foundation. The centre will be a collaboration between:

- The Public Knowledge Project of the University of British Columbia, Canada
- International Network for the Availability of Scientific Publication (INASP,UK)
- Other International Publishing Studies Programmes.

Plans are underway to start our MA Publishing Programme by Distance Learning next academic year.

The Department participated in the 8th Ghana International Book Fair in November, 2009. Papers were presented at a symposium under the theme:

“NEW RECIPES TO SPICE UP THE GHANAIAAN PUBLISHING INDUSTRY”.Speakers were:
Mrs. Lucy Ry-Kottoh - “Is Vanity Publishing the Easy Way Out?”

Mrs. Aba Brew-Hammond - “Sources of Materials for Children’s Stories”

Mr. Reuben Glover- “The Functional and Aesthetic Features of Illustrations in Children’s books”.

Mr. Nicholas Kingsley Graham-“Quality: A Key Determinant in Print Buying”.

Mr. Duke Peprah Mensah-“The Ghanaian Author: A Walking, Talking Promotional Tool”.

A Pilot programme with the German Embassy: A Pilot programme on the study of the German Language as a result of our relationship with the German Embassy has successfully ended with twenty (20) students and a Lecturer completing a hundred (100) hour language proficiency course.

VISITS

We were honoured by a visit from the German Ambassador and spouse Dr. Marius Haas. The visit was to strengthen the existing healthy relationship between the Department and German institutions. As part of the visit he sat in the pilot German language proficiency course organized at the Department with German sponsorship.

SPONSORSHIP

The University of Wuppertal, Germany granted two scholarships to (Victor Acquah Djan and Esther Prempeh) to undertake a four month pre-masters programme in Germany. When successful they will be given 2-year scholarship to pursue Masters in Printmedia in the same University.

STAFF ACTIVITIES

Lucy Ry-Kottoh (Mrs.), Lecturer, Head

Conferences

“The Viability of an Online Scholarly Publishing Centre for Africa at KNUST” Ry-Kottoh, L. and Anane-Antwi, E. at the 2nd PKP International Conference on Scholarly Publishing, Simon Fraser University, Harbour Centre, Vancouver, British Columbia, Canada. July 8 – July 10, 2009.

Symposium

Ry-Kottoh, L. “Is Vanity Publishing the Easy Way Out?”. New Recipes to Spice Up the Publishing Industry in Ghana, The 8th Ghana International Book Fair, Accra, Ghana 4th – 8th April 2009.

Ongoing Research

Employee Loyalty in Press Houses in Kumasi.

Aba Brew-Hammond (Mrs), Lecturer

Conference

Opoku-Amankwa, K. and Brew-Hammond, A Literacy is ability to Speak and write English. Defining and Developing Literacy in Basic Schools in Ghana. The 6th Pan-African All Readers Conference. Dar es Salaam, Tanzania. August 7th-11th 2009.

Symposium

Brew-Hammond, A. “New Sources of Materials for Children’s Stories in Ghana”. “New Recipes To Spice Up The Publishing Industry in Ghana” at the Ghana International Book Fair, Accra, Ghana. November 4th- 8th 2009.

Opoku-Amankwa, K. and Brew-Hammond, A. (2010) Literacy is the Ability to speak and write English. Defining and Developing Literacy in Basic Schools in Ghana. *International Journal of Bilingual Education and Bilingualism*.*(Accepted for Publication)

Kwasi Opoku- Amankwa (PhD), Lecturer

Articles published in Refereed Journals

Opoku-Amankwa K. (2009a) “Teacher Only Calls Her Pets”: Teacher’s Selective Attention and the Invisible Life of a Diverse Classroom in Ghana. *Language and Education* 23(3) 249-262

Opoku-Amankwa K (2009b) English-only Language-in-Education Policy in multilingual classrooms in Ghana. *Language Culture and Curriculum* 22(2) 121-135

Opoku-Amankwa K (forthcoming 2010) What Happens to Textbooks in the Classrooms? Pupils Access to Literacy in Urban Primary Schools in Ghana., *Pedagogy, Culture and Society*.

Ngwaru, J.M. & Opoku-Amankwah, K (2010, Forthcoming) Home and School Literacy Practices: Listening to inner voices. *Language and Education* (Special issue on literacy practices in Africa).

Opoku-Amankwa, K & Brew-Hammond, A (2010, Forthcoming) “Literacy is the ability to read and write English” Defining and developing literacy in basic schools in Ghana. *International Journal of Bilingual Education and Bilingualism*.

Conference Papers/Attendance

“Literacy is the ability to read and write English” Defining and developing literacy in basic schools in Ghana. Paper co-presented (Kwasi Opoku-Amankwa & Aba Brew-Hammond) at the 6th Pan-African Reading for All Conference. 10th - 14th August, 2009. University of Dar es Salaam, Tanzania.

Discussions at a round table conference to evaluate the “Stories Across Africa” Project. National Center for Language and Literacy, University of Reading, UK. 23rd-27th March, 2009.

Textbooks and school achievements: Contesting the traditional paradigm.

Paper delivered at the 21st Intra College Seminar, CASS, 18th March, 2009.

RalphNyadu-Addo, Lecturer

Conferences Attended

March 2010: Attended the first GERMAN-AFRICAN ECONOMIC FORUM in Dortmund (March 2to March 3, 2010) as a panel member.

Other Services

- Continued as Industrial and Professional Relations Officer of CASS and assisted the Provost to tour industrial concerns and raised income for the College.
- Served as International Relations Officer of the Department of Publishing Studies. Linked Department to several institutions and companies abroad.
- Served as Chairman of the KNUST-NBSSI Business Incubator Project.
- Appointed College of Art and Social Sciences’ representative on KNUST Academic Board
- Served as Publications Consultant for “KNUST Health News” and “Ashanti NSS Newsletter”

- Successfully organized the 6th Entrepreneurship and Small Business Graduation of the Department of Publishing Studies.
- Toured several universities and institutions in Germany with Vice Chancellor in November 2009.
- Part of high level KNUST delegation that visited German Ambassador, HFC Bank Management etc. to discuss development cooperation.
- Tasked by KNUST to help develop a Business Development Centre for the University.
- Arranged for German government sponsorship for German language proficiency course at the Department of Publishing Studies for staff and students.
- Successfully organized an interactive and informative meeting for all German Alumni and Associates in Kumasi in collaboration with the German Deputy Head of Mission on Thursday, December, 2009 at the KNUST.
- Member: The Small Enterprise Promotion Network (SEPneT, Worldwide)
- Member: KAAD Scholars in West Africa (KASWA)

Research Activities (On-going)

- A critical look at the apprenticeship system in the Printing Industry in Ghana.
- Alternative funding for University Education in KNUST

FACULTY OF FINE ART DEPARTMENT OF GENERAL ART STUDIES INTRODUCTION

The Department was formerly known as the Art Education Department and has been in existence since the Teacher Training Department of Achimota College (the beginning of University of Ghana, Legon). It was transferred from Achimota College to form the nucleus of the Kumasi College of Technology in 1952. Beginning as the foundation of the College of Art, University of Science and Technology, it offered Art Teachers a Diploma course that prepared them to teach Art in Middle and Secondary Schools, and Teacher Training Colleges in Ghana. In 1968, the Department began offering a Postgraduate Diploma in Art Education Programme to graduates of the College of Art to enable them teach Textiles, Painting, Graphic Design, Ceramics, Sculpture and Metals in Secondary Schools and Teacher Training Colleges. In 1986, the Department introduced the Master of Arts degree programme in Art Education.

Following the adoption of the Collegiate System of Administration and subsequent restructuring of KNUST into Colleges in 2004, the African Art Section of the Department of Design and General Art Studies was merged with the Department of Art Education. The new Department was named Department of General Art Studies. The Department consists of two sections: Art Education and African Art. It offers only postgraduate programmes at MA, MPhil and PhD levels.

The Art Education Section prepares Bachelor of Arts Degree holders in the Visual Arts, including Textiles, Painting, Sculpture, Publishing Studies and Communication Design, for the teaching positions in Secondary Schools, Colleges of Education, Polytechnics and Universities, as well as Administrators, Researchers, Counsellors, Aestheticians and Art Critics.

The African Art Section also prepares Degree holders in Bachelor of Arts and Culture to become Lecturers, Historians, Critics, Aestheticians and Curators.

The Department also offers Introductory Courses in Art Education, African Art, Art History, Research Methodology and Thesis Writing to first, second and third year undergraduate students in the Faculties of Fine and Industrial Art.

VISION

The Vision of the Department is to achieve Academic Excellence and train Researchers, Art Educators, Art Historians, Aestheticians, Critics and allied art professionals in line with the aspirations of Ghana's human resource development goals.

MISSION

The mission of the Department is to offer excellent academic training that will equip students who enrol on the department's programmes to become professional Art Educators, Art Critics, Art Historians, Art Administrators, Curators and experts in allied fields. The Department is also committed to research that is geared towards finding local solutions to local problems in Art Education and Art History as well as providing consultancy and professional extension services in the respective course description to Schools, Colleges, Polytechnics, Universities, Research, Arts and Cultural-Oriented Institutions in Ghana.

STAFF RECRUITMENT

To strengthen the academic staff, Dr. Mavis Enti has been appointed Lecturer to the Department Dr. Eric Appau Asante who is a Graduate Assistant has successfully gone through an interview at the College Appointments and Promotions Committee level for appointment as Lecturer and is currently awaiting the second phase of interview at the University level. They would be mentored to eventually take over the academic responsibilities of our Senior Members on contract.

NEW PROGRAMMES

The Department has currently been given accreditation to run two programmes in Education – the Postgraduate Diploma and Master of Education for graduates in all academic disciplines who want to enter the teaching profession. The duration is two (2) semesters for the Postgraduate Diploma and three (3) semesters for the Master of Education. These two programmes would be run under the Distance Education model in the University. Both programmes would begin July, 2010.

The Department has re-introduced ATE 256 Introduction to Art Therapy which is taken by undergraduate students at the Faculties of Fine Art and Industrial Art. The Department is also in the process of finalizing the Curriculum Proposal of Undergraduate Art Education Programme.

FACILITIES

The Department has well equipped offices for Lecturers, Administrative Staff and the Head of Department. It also has four classrooms and a well-stocked library.

ACHIEVEMENTS

The Department continued to fulfil its mandate of producing high quality manpower with MA, MPhil and PhD degrees to occupy Teaching and Administrative positions in the Ghana Education Service, Junior and Senior High Schools, Polytechnics and Universities; Centres of National Culture, Museums, and other Educational and Cultural Institutions in Ghana. In October 2009, Four (4) PhD. candidates and Nine (9) Masters Degree candidates successfully defended their theses waiting for graduation.

OPPORTUNITIES

Graduates of the Department of General Art Studies are mainly employed as Visual Arts teachers, Curators but some have found employment in Prisons Service, Police Service, Banks, Research Institutions, etc.

COLLABORATIONS WITH INDUSTRY AND EDUCATIONAL INSTITUTIONS

The Department maintains close links with the Ministry of Education and the Ghana Education Service. In addition, the Department continues to hold consultation with various Senior High Schools and Colleges of Education on matters relevant to Teaching Practice and student research in the teaching and learning of the Visual Arts. It also has research linkages with the wood Carvers at Ahwiaa, Kente Weavers at Bonwire and Adanwomase, Adinkra Cloth Printers at Ntonso, Bead Makers at Dabaa, all in the Ashanti Region and the Crafts Section of the Centre for National Culture in Kumasi.

A special collaboration for research and professional attachment purposes was forged with the Agogo Presbyterian Women's College of Education. Besides sharing ideas on professionalism in teaching, two (2) American Educators of the International Federation for Education and Self-Help (IFESH) who are currently manning the College's Teaching and Learning Resources Centre liaise with the lecturers of courses ATE 614 – INSTRUCTIONAL MEDIA, ATE 617 PSYCHOLOGY OF ART EDUCATION and ATE 634 ART EDUCATION STUDIO PRACTICE to build the capacity of our MA Art Education students to design and create multi-purpose instructional materials suitable for teaching various subjects across the Basic, Secondary and Teacher Training curricula. This will culminate in a "Pull-Out" in-service training project for teachers in the KNUST Basic Schools. The co-ordinators are Nana Afia A. Opoku-Asare (Mrs) and Dr. Mariama Ross.

A collaborative research project between our Department, Local Primary, Junior High, and Senior High Schools, and the International Paint Pals of Atlanta, Georgia, USA culminated in the Olympic Youth Art Exhibition on the theme of Cooperation, Unity, and World Peace from 5th – 14th December, 2007 in the Art Education Building. The best 25 exhibits were sent to the 2008 Olympics Children's Exhibition in Beijing, China.

Dr. Samuel Adu-Poku, an alumni of College of Art and Social Sciences, KNUST and currently an Associate Professor of Art Education at the Youngstown State University (YSU) in Ohio, USA has helped the Department to establish special collaboration for research with Youngstown State University (YSU) in Ohio, USA.

Also, a Doctoral Candidate of Art Education DSP. Anthony Dadzie has helped to establish a link between the Department of General Art Studies under the College of Art and Social Sciences with the Kumasi Central Prisons in an attempt to help the inmates acquire vocational and technical training within the prison premises.

The Department's Professional Attachment Programme has recently been extended to provide opportunities for MA Art Education students to gain experience and also help in teaching inmates of the prisons to acquire vocational and technical skills.

AWARDS

A Doctor of Philosophy Thesis entitled "Theoretical Foundations of the KNUST Painting Programme: A Philosophical Inquiry and its Contextual Relevance in Ghanaian Culture" by Dr. Kari'kacha seid'ou, a former student of the Department, won the 2008 Academy Silver Award in Humanities of the Ghana Academy of Arts and Sciences. The thesis was supervised by Dr. E.C.

Nyarkoh. The internal examiners were Dr. S.K. Amenuke and Dr. Y.S. Peligah. This indeed has brought honour to the Department in particular and the College of Art and Social Sciences and the University in general.

SPECIAL INITIATIVES

The Department has embarked on the development of a globally oriented academic curriculum for cross cultural studies in the visual arts with the initiative of Dr. Kwaku Ofori-Ansa a US Fulbright Scholar, a professor from Howard University, now attached to the Department. The countries to be included and already contacted for inputs are USA, Ghana, Denmark, South Korea, Italy, France, Japan, China and Malaysia.

Again Dr. Kwaku Ofori-Ansa has collaborated with the Department to form a Cultural Digitizing Club (CDC). The formation of the club is rooted in a conviction that the wealth of knowledge and skills of Ghana's indigenous visual arts should be preserved, maintained and protected through the use of modern information technologies. The conviction was further strengthened by a display of enthusiasm and excitement for such an endeavour by a new crop of technologically skilled and intellectually endowed students, charged up by a vibrant and globally conscious educational environment at KNUST and Howard University.

CONFERENCES, WORKSHOPS AND SEMINARS

Senior Members in the Department attended and actively participated in various conferences, workshops and seminars organized both locally and internationally during the year. Notable among them are:

A workshop on Course Book Writing was held on Tuesday 2nd and Wednesday 3rd February, 2010 at the Departmental Library from 9:00am to 4:00pm each day with Eleven Participants (Lecturers), Two Facilitators (from Institute of Distance Learning, KNUST) and Three supporting staff members from the Department. The objective of the workshop was to enable participants (Lecturers) to be equipped with skills and knowledge on how to come out with course books which could be used by students (on Distance Learning) with no or less difficulty and how they (Lecturers) would be remunerated after writing the course books. Using power point presentation by the facilitators, participants (Lecturers) were taken through a format (template) to come out with a course book.

International Conference on Art Education organized by the Department in collaboration with the African Community of Arts Educators (AfriCOAE) on the sustainability of Visual Arts teaching and learning in the 21st century. The theme was "The Kumasi Symposium: Tapping Local Resources for Sustainable Education through Art" held at College of Art, KNUST, Kumasi in July and August 2009.

Dr. Mariama Ross attended the annual convention of the National Art Education Association in Baltimore, MD, USA from April 14th -18th 2010. She also attended an Annual Conference of the National Art Education Association in the United States of America in July 2009, where she made presentations about life and art in Ghana. The two (2) trips were sponsored by the University. Dr. Ross also made a short presentation on Art Education in Ghana at Newcastle, England when she attended an International Art Summit by the World Alliance for Arts Education (WAAE) in November, 2009.

Dr. Joe Adu-Agyem and Dr. Patrick Osei – Poku presented a paper on the topic "Quality Education in Ghana: The way forward" during 23rd Intra College Seminar, held at the Law Faculty Auditorium, KNUST, on October 12th, 2009.

Senior Members and Students also participated in a Seminar organized by the Department on the topic “Access to Scholarly Journals”. The lecture was delivered by Mrs. Helena Rebecca Asamoah-Hassan (KNUST Librarian) in November, 2009.

DONATIONS

Dr. Kwaku Ofori-Ansa a US Fulbright Scholar, a professor from Howard University donated the following items to the Department:

- Notice Board.
- Multi-Media Television
- DVD Player
- Projector
- Scanner
- Books
- Magazines
- Etc.

Mr. Asubonteng Kwabena, a PhD. Art Education candidate has also donated a projector screen to help students in the Department to develop confidence and competence in public presentations. Also, Mr. Adu-Bempah (MD of Print Art Ltd. and PhD Art Education Student) printed brochures for the Department.

With the help of Professor Patricia Sarro, Dr. Samuel Adu-Poku ,an alumni of College of Art and Social Sciences, KNUST and currently an Associate Professor of Art Education at the Youngstown State University (YSU) in Ohio, USA donated the following items:

- Textbooks
- Pamphlets
- Study Guide
- Slide Guide
- Slides

RESEARCH, WORKSHOPS/SEMINARS/CONFERENCES ATTENDED, AND SERVICE TO THE COMMUNITY

Dr. Joe Adu-Agyem

Research Activities

- “Qualitative Criteria for Perceiving and Talking about Carved Objects in Asante”. (on - going)
- Effects of Culture on Creativity (Submitted to *JUST*- Doing corrections for final publication)
- Domestic Tourism: An underutilized source of Teaching and Learning.(on - going)
- “Exploring the use of Suede Dye on Leather” (co-authored with J.O. Boahin and R. Steiner). Submitted to *JUST* for Publication in 2009.
- “Adopting Vat Dye as an alternative dyeing agent for vegetable tanned leather” (co-authored with J.O. Boahin and R. Steiner). Submitted to *JUST* for Publication in 2009.
- Learner Perceptions in Design Critiques. Impact on Creative Development (Submitted to *JUST* for Publication).
- Diorama Art: A Viable Medium of Museum Education. Co- authored with M. Enti, P. Osei Poku, Steiner R, et.al. (Corrections made and returned to *JUST* for final publication).
- Museum Education for Children. (on-going)

- Bassari Fire Dance as a Source of Cultural Tourism. (Submitted to *JUST* for Publication).

Workshops/Conferences/Seminars Attended

- “**Quality Education in Ghana: The way forward**”. Paper presented with Osei-Poku, P. at the 23rd Intra College Seminar, held at the Law Faculty Auditorium, KNUST, on October 12th, 2009.
- Participated in a workshop organized for New Heads of Department on Friday 4th September, 2009 at Anita Hotel, Ejisu-Ashanti.

Service to Community

- Head, Department of General Art Studies, College of Art and Social Sciences.
- External Examiner of National Board of Professional and Technical Examinations (NABPTEX), Accra; School of Applied Arts, Takoradi and Bolgatanga Polytechnics.
- Founder and Chairman, Tano South District Presbytery Educational Fund.
- Board Member, College of Art and Social Sciences.
- Member, Faculty Board.
- Member, Research and Conferences Sub-Committee, College of Art and Social Sciences.
- Member, Faculty of Fine Art Building Committee.
- Member, Olympic Youth Art Exhibition Committee.
- Member, Faculty Research Methods Committee
- Member, Ghana Society for Education Through Art (GhaSEA)
- Sent Postgraduates (M.A, MPhil, PhD) on Educational Trips to Art and Cottage Industries – (Bonwire, Ahwiaa, Ntonso, Adanwomase, Dabaa and the Centre for National Culture in Kumasi for Aesthetic Education and Experience on 29th October and 5th November 2009.
- Editor, African Journal of Educational Research and Development, Uyo, Akwa Ibom State, Nigeria.

Nana Afia A. Opoku-Asare, (Mrs.)

Research Activities

- Gender, Population and Distribution of Teachers in Pre-University Education, a case study of Ashanti Region, Ghana (on-going collaborative research).
- Dyes and Pigments from selected Local Plant Species (under review for publication by *Journal of Science and Technology*).
- Quality Assurance in KNUST, a Management Review (on- going collaborative research).

Service to the Community

- Resource Person, Dean of Students Committees of Investigation.
- Cognate Member, Faculty of Social Sciences Board.
- UTAG representative on KNUST Basic Schools Management Board.
- UTAG representative on KNUST Photocopy Unit Management Board.
- Coordinator of KNUST Memorabilia.
- Member, Board of Trustees of Okatakyie Agyemang Kodom / Nkoranzah Traditional Council Educational Endowment Fund.
- Member, Planning Committee, Nkoranzah Campus of the Anglican University College of Technology.
- Treasurer, Northern Zone Executive Council of the Chartered Institute of Administration and Management Consultants-Ghana.

Dr. Mariama Ross

Chapter in Book

Ross, M. (April 2010). International field experience in the development of global competency and ethnic identity: Exploration through art and auto-ethnography. In B. Young (Ed.), *Art, Culture and Ethnicity*, 2nd Edition. Reston, VA, USA: National Art Education Association Press.

Conference Papers

- **“Puppetry for elementary teachers: An integrated arts experience.”** Paper presented at the annual convention of the National Art Education Association, Minneapolis, Minnesota, USA. April 17-21 2009.
- **“Addressing Key Educational Issues through Art in Ghana.”** Paper presented at the World Alliance for Arts Education Summit, Newcastle, England. 31 Oct. – 3 Nov.2009.

Research Activities

- “Study Abroad:” Development of Global Competency, National and Ethnic Identity” (under review), *Practicing Anthropology*.
- “Why Have There Been No Great Women Kente Cloth Weavers?” (*Under review for Africa Today*)

Dr. Patrick Osei-Poku

Workshops/Conferences/Seminars Attended

“Quality Education in Ghana: The way forward” Paper presented with Dr Joe Adu-Agyem at the 23rd Intra College Seminar, held at the Law Faculty Auditorium, KNUST, on October 12th, 2009.

Service to Community

- Member, College of Art and Social Sciences Board.
- Member, Faculty of Fine Art Board.
- Member, Board of Governors of Ejisuman Senior High School, Ejisu- Ashanti.
- External Examiner, Kumasi Polytechnic HND Fashion Design and Technology programme.
- External Examiner, Takoradi Polytechnic HND Art Programme.
- Member, Panel for interviewing Lecturers for appointment at Takoradi Polytechnic HND BTech. Art Programme.
- Member, Education Committee of the Anglican Church, Kumasi Diocese.
- Chairman, Parent Teacher Association (PTA), Grace Baptist Preparatory/JHS, Kumasi.
- Coordinator, Asantehene’s Award for Excellence in Art.
- Editor, African Journal of Arts and Cultural Studies.
- Assessor, Journal of Science and Technology (*JUST*)

Dr. Emmanuel C. Nyarkoh

Service to Community

- Board Member, National Commission on Culture, Ashanti.
- Chairman, Board of Governors Ejisuman Senior High School Ejisu, 2001-2010.
- Chairman, Board of Governors Dwamena Akenten Senior High School, Offinso, 2009 to Date.
- Member, Board of Trustees, Offinsoman Scholarship Scheme 1992 to Date.
- Special Guest of Honour, Green Team Inauguration at Offinso 4th April, 2010.

Dr. Bucknor K. Dogbe

Research Activities

- “Politics of Artistic Production in Ghana” (on-going)
- “Ghanaian Arts in Antiquity (on-going)

Workshops/Conferences/Seminars Attended

“Trends of Contemporary African Art” Lecture delivered to American Students of School of International Training at Cape Coast University, on March 26, 2010 at Faculty of Fine Art, Department of General Art Studies. KNUST. Kumasi.

International Moderator in Sculpture at Inter-Nation Moderating Committee meeting organised by West African Examination Council, Ghana. on March 1st to 5th, 2010.

“African Art: Function, Aesthetics and Symbolism” paper presented at the International Conference of Art Educators/Artist of the Department of General Art Studies, KNUST. July 31st to August 14th 2009, on the theme: The Kumasi Symposium: Tapping Local Resources for Sustainable Education through Art.

“Culture, the Arts and Society in Ghana” Paper presented at GoGlobal Ghana 2009 Product Design workshop organised by Royal College of Art London, UK in collaboration with College of Art and Social Sciences, KNUST; Aids to Artisan, Ghana; University of Technology, Sydney, Australia; Department of Trade and Industry, Accra; and British Council Kumasi and Accra; at the Law School Auditorium KNUST, on May 12, 2009.

International Moderator in Sculpture at Inter-Nation Moderating Committee meeting organised by West African Examination Council, Ghana. on March 9th to 13th, 2009.

Dr. Kodwo Edusei

Research Activities

- Basic Drawing Problems in Senior High Schools-Suggested Solutions (on going)
- Educational values of Fante Asafo Flags (on going)
- Yoga-Religion, Superstition, Dogma or Science? (on-going)

Workshops/Conferences/Seminars Attended

- **“ Fante Asafo Flags and Shrines”** Paper presented at the Summer Programme by University of North Carolina at College of Art and Social Sciences, KNUST. June 2009.
- **“Fante Asafo Flags and Cultural Values”** Paper presented at the Art Education International Conference at College of Art and Social Sciences, KNUST. August 2009.

Service to Community

- Member, Ghana Teaching Quality Initiative Task Force.
- External Moderator, Takoradi Polytechnic HND Programmes.
- External Examiner, University of Cape Coast Graduate Programmes.
- Resource Person, Seminar on Presentation of Papers for Promotion, School of Applied Arts, Takoradi Polytechnic.
- Resource Person, Development and Revision of the Senior High School Visual Art Syllabus for the New Education Reform.
- Member, Panel for interviewing applicants for Lectureship appointment at University College of Education, Winneba.

- Member, Panel for interviewing applicants for Lectureship appointment at Takoradi Polytechnic.
- Expert Reviewer of the Creative Arts Syllabus for Primary Schools in Ghana.

Dr. Sylvanus K. Amenuke

Conferences/Workshops/Seminars Attended

- Conference on “**Assessment of Visual Arts**”, Colleges of Education, GES Training and Course Unit, Saltpond, February, 15-20, 2009.
- Conference on “**Creative Arts and Technology**”, Colleges of Education, GES Training and Course Unit, Saltpond, July 7-13, 2009.

Service to Community

Dr. Amenuke continues to render professional consultancy services in Education to Colleges of Education, University of Cape Coast and Ministry of Education, Youth and Sports. He has led national panel to develop manuscripts and publish Textbooks for the new Junior High Schools:

- Basic Design and Technology for Junior High Schools Books 1, 2, 3.

Dr. Opamshen Osei-Agyemang

Conference/Seminar

“**Artistic Aspects of Kwahu Religious Healing**” Paper presented at the International Conference of Art Educators/Artist on the theme ‘The Kumasi Symposium: Tapping Local Resources for Sustainable Education through Art’ organised by the Department of General Art Studies, KNUST, on August 11th 2009.

Mr. Kwabena Baah

On-going Research

- “Innovative Cultural Dynamism through Transfer of Chinese Bamboo Weaving Technology”.
- “Nursery Development of *Bambusa vulgaris* var. *vitata* for Culinary Purposes”.
- “Cultivation of *Panicum maximum* for handicraft production.

Dr. Steve Kquofi

Research Activities

- “Environmental Aesthetics in Ghana: An Art or a Necessity of Life?”
- “Body Art in Ghana: A Critical Study of the Continuing and Changing Trends in Ghanaian Body Art”.
- “The Impact of Art in Promoting Christian Activities in Charismatic Churches in Ghana”.
- “Ghanaian Socio-Cultural Activities: An Epitome of Security, Survival and Continuity of Life”.
- General Knowledge in Art textbook for Senior High Schools for Ministry of Education – Book 2-4.
- “Aesthetic Impact of Ghanaian Indigenous Socio-Cultural Practices on the Environment and its Protection in Ghana”, PhD Dissertation, 13th March, 2009.

Dr. Mavis Enti

Research Activities

- Diorama Art: A viable Medium of Museum education Co-authored with J.Adu-Agyem and P.Osei-Poku (corrections made and returned to *JUST* for final publication).

- The Craze of Fashion Among Female Tertiary Institution Students: Implications for Teaching and Learning (Submitted to JUST, with ASSESSORS) Co-authored with J.adu-Agyem and P. Osei-Poku
- Effects of Culture on Creativity (Submitted to JUST, with ASSESSORS)
- Children's drawings in relation to their Self Concepts: Educational Implications (On-going)
- Domestic tourism: An underutilized source of teaching and learning (On-going)

Service to Community

Art Club Facilitator at Ridge School, Kumasi

Academic Activities

Practicum in Teaching (Professional Attachment)

The MA Art Education programme includes 12 weeks of supervised teaching in local Senior High Schools, Colleges of Education and Tertiary Educational Institutions to gain a practical understanding of teaching and learning at different levels of Ghanaian education. Practicum in Teaching also includes preparation of lesson plans, design and production of instructional resources, and submission of a journal or report of activities undertaken within the period. This qualifies our students for certification with the Ghana Education service as professional teachers.

Practicum in Aesthetics & Criticism

The Aesthetics and Criticism component of the MA, MPhil and PhD programmes includes site-specific visit to local and national craft centres for first hand observation and analysis of carving, weaving, pottery, bead making, metals smiting and indigenous products.

Seminars and Workshops

The Department has a programme of Research Seminar Presentation that serves as a forum for our students to present their thesis synopses, dissertation proposals and in-progress research reports to an audience of staff and students of the Department. The session provides opportunity for the audience to question the presenter on pertinent issues raised as well as make contribution towards enhancing the quality of data collection strategies, analysis and interpretation of the findings. This hands-on experience builds confidence for formal seminar, workshop and conference presentations, besides preparing them for their final year viva voce.

The Department also holds regular seminars to update the skills of visual art teachers, particularly on new developments in the teaching, learning and research in Art Education.

DEPARTMENT OF PAINTING AND SCULPTURE

RESEARCH ACTIVITIES

Godfred Annum

- Enrolment challenges in Fine Art Departments at KNUST: The Way forward
- Advancing Studio Painting Through Computer Technology- A Ghanaian Painter's Experience.

WORKSHOP/SEMINAR

The Department Hosted Prof. Gorewitz to undertake a one-week digital painting Workshop with Second year students in the Painting Section.

STAFF RECRUITMENT

During the academic year under review, 1 (One) Senior Member (Mr. Yaw Mantey Jectey-Nyarko) was appointed as a lecturer for the Sculpture Section.

EXHIBITIONS

Mr. Benjamin Offei-Nyarko, Prof. Ato Delaquis and Mr Kwame Opoku-Bonsu participated in a group Art Exhibition titled Nsruma Art Exhibition at Dei Art Centre in Accra.

ADMISSIONS

The Department of Painting and Sculpture admitted the following number of firstyear students into BFA and MFA programmes for the 2009/10 academic year.

BFA Programme

Painting and Sculpture	-	72
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MFA Programme

MFA (Painting)	-	7
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MFA (Sculpture)	-	8
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MFA (Painting/Sculpture)	-	1
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Total Admission		88
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GRADUATION

During the year under review, the following number of students were presented for award of degrees :-

BFA (Painting)	-	63 students
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BFA (Sculpture)	-	42 students
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MFA (Sculpture)	-	1 student
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TotalNumber		106
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SEMINARS

The Department participated in an orientation programme at the Anglican Secondary School in Kumasi to introduce students in Ashanti Region to courses run by the College of Art and Social Sciences as well as career opportunities

NEW PROJECTS

Installation of Nkrumah Statue for the beautification of the frontage of KNUST.

UPGRADING OF PAINTING AND SCULPTURE DEPARTMENTS

Proposals for Upgrading of the Painting and Sculpture Sections to separate Departments receives approval.

DEPARTMENT OF COMMUNICATION DESIGN

INTRODUCTION

The Faculty of Fine Art comprises three academic departments including the Department of Communication Design. The aim of the Department is to achieve excellence in teaching, learning and research in the area of the graphic arts and multimedia applications. The programme philosophy continues to be “*Theory underpinning practice*” emphasizing the links between academic research, investigation, analysis and media production.

Its objectives are:

- To provide academic and professional training in graphic design and its related study area.
- To equip students with problem-solving methodologies integral to socio-economic development of Ghana.
- To develop professional attitudes and a commitment to excellence.

The Department continues to be actively involved in the training of high-caliber manpower for the Advertising/Packing, Graphic Design and Printing Industry as well as the educational sector in Ghana and abroad. It has also maintained high standards over the years in equipping students with problem-solving methodologies integrated in the socio-economic development of Ghana. Thanks to the very committed academic staff who have upheld the standards despite the challenges they face and the trying conditions under which they work.

UNDERGRADUATE STUDENT NUMBERS

1 st Year	-	141
2 nd Year	-	128
3 rd Year	-	134
4 th Year	-	172
		<u>575</u>

GRADUATE STUDENTS - 4

TOTAL NUMBER OF UNDERGRADUATE AND GRADUATE - 579

PROGRAMME OF STUDY

The Department currently runs a four-year BA programme in Communication Design with students majoring in one of the following in the 3rd and 4th years.

- GRAPHIC DESIGN
- DIGITAL MEDIA STUDIES

A two-year Masters programme in Communication Design which started at the beginning of the 2007/2008 Academic Year with four students is now in the third year. It is envisaged that after the programme some of the graduates will prove themselves capable of joining the academic staff to boost the staff strength.

AWARDS/SCHOLARSHIPS

Elkana Kwadwo Mpesum, a final year student won a GH¢2,000.00 Scholarship from EPP Book Services, Ghana based on some excellent illustrations executed for the company.

Three students, namely, Daniel Komla, Linda Anderson and Shirley Ababio won cash prizes for the Ghana Sumatra CSIR-OPRI Research Logo Design.

Mr. Adam Rahman, a lecturer at the Department of Communication Design, won the Third Prize of the National Logo Competition for the Golden Jubilee National Festival of Arts and Culture, 2007, held in Kumasi, under the auspices of the Ministry of Chieftaincy and Culture.

Mrs. Stuber's Award for the best Packaging student: - Miss Zophia Kukua Palmer won a cash prize of GH¢200.00 as the Best Packaging Student at the Packaging Exhibitor/Seminar organized by the Department in March 2010.

Each year since 2007, the Best Final Year Student is given all-expenses paid Design Achiever's Award in *South Awards*. Miss Zophia Kukua Palmer has won this year's award and will travel to Pretoria, South Africa to receive her prize on 25th May, 2010.

EXHIBITIONS/SEMINARS

The Department organized a one-day Packaging Seminar and Exhibition at the Great Hall, KNUST in March 2010. Among the dignitaries were the Deputy Minister for Information, Hon. Moses Ayariga, the Pro-VC Professor Ellis representing the Vice-Chancellor, the Provost of the College of Art & Social Science and a three-man delegation from the Institute of Packaging, Ghana.

Thapong Visual Arts Centre invited Mr. George Kushiator as a resource person from Ghana to be facilitator at a Painting Workshop in Gabarone in Botswana from 3rd April – 17th April, 2010. The Workshop brought together artists in and around Gabarone. The Exhibition lasted for 3 weeks and it was sponsored by the French Embassy.

Mr. Edward Appiah attended a seminar/workshop on Product Design at Arkershus University College in Oslo, Norway from May 15 – 30, 2010.

DIGITAL MEDIA STUDIES

Mr. Adam Rahman was part of a three-member team which represented the Department and KNUST at a well-attended Health Open Educational Resources (OER) Inter-Institutional Workshop in Cape Town, South Africa, between the 27th -29th July, 2009. The other members of the team were Prof. Peter Donkor, Provost of the College of Health Sciences and Prof. Ohene Opare-Sem, KATH/ Head of Department of Internal Medicine, KNUST. The objectives of the workshop were, namely;

- Share lessons learned from the first phase of implementation of the Health OER Project in affiliated institutions.
- Introduce new African institutions to the Health OER Project and identify future strategic partnerships.
- Discuss a potential future Health OER Network for Africa and the principles upon which its operation should be based.
- Finalize plans to conclude the Health OER Project for 2009.

This was a collaborative effort with the College of Health Sciences, Kwame Nkrumah University of Science and Technology, Kumasi; University of Michigan, Ann Arbor, USA; University of Cape Town, South Africa; University of Western Cape, South Africa; University of Ghana, Legon; OER Africa and the Hewlett Foundation in providing interactive multimedia resources or an ICT-based learning environment for Open Educational Resources (OER). This collaboration is expected to provide new insights into the delivery of educational content.

The KNUST OER Development Committee, which includes the membership of Mr. Adam Rahman from the department, has since submitted a Draft Policy for the University, where the Department of Communication Design has specifically been captured to have a foundational role in training faculty, staff and students engaged in OER. The draft policy has been forwarded to the Resources and Planning Committee of KNUST for their study and comments. It would then be forwarded to the Academic Board for consideration and final determination.

PRESENTATION OF EQUIPMENT

The Open Educational Resources (OER) programme encompass a range of information-such as textbooks, course materials, medical curricula, software and more, that can be accessed online and re-used at no charge. There are therefore concerted efforts at human-resource development, providing an enabling policy-driven environment and the provision of technical resources.

The Department of Communication Design has been determined to be a key player not only in the training of staff and students engaged in OER but in the actual production of OER content for research, teaching and learning.

Therefore, a set of equipment were therefore donated to the Department of Communication Design on the 17th of December, 2009, during a short but impressive ceremony, by the Provost of the College of Health Sciences, Prof. Peter Donkor, to help in the capacity-building process in ultimately realizing the objectives of the KNUST-Michigan Health OER programme. The equipment was received on behalf of the department by Prof. Dr. Daniel Buor, Provost of the College of Art and Social Sciences. In attendance at the ceremony, were the Dean of the Faculty of Fine Art, Prof. Daniel Ohene-Adu, Mr. J. W. Awuku Appiah, Head, Department of Communication Design, Mr. Adam Rahman, OER Representative at the Department of Communication Design, Prof. Ohene Opare-Sem, Head, Department of Internal Medicine/KATH, and other members of faculty.

The donation of these equipment to the Department of Communication Design is therefore being done at the behest of the Michigan-Ghana Charter/Hewlett Foundation through the College of Health Sciences. The items donated are as follows:

ITEM	QUANTITY
Dell Studio XPS 1640 Laptop	1
Dell Inspiron 1545 Laptop	3
Wacom Bamboo Fun Graphic Tablet Set	1
Wacom Intous4 Pro Pen Tablet Set	1
Defcon CL Combo Cable Locks	4
Iomega External HDDs - 1 Terabyte	2
Audio-Technica Microphone	1
Dynex Lightweight Tripod	1
Adobe CS4 Master Collection	1

These would help the Department, in the short to medium term, to strategically position itself for efficient and effective delivery on the digital media technical demands of OER production and training.

STAFF ACTIVITIES

Mr. J. W. Awuku Appiah

Ongoing Research Programme

- Teleportation
- Form and Function

Books

- Introduction to figure drawing (Published).
- Figure Drawing for all, (Unpublished).
- Basics of Drawing and Aerial Perspective Drawing (unpublished).

Service to Community

- External Moderator of Takoradi Polytechnic Examination Questions – 2009.
- Signage for Medical School New Site – 2009.
- Signage for Law Library – 2009.
- Signage for Faculty of Fine and Industrial Art Library.

- Chairman, Faculties of Fine Art and Industrial Art Welfare.
- Chairman, Design Press Management Board.
-

Mr. George Kushiator – Ongoing Research

- Multimedia Techniques: Electronic adaptation for Painting.
- Teaching Photography in Higher Institutions in Ghana: The Case of Faculty of fine Art.
- Photography as Fine Art Medium in Ghana: Challenges and Possible Solutions.
- New Media Technology Art and in the Face of Globalisation: The Case of the Ghanaian Artist.
- Redesigning and Construction of Multipurpose Grating Machine for the Cottage Industry in Ghana.

Mr. Francis Eric Eshun

International Conference on Art

Date: 31st July – 14th August, 2009.

Venue: College of Art, KNUST, Kumasi.

Presented a Paper Titled: Fostering Creative Thinking and Problem solving in Graphic Design Education: The Innovative Classroom Environment.

Theme for Conference: The Kumasi Symposium: Tapping Local Resources for sustainable Education through Art.

Mr. Kusi Appouh

- Animation Seminar/Workshop

Date: 7th – 8th November, 2009

Venue: Alliance Francaise, Kumasi

- Led Staff and Multi-media Students to Participate in this 2 short Productions were made during this period.
- 2nd Follow-up Animation seminars held in Accra attended by 2 representative for the Department.
- Collaboration with Dutch Film Producer involving short Animation and Live
- Productions. These Productions (Duration: (One minute each). Would be entered into an International One Minute Film Festival – Venue Yet to be known at the time of writing.
- Special Software for Video Production DONATED to the Department by Sony Corporation through American Professor Miller towards enhancing Academic Work in Multimedia.

Mr. Edward Appiah

- International Conference on Art Education (31st July – 14th August, 2009).

Theme: Tapping Local Resources for Sustainable Education Through Art.

Lecture Delivered: ICT in Design Education, a Review of Pedagogy.

- **Intra College Lecture:** African Art, Product Design – Nexus of Industrialization October 5, 2009.

Mr. Adam Rahman

Membership/Fellowships/Partnerships

- Member, Institute of Packaging, Ghana (IOPG)
- Member, Ghana Institution of Graphic Artists, Ghana (GHIGA)

Awards/Scholarships

Won 3rd Prize, Logo Competition for Golden Jubilee National Festival of Arts and Culture (NAFAC 2007) organized by the Ministry of Chieftaincy and Culture. [10th November 2007].

Research/Thesis

- The Application of Digital Art For Tourism Promotion In The Dangme East District. (Ongoing).
- Producing Open Educational Resources (OERs) in a Developing Country; The case of Ghana (Ongoing).
- Of Standards, Rules and Conventions: Strengthening The Packaging Industry In Ghana (Ongoing).
- Photography, design and production of post-paid postcards of KNUST (Ongoing).
- Canoe Culture on the East Coast of Ghana, from Ada to Aflao. (Ongoing) PhD programme, KNUST, Ghana. [2006-].

Conferences/Workshops/Seminars

Member, Hands-On Workshop On Open Educational Resources(OER) by The College of Health Sciences, Kwame Nkrumah University of Science and Technology, Kumasi; University of Michigan, Ann Arbor, USA; University of Cape Town, South Africa; University of Western Cape, South Africa; University of Ghana, Legon; OER Africa and the Hewlett Foundation. February 23-24, 2009.

Member of KNUST Team, Health Open Educational Resources (OER) Inter-Institutional Workshop, Cape Town, South Africa. July 27-29, 2009.

Service to Community

- Secretary/Adjunct Co-ordinator – Inter-Faculty Packaging Committee, KNUST [2008-]
- Member, KNUST-IOPG Packaging Technical Committee [2007-].
- Patron – Campus Christian Family(CCF), KNUST [2006-].
- Redesign and Pre-press Draft Colour production of Complimentary Cards for CONSAR Group of Companies. March, 2009.
- Member, Open Educational Resources (OER) Development Committee, KNUST.[March, 2009-].

FACULTY OF LAW

INTRODUCTION

Established in 2003 within the College of Art and Social Sciences, the Faculty of Law currently offers under-graduate degree programmes leading to the award of Bachelor's Degree in Law (LL B) for three categories of students:

- 4-Year LL B undergraduate students
- 3-Year LL B undergraduate students
- 4-Year LLB undergraduate (Part-time) students

The LL B programme is [a] taught course with emphasis on both theory and practice, Moot courts, field trips and vacation training programmes are embarked upon to help enrich students' practical experience and orientation. The courses are designed to equip students with a broad and comprehensive legal background which will enable them, on graduation, to take up jobs in the Legal service.

The Faculty also admits students from jurisdictions other than Ghana with Nigerian students constituting the majority of foreign students. For the 2009/2010 academic year, fourteen (14) foreign students were admitted into the Faculty.

LL M PROGRAMME

Plans are far advanced to start the LL M Programme next academic year.

ESTABLISHMENT OF A CAMPUS OF GHANA SCHOOL OF LAW

KNUST and University of Ghana are considering the establishment of a branch of the Ghana Law School next academic year.

In this regard, KNUST has allocated a site for the construction of additional structures to accommodate the demands of the Law School.

STAFFING

The Faculty of Law has an efficient academic staff consisting of one (1) Professor, one (1) Senior Lecturer, twelve (12) Lecturers and four (4) Teaching Assistants. The latest addition to the academic staff is Miss Ewura Esi Nketsiaba Asmah who has recently been appointed Lecturer to the Faculty. She is a pioneer of the post-first degree holders admitted to the Faculty for the LL B and a recipient of Fordham University scholarship to pursue LL M [under which she obtained her LLM degree. Four (4) lawyers and products of this Faculty namely: Mr Samuel Adarkwa Boadi, Mr Richmond Numbo Saaka, Miss Elizabeth T Hassan and Miss Doreen Adoma Antwi have been engaged this academic year as Teaching Assistants to support the teaching staff. Three (3) more lectures are expected to join the teaching staff mid 2010/2011 academic year.

RESEARCH AND PUBLICATION

Apart from teaching, all the lecturers have continued to contribute to publications in refereed journals. The KNUST Law Journal is still in publication and has come out with its fourth issue.

SERVICE TO THE COMMUNITY

The Faculty continues to offer their skills and expertise, through consultancies, legal advice and training programmes, to individuals and organizations. Almost all the lecturers have this year served on investigatory committees set up within KNUST. Individual members of staff also continue to offer various services to organizations outside the university community. In particular, the Dean of the Faculty was made a Member of the General Legal Council and also served on the Professional Legal Education Committee of the Council. He also serves on the Joint Customary Law Project of the National House of Chiefs and the Law Reform Committee. In addition, the Faculty offers service courses to nearly every other Faculty/Department or Unit of the University, teaching courses such as Engineering/Construction Law, Intellectual Property, Contract Law, Environmental Law, etc.

SCHOOL OF BUSINESS

CONFERENCES ATTENDED AT WHICH PAPERS WERE READ

J. M. Frimpong

Between March 24 – 29, 2009 KSB hosted the MBA Program International Management of Resources & Environment (IMRE) based at Friedberg in Germany, on the occasion of its 10th Anniversary Alumni Meeting “Managing Africa’s Resources Sustainably” at the Engineering Guest House KNUST. Messrs J. M. Frimpong and Samuel Akomea, both of KSB were resource persons.

Between the 4th – 9th January, 2010 four senior members of KSB attended a six day workshop in Accra dubbed “ABLE Ghana Conference” after which KSB was presented with a Copying License Agreement. The license agreement, as a legal document is to be signed on behalf of the Institution by the Universities Secretary or Registrar, as a prerequisite to obtaining all course materials from The Open University Business School based at Walton Hall, Milton Keynes in the United Kingdom.

Between the 27th – 29th July, 2009 Messrs J. M. Frimpong and Samuel Akomea were resource persons at the Technological and Business Services Fair organized by the Suame Magazine Industrial Development Organization (SMIDO) to train their artisans.

Between 4th to 7th August, 2009 KSB leadership successfully co-organized with Crown Financial Ministries of South Africa, a four-day comprehensive workshop for seven senior members of KSB to be train in the use of CAREER GUIDANCE Software. The event took place at Melban Hotel, Santasi – Kumasi on The participants, who became Certified Career Direct Consultants, are now ready to link up with the headquarters in Gainesville GA 30503 of South Africa to provide professional career counseling to students and any other applicant for such services.

Between the 9th – 12th December, 2009 J. M. Frimpong presented a paper at THE ECONOMICS & INTERNATIONAL BUSINESS RESEARCH CONFERENCE. The venue was the Royal Palm Resort Hotel, Miami, USA. The title of the paper was “Size of Government Expenditure and Economic Growth in Three WAMZ Countries”, which has since been published in **The Business Review, Cambridge** Volume 14, Number 1, December 2009 ISSN 1553-5827 www.JAABC.com

Kwasi Poku

International Business and Economics Research Conference (IBER), from 5th to 7th October 2009, titled, *“An Assessment of the Prospects of Venture Capital Finance in Ghana: The views and perceptions of selected SME’s in Accra, Ghana.*

Gordon Newlove Asamoah

Applied Business Research Conference organised by Clute Institute for Academic Research, from 5th to 8th January 2009.

- *Beta risk estimation of Companies listed on Ghana Stock Exchange.*
- *The Impact of divided announcement on share price behaviour.*

J. K. Turkson& K.O.Appiah

Business & Economics Society International Conference, July 15 – July 19, 2009, Kona-Hawaii, USA.

- The Role of Micro Financial Institutions in Ghana: The Small and Medium Enterprise Perspective.
- Bankruptcy Prediction in Ghana.
- Managerial Creativity and Innovation: A Panacea for Organisational Change and Development.

Samuel Yaw Akomea

Consequences of Host Country Threshold Regimes on Small Businesses was presented during the International Academy of African Business and Development Conference in Kampala, Uganda, in May 19-23, 2009. This paper discussed the implications of the Bank of Ghana directives on Bank Re-capitalization on Ghanaian SMEs. This paper won the Best Paper Award in the Entrepreneurship and SMEs Track in Kampala, Uganda.

PROCUREMENT AND INVENTORY MANAGEMENT WORKSHOP

Some members of the Department of Information Systems and Decision Sciences attended a workshop on Procurement and Inventory Management organized by Ghana Supply Company Limited. This was held on the 17th and 18th of September, 2009 at Takoradi.

2ND CRANFIELD AND CARDIFF INTERNATIONAL CONFERENCE ON HUMANITARIAN LOGISTICS

Three Lecturers from the KNUST School of Business attended the 2nd Cranfield and Cardiff International Conference on Humanitarian Logistics in the United Kingdom, held on the 25th and 26th of March, 2009. Mr. Jonathan Annan delivered a paper on 'Evaluation of Needs Assessment, the case of NADMO on 2007 Northern Ghana Floods'. Mr. David Asamoah also delivered a paper on 'Coordinating Humanitarian Logistics through ICT'. Dr. F. T. Oduro equally delivered a paper on 'Needs Assessment in the Delivery of Relief to the 2007 Northern Ghana Floods, the case of World Vision Ghana'.

INAUGURATION AND WORKSHOP OF THE NATIONAL PLATFORM FOR DISASTER RISK REDUCTION AND CLIMATE CHANGE RISK MGT

Mr. David Asamoah of the Department of Information Systems and Decision Sciences of the KNUST School of Business participated in a two-day programme on the inauguration and workshop of the National Platform for disaster risk reduction and climate change risk management. This was held on the 14th and 15th of October, 2009 held at the Accra International Conference Centre. Hence, KNUST School of Business was nominated among the technical committee members – conducting research in this area.

WORKSHOP ON TOTAL QUALITY MANAGEMENT

On the 21st of May, 2009, the Department of Information Systems and Decision Sciences organized a workshop on Total Quality Management. The Resource Person was Professor Emeritus Abraham Bobas, University of Waterloo, Canada, and President of the Statistical Society of Canada.

WORKSHOP ON CAREER DIRECT

In the 1st week of August, 2009, seven members of KNUST School of Business were trained as Career Direct Consultants in the application of Career Direct Software by South African Consultants.

INFRASTRUCTURE DEVELOPMENTS

Works at the Main Block of the KSB New Site is 85% complete with the main parking area 90% complete and the extended parking area 50% complete.

NEW PROGRAMMES OR COURSES INTRODUCED

- KNUST has appointed its first ever Co-ordinator for Entrepreneurship to spearhead and provide a meaningful leadership towards Entrepreneurship Co-ordination and Development at KNUST. Currently, the entrepreneurship programmes on campus, which are ad hoc and un-coordinated, are being reviewed to serve the University community and beyond well. This is against the backdrop of the immense role of entrepreneurship education and enterprise development in a rapid socio-economic transformation of any society. Already various meetings have been held and stakeholders have been widely consulted and an entrepreneurship review meeting is scheduled for 21st January 2010 involving all major stakeholders at KNUST. A comprehensive innovative entrepreneurship policies and programme would be out-drafted shortly to revolutionise entrepreneurship education and enterprise development on campus, provide a meaningful impact on university community

and others stakeholders and the Ghanaian society at large. Further information may be obtained from Dr. W.A. Owusu-Ansah, the KNUST Entrepreneurship Co-ordinator.

- BSc Logistics & Supply Chain Management

COLLABORATIONS WITH INDUSTRY AND EDUCATIONAL INSTITUTIONS

International Collaborations

- During the year under review, KSB established an International Collaboration with the Aalborg University, (AAU) Denmark, on students exchange and staff capacity building. The Marketing Department intends to use this collaboration to run a Joint Degree MBA in International Business in conjunction with Center of International Studies, Aalborg. Under the programme, MBA students who choose this option will do the third Semester in Denmark.
- Signed MoU between KNUST (KSB) and TU Bergakademie Freiberg
- MoU between KNUST (KSB) and TASMACH School of Business, University of London signed.

Collaboration with The Chartered Institute of Logistics and Transport (CILT)

On the 19th of September, 2009, the Executives of CILT Ghana visited the new premises of KNUST School of Business (KSB) to acquaint themselves with the state of the school's facilities. This was part of their accreditation process. They finally concluded that the school had excellent facilities for teaching and learning and therefore promised to work harder to ensure that KNUST School of Business is accredited to run all the CILT courses in due course. After the inspection of the facilities, the executives of CILT together with the teaching staff of KSB met the Vice Chancellor of KNUST at the Dean's office where they had fruitful discussions. The discussion centered on partnership with KSB and CILT in the teaching of Logistics and Transportation Management. The Vice Chancellor gave lots of positive input and was very enthusiastic, partly due to his membership as a fellow of CILT and his knowledge in transportation management.

EQUIPMENT FOR TEACHING AND LEARNING PURCHASED

- 10 No. Lap Top Computers
- 3 No. Printers

SPECIAL INITIATIVES ADVANCED

Training Programmes

The Department of Marketing and Corporate Strategy in conjunction with the Human resources Development Section organized a two-day workshop with the theme "Effective Customer Service and Image Building in a Public University" for 35 Senior Administrative Staff of KNUST. The two-day workshop which took place on was part of the Departments extension services to the University. The facilitators were Mr. Samuel Yaw Akomea, (Head of Department), Dr. Kofi Poku, and Mr. Bylon Abeeku Bamfo. Such initiatives have been planned ahead to cover other focus groups in KNUST.

Centre for Micro, Small and Medium Enterprises

The Department of Marketing and Corporate Strategy has also submitted a proposal on the establishment of Centre for SMEs to the College Board for onward submission to the Planning and Resource Unit. The Centre aims at establishing the link between KSB and SMEs as well as with other collaborative institutions of development. Other strategic partners, such as the Ministry of Trade and Industry, World Bank, and German Embassy and Banking institutions are being briefed.

AWARDS WON

J.M. Frimpong

J. M. Frimpong of KNUST School of Business and Eric Fosu Oteng-Abayie of Economics Department, CASS, received a joint ***“Best Paper Award in the Accounting & Finance” Category*** at the 2009 International Conference on Business and Technology (ICBT 2009) in Baltimore, Maryland, USA, between 24th and 27th September, 2009. The title of the paper that won the award is: ***“On the Predictability of Inflation Rate in Ghana”***.

Mr. Kwasi Poku

- Best Paper Award - IBER Conference (Oct 2009)
- Lecturer of the Year - KSB Students Association(2008/2009) Award

Mr. Gordon Newlove Asamoah

- Best Paper Award - Beta risk estimation of Companies listed on Ghana Stock Exchange

OTHER NECESSARY INFORMATION

International Competition

Five final year (undergraduate) students from the Department of Marketing and Corporate Strategy participated an International marketing Simulation Competition organized by the Asper School of Business, University of Manitoba, Canada. The competition which spanned October to December, 2008, offered the students the opportunity to practice with the simulation software which is very expensive to acquire. Two of the students represented the team during final presentation was made at Winnipeg, Canada. In all, 18 Business Schools from various parts of the world (North and South America, Europe, Asia and Australia) participated. So far, in the 27 years of the competition, KNUST School of Business is the first Business School from the entire African continent to make it to the finals. The team won a plaque as “A Promising Team”. The Provost, (CASS) has since congratulated the team.

Establishment Of Center For Supply Chain Leadership

On 15th April 2010, the Department of ISDS organised a Public Lecture to launch and establish the West African Institute of Supply Chain Leadership (WAISCL), which aims to provide innovative, practical and tailored supply chain training and sector specific research.

FACULTY OF SOCIAL SCIENCES

INTRODUCTION

The Faculty of Social Sciences is the largest faculty in the University in terms of students’ size and number of undergraduate programmes. There are seven Academic Departments as listed below:

- Department of Economics
- Department of English
- Department of Geography and Rural Development
- Department of History and Political Studies
- Department of Modern Languages
- Department of Religious Studies
- Department of Sociology and Social Work

The Culture and Tourism Programme comes under the administration of the Department of Geography and Rural Development.

Each Department run its own undergraduate programme(s). In all, the Faculty now runs eleven (11) academic programmes at the undergraduate level. There are:

- BA (Economics)
- BA (English)
- BA (Geography and Rural Department)
- BA (History)
- BA (Political Studies)
- BA (French)
- BA (Akan)
- BA (Sociology)
- BA (Culture and Tourism)
- BA (Religious Studies)
- BA (Social Work)

The Faculty runs post-graduate programmes (ie. MA, MPhil and PhD) in the various disciplines.

The student-staff ratio is far in excess of the required mandatory ratio. The Faculty therefore has a huge task of building greater staff capacity to reduce teaching load per staff at the undergraduate level, and to facilitate expansion of higher degree research programmes.

In spite of the dearth of staff, the Faculty has not compromised on the quality of teaching and research capabilities. This positive posture is attributed to diligence, industry and determination on the part of both staff and students.

For the academic year under review, the Faculty continued to benefit from the benevolence and cooperation of institutions, nation and international agencies, and private personalities. Some of these are featured in the ensuing Departmental Reports. The Faculty also had collaborative discussion with a lot of universities including Bucks New University, Princeton University, University of Michigan, the University of New Hampshire and Sheffield Hallam University, State University of New York at Genesio, among others.

The vision of the Faculty is to ensure academic excellence in teaching and research to support the socio-economic, political and cultural advancement of Ghana and our mission is to build the desired human resources and physical infrastructural capacities to achieve our strategic goals.

Our biggest challenge, as a Faculty, is the lack of physical infrastructure. In spite of our long and productive services to KNUST, the Faculty is handicapped in terms of office space and accommodation. Over fifteen (15) Senior members do not have office spaces, not to mention the administrative and ancillary members of staff. These lectures do not even have the “luxury” sharing office space with colleagues. Our appeal, thus goes to the University authorities, the alumini, and friends of the Faculty to help us put up a building complex to house the Faculty of Social Sciences to enable us serve the university and the nation much more effectively and efficiently.

DEPARTMENT OF RELIGIOUS STUDIES

The Department of Religious Studies, one of the newest Departments within the Faculty of Social Sciences, is growing steadily.

AIMS AND OBJECTIVES

The Department exists to equip students with requisite skills to identify problems of society and how to respond to them. It aims at exposing students to the religio-cultural dimensions of human development focusing attention on how norms of behaviour are derived and applied. The Department seeks to develop a systematic approach to religious and moral thinking and aims at introducing the major World Religions and the African Traditional Religions to students so as to foster in them a balance of thought and tolerance in respect of religious pluralism of the world. The Department further aims at critically examining faith and belief in the context of a world characterized with scientific modernity.

STUDENT POPULATION

The Department has a total of 304 students. The breakdown is as follows:

Year 1:	-	108
Year 2:	-	40
Year 3:	-	65
Year 4:	-	66
PG 1:	-	12
PG 2:	-	13

The Students Teacher Ratio (STR) is about twenty-five to one (25:1)

RESEARCH ACTIVITIES

Research activities and publications by teaching staff within the year are encouraging. Below are the summaries of the research activities and publications of the individual lecturers of the Department.

Rev. Jonathan E.T. Kuwornu-Adjaottor

- Patronage and Usage of the Ghanaian Mother-tongue Bibles in the Kumasi Metropolis (Forthcoming)
- Contemporary Prophetism in the Kumasi Metropolis (Forthcoming)
- New Testament Concepts of Forgiveness in the Gospels in the Context of Dangme Translation and Usage (Forthcoming)

Rev. Prof. Emmanuel Asante

- “Jesus the Christ: A Critical Survey of Christological Thought in Christian Scholarship” (On-going).
- “Poverty: A Challenge to Christian Faith” (Forthcoming).

Rev. Dr. Kofi Effa Ababio

- “The Churches’ Contribution to the Political Independence of Ghana”. (Forthcoming)

Rev. Kwabena Opuni-Frimpong

- “Constructing Theology with African Indigenous Resources: An Exploration into the Formation Patterns of Akan ++traditional Leader and its Significance for Christian Leadership Formation” (Doctoral Thesis, nearing completion).

PRESENTATIONS BY FACULTY

Nairobi, PROCMURA-organised CORAT refresher Course for Area Advisers, 18-26 November 2009

1st Social Science Conference 2009. University of Education Winneba. March 2-3 2010 at the J. N. Aryeetey Auditorium, South Campus. (Presented Paper)

A Seminar on Catholic-Islam Relationships and Dialogue. Organised by the Centre for Human Development. Ghana Catholic Bishops' Conference. Pope John Paul II Formation Centre. Ofoase Kokoben. April 27-29, 2010 (Presented Paper).

OTHER ACTIVITIES

MA, MPhil Programmes

The MA; MPhil programmes commenced during the 2008/2009 academic year are in progress. The work of the first batch of 13 graduate students is progressing satisfactorily.

Religion and Science Conference

The editorial work on the proceedings from the Religion and Science Conference has been completed. Presently the manuscript is with the University Printing Press and will hopefully be out soon.

Staff Recruitment

To strengthen the academic staff, the Department is steadfastly making progress in its recruitment drive. Presently, four applicants have been interviewed and it is expected that at least two of them would be appointed in the areas of Systematic and Historical Theologies and African Traditional Religion.

Short Practical Courses for Ministers of the Gospel

The Department's plan to offer short practical courses for ministers of the Gospel is still on the drawing board.

Departmental Offices

The Department has moved into new offices (fully furnished and equipped with the basic office equipments) located in the New Auditorium. Gradually but surely, the Department is coming into its own in the academic community of the University.

CONCLUSION

As a young Department we are confronted with many problems, the past years have been good and the future prospects continue to appear bright. No doubt the Department of Religious Studies has come to stay.

DEPARTMENT OF ECONOMICS

INTRODUCTION

The Department of Economics is one of the seven Departments of the Faculty of Social Sciences. The Department runs programmes in Economics at both undergraduate (BA) and graduate levels (MA, MPhil and PhD). The Department continues to offer Economics as an integral part of other undergraduate and graduate programmes in virtually all faculties of the University.

TEACHING AND SUPERVISION

As stated in our report last year, large student numbers continue to pose challenges to the Department in its desire to maintain quality of teaching and learning. The number of undergraduate students within the Faculty of Social Sciences exceeds 1500 made up of students pursuing the BA Economics and others who take Economics as the second subject. In addition the Department offers service to over 850 undergraduate students of the applied sciences and technology programmes who take economics as a core or elective course. The Department continued to adopt the group approach as far as the undergraduate research project was concerned. Postgraduate student population for the year was 26 made up of MA (Econ) I – 15, MA (Econ) II - 10 and PhD (Econ) 1

RESEARCH

The teaching staff in collaboration with the students and other colleagues has engaged in research activities in various areas of economics.

Prof. J. Ohene – Manu.

- Economic Growth – Exchange Rate Linkage in Ghana: Empirical Analysis
- Commodity Exports and World Price Dynamics : A Trend Study for Ghana
- Rural Poverty and Micro – Financing in Pro – Poor Communities in Ghana

Mr. K. J. Opoku – Afriiye

- Incidence Analysis of Public Expenditure in Ghana
- Efficiency and Equity Consequences of Public Funding of Tertiary Education

Mr. J. Appiah –Nkrumah

- Formal Sector Employment in Ghana: Has Trade Liberalization had any Impact?

Mr. J.D.Quartey

- Determining Private Investment in Ghana

Mr. A.K. Osei – Fosu

- The Heavily Indebted Poor Countries (HIPC) Initiative and Poverty Reduction: A Subjective view.
- People's Awareness, understanding and Perceptions of the Heavily Indebted Poor Countries (HIPC) Initiative to the Reduction in Poverty
- Determinants of An Aggregate Import Demand Function for Ghana: An Empirical Analysis

Mr. Kwaku Boateng

- The Impact of Petroleum Deregulation on the Oligopolistic Market Structure in Ghana..
- The Implications of Foreign Aid Fungibility for Economic Growth in Ghana

Mrs. Grace Ofori – Abebrese

- Empirical Assessment of Apprenticeship Training in Indigenous Handicraft Industries in Ashanti Region. (Submitted to the Journal of Science and Technology (JUST)KNUST)
- The Influx of Banks and Funding of Small and Medium Scale Enterprises in Ghana

Dr. (Sr.) Eugenia Amporfu

- Quality Effect of Early Discharge of Maternity Patients. Does Hospital Specialization Matter?
- Differences in the Quality of Care and Resulting outcomes in Childbirth between Family Physicians and Obstetricians: Comparison of a Matched Cohort.

- Does Ghana's National Health Insurance Scheme Encourage Moral Hazard? An Approach using Matching Estimation
- The Gap between the Health Status of Rural and Urban women in Ghana: A Case study of patients at a Mission Hospital in the Ashanti Region.

Mr Yusif, Hadrat Mohammed

- Cost Sharing in Ghanaian Universities: Does Tuition have impact on Enrolments?
- Investigating the Effects of Macroeconomic Variables on Demand for University Education in Ghana.

Mr. Eric F. Oteng – Abayie

- Aggregate Import Demand and Expenditure Component in Ghana: An Econometric Analysis
- Bivariate Causality Analysis Between FDI Inflows and Economic Growth in Ghana
- Market Returns and Weak-Form Efficiency : The case of Ghana Stock Exchange
- Determinants of Inflation in Ghana
- Predictability of Inflation in Ghana
- Working Capital Management in selected Rural and community Banks in Ghana
- Exports and Imports in Ghana; Are they co integrated?
- Formal Sector Employment in Ghana: Has Trade Liberalization had an Impact?

Mr. Emmanuel Buabeng

- Emmanuel Buabeng and George Adu, Financial Development and Private Investment in Ghana
- Emmanuel Buabeng Foreign Capital Inflows and Dutch Disease, Evidence from Ghana

CONFERENCES, SEMINARS AND WORKSHOPS

Mr. Yusif Hadrat Mohammed

- International Conference on Human Capital Development (ICONHCD) 25th – 27 May 2009.
- International Conference on Educational Research and Practice (ICERP) 10 -11 June 2009.

SERVICE TO THE COMMUNITY

Mr. K.J.Opoku – Afriyie

Commission Member, National Commission for Civic Education (NCCE), Accra

Mr. J. Appiah – Nkrumah

- He continued to serve as Examiner/Moderator in Economics for the West Africa Examination Council and Examiner/Moderator in Economics for the Institute of Chartered Accountants (ICAG).
- National Secretary of the University Teachers Association of Ghana (UTAG) since September, 2007.

Mr. A.K. Osei – Fosu

- Team Leader/Examiner for West African Examination council since 1996.

Mr. Kwaku Boateng

- Member of the Board of Trustees- Bosomtwe Development Foundation

Mrs. Grace Ofori – Abebrese

- Cognate member of the Board of Law Faculty
- Member of the University Safety Committee
- Departmental Examination Officer
- Team Leader for West African Examination Council
- Moderator for West African Examination Council

Dr. (Sr.) Eugenia Amporfu

- Member of the Editorial Board of Ghana Policy Journal
- Reviewed manuscripts for the Institute of Economic Affairs Working Papers.
- Reviewed articles for the Ghana Policy Journal

Mr. Eric F. Oteng – Abayie

Reviewed manuscripts for the following journals

- World Development Journal. Elsevier
- Journal of Science and Technology (Just), KNUST
- Management Review News, Emerald Insight

Mr. Emmanuel Buabeng

Coordinator Manso Nsiana Community Education Committee, Amansie West District

COLLABORATION

The Department continued its collaboration with the African Economic Research Consortium (AERC). Staff of the Department continued to take part in teaching on the collaborative Masters programme (CMAP) and the collaborative PhD Programme (CPP).

**DEPARTMENT OF GEOGRAPHY AND RURAL DEVELOPMENT
INTRODUCTION**

The Department of Geography and Rural Development (DGRD) is one of the seven (7) Departments of the Faculty of Social Sciences in the College of Art and Social Sciences. The demand for its delivery of teaching, learning and Research is high. The Department delivers over forty-eight (48) courses on the average, per semester to a student population of about one thousand, one hundred and fifty seven (1,157) with staff strength of sixteen (16).

The Department also provides service lectures to the following Colleges: the College of Science, the College of Health Science; the College of Agriculture and Mechanical Engineering all in the Kwame Nkrumah University of Science and Technology (KNUST).

In consonance with the University's core values and objective of offering top-notch teaching and research activities, the Department of Geography and Rural Development offers a wider range of courses ranging from Geomorphology, Climatology and Biogeography, Cartography and Mapwork, Gender and Population Studies, Decentralisation and Rural Development, to Geography of Tourism and the new state of the art tool for Geographic Research, that is Geographic Information Systems (GIS).

Teaching and learning activities in the Department are motivated by the expectation that the Department's quota of first grade students will be turned-out into outstanding and versatile graduates, ready to take higher responsibilities and challenges in all fields of endeavour.

The Department continues to deliver courses leading to the Award of the Four (4)-year Bachelor of Arts Degree and also Coordinates and runs the Four (4)-year Bachelor of Arts Degree in Culture and Tourism concurrently, as undergraduate programmes. It also offers a Two (2)-year MPhil Degrees and the Vice Chancellor's initiative of MPhil/PhD at the Post-graduate level and the Three (3) year PhD Geography and Rural Development Programme offered separately.

It must be placed on record that the Department graduated two candidates of the VC's MPhil/PhD initiative and the very first batch of the BA (Arts) Culture and Tourism graduands during last June and November, KNUST Congregations.

Senior Members in the Department consist of One (1) Full Professor, One (1), Senior Lecturer and fourteen (14) Lecturers. During the period under review, three (3) Senior Members were recruited into the Department. The Head of Department is assisted by one (1) Administrative Assistant.

STUDENTS' ACHIEVEMENTS AND PARTICIPATION

Staff-Students' participation in club activities and field trips to promote teaching and learning has been vibrant. Through the formation of the Geography Students Association (GeoSA) and the Tourism Students Association (TourSA), field trips and excursions have been organised to various places of geographic and Tourist interests. These include selected areas in the Central, Volta, Ashanti, Brong-Ahafo and the Northern regions

The 2009/2010 Final Year Tourism Students participated in the United Nations International World Tourism Day Celebrations between 21st – 27th September, 2009.

According to the former Sector Minister of Tourism, Ministry of Tourism, Accra, Honourable Mrs. Juliana Azumah Mensah (MP), in her Letter of Appreciation of 22nd October, 2009, a lot of activities planned for the celebrations were carried out successfully with our students support and participation.

The GEOSA Executives organised an orientation for fifty-four (54) 1st year Freshmen which included observation of environments around the KNUST. They started from the Botanical Gardens and ended at Lake Bosomtwi through the Kessben Sports Stadium and Resort on Saturday 4th October 2009.

Moreover, the GEOSA has taken it as a major project, the refurbishment of the MPhil Geography and Rural Development Lecture Room for a new Remote Sensing and Geographic Information Systems (GIS) Laboratory. They are financing the purchase of twenty (20) state of the art Computer Tables, Burglar-proof fittings, woollen carpeting and electrical installations, under the technical oversight of the KNUST Development Office.

This is their contribution to complement assistance/donations in the form of some twenty five (25) computers donated by our collaborators at the State University of New York at Geneseo Campus, New York (SUNNY – Geneseo) in the U.S.A. to build a Remote Sensing and G.I.S. Laboratory for the Department.

All the two hundred and fifty (250) final year Geography and Tourism students jointly embarked on a Field Exposure to selected Communities, Industries, Hotels, Tourist sites at Bonwire and the Rural Development Training College at Kwaso all in the Ejisu – Juaben District Administration in March 25, 2010 as a final opportunity to match theory with practice in their various courses at the Faculty.

FOREIGN COLLABORATIVE/PARTNERSHIPS

Other international linkages have been established by the Department. Some of which include the collaborative partnership between the Department and the University of Leeds and the Royal University of Holloway all in the United Kingdom; The Department of Geography, University of California, Fresno in the USA and the State University of New York (SUNY), Geneseo. Partly, as a result of the collaboration with SUNY Geneseo, the Department is in the process of setting up a Geographic Information Systems Laboratory to service its students at the Post graduate and the Undergraduate levels respectively.

Three (3) State University of New York SUNNY – Geneseo Campus Professors including Prof. Sherry Schwartz and Prof Susan Susan Bandoni Muench visited in November 2009 to deliver Inter-Faculty Lectures. Prof. Sherry Schwartz topic was ‘Educating Active Democratic Citizens through Positive Self-identity. Case study of the Ga’. On the other hand Prof. Susan Bandoni Muench spoke on “The Need for a Global Emphasis in Science Education”.

Prof. Jennifer Rogalsky the Director of Urban Studies program of SUNNY Geneseo worked in the Department of Geography and rural Development as a Visiting Fulbright scholar to lecturer for the second semester of 2010 in GEOG 366: Gender and Development and conduct research on the topic: “Coping mechanisms of women in the informal Economy of Kumasi and Accra, Ghana.

A process of initiating another linkage with the University of Delaware U.S. A. for the Culture and Tourism Programme to help develop our Hospitality section of our Tourism programme has started.

FUTURE PROJECTIONS

The Department is currently being housed in the already congested Social Sciences Building, a situation which has in diverse measures affected efficiency. It is the hope of the Department to see itself in more spacious office accommodation.

The Department also hopes to enhance its research drive to a level that will facilitate the rapid promotion of members. Related to this, all non-PhD holders would be encouraged to enrol for their PhDs in the next three years.

We hope to set up and operate, to aid teaching and research the proposed Geographic Information Systems Laboratory by the next academic year. It also envisaged that the practical dimensions of the various courses will be enhanced through frequent field works and case study methodologies.

The Department intends to offer improved/modified and upgraded demand-driven courses on full-time, part-time and through distance education modules.

In conclusion, in spite of the staff constraints in areas of office space and other teaching equipment, and the pressures of increased academic work load on members, the Department of Geography and Rural Development is poised to maintain the status quo in the years ahead, as one of the dynamic and progressive Department’s in the Faculty of Social Sciences in the College of Art and Social Sciences.

RESEARCH, CONFERENCES AND SERVICE BY FACULTY

Professor Dr. Dr. Daniel Buor

Ongoing Research

Knowledge and perception of HIV/AIDS and attitude towards sex among unmarried women (20-25) in the Kumasi Metropolis, Ghana: A Spatial Perspective

One-and-a-half decades of fertility change in Ghana: Evidence from the Ghana Demographic and Health Surveys (1988-2003).

Conference Paper

“The relative effect of distance in the utilisation of health services in Ahafo Ano District, Ghana”, Presented at the Annual Meeting of Association of American Geographers held at Omni Shoreham Hotel, Washington DC, 14th to 18th April 2010.

Service

Reviewed papers for the following Journals:

- Social science and Medicine
- Aids and Behaviour
- International Journal of Equity in Health

Served as External Examiner for the following institutions:

- University of Ghana...Institute for African Studies
- University of Cape Coast...Departments of Geography and Regional Planning;
- Department of Tourism and Hospitality Management
- Central University College: Assessed papers for promotion
- University for Development Studies: assessed papers for promotion.

Mr. Joseph Koomson (Lecturer)

Services

- Head of Department (Geography and Rural Development) August, 2009 to Date
- Ghana Geographical Association – First Vice President, August, 2009 to Date

On-Going Research

Growing Ghana's Economy through the SME s: Case study Kumasi Metropolis

The Socio-Economic and Environmental Implications of Ghana's Oil find, case study of Cape Three Points.

The Spatial Analysis of the P.S.I. since the year 2001. Case of the Northern Sector of Ghana.

Revamping Ghana's Industrialization through the Gateway Projects. The case of Boankra Inland Port in the Northern Sector of Ghana

Workshops/Seminars Attended

Participant, Workshop on Publishing in Scholarly Journals, KNUST Pharmacy Conference Room, College of Health Sciences, KNUST – Kumasi, 2009.

Participant, G.G.A. Executive Meeting, University of Cape Coast November 13, 2009

Participant, Institute of Distance Learning Course Writers Workshop. 29th January– 3rd February, 2009 at Nimak's Hotel Agona Ashanti.

Mr. Aristotle A. Nikoi (Lecturer) (On Contract)

Service

Member, Ghana Geographical Association (GGA)

On-going

Health and socio-economic developmental effects of pollution and degradation of coastal lagoon ecosystems in Ghana: a comparative study of riparian communities of the Klottey and Kpeshie lagoons in Accra: September 2008/2009 (On-going)

‘Sodom and Gomorrah’: environmental pollution and socio-economic problems of a mis-located shanty town in Accra: 2008/2009. (On-going)

Effects of residential housing crisis in Accra: the case of streetism and outdoors sleeping in Central Accra: 2008/2009. (On-going)

Effects of pollution of rivers in urban areas on health and socio-economic development of residents in riparian communities: the case of the Sisan River in Kumasi: 2006 to 2007/8 (On-going)

Urban-based industrialization and environmental pollution in Ghana: views on health effects from a major industrial area in Kumasi: 2007/2008 (Being completed).

Effects of hydrological hazards in Ghanaian cities: effects of incidence of annual floods on life, property and socio-economic activities in riparian communities in the Aboabo River basin, Kumasi: 2006. (Being completed).

Mr. Alex Yao Segbefia (Lecturer)**Service**

Member, Ghana Geographical Association (GGA)

Research Papers Awaiting Publication

Segbefia, A. Y. (forthcoming) “Perceptions of Poverty amongst Crafts Workers and Implications for Pro-Poor Tourism Development in Ghana.”

Segbefia A.Y and Yankson, P.W.K (forthcoming). Local and Global Threats to Craft-based Livelihoods in Ghana.

Segbefia, A.Y and Asiedu, A.B. (forthcoming) “Livelihood Insecurity and Coping Mechanisms amongst Crafts Workers and Implications for Pro-Poor Tourism Development in Ghana”.

Segbefia, A.Y and Buame, C.K (forthcoming) “Micro/Small-Scale Crafts Enterprises and Tourism Development in Ghana”.

On-going Research Activities

- The Cultural, Tourism and Poverty Reduction Policy Frameworks and Crafts Production as a Pro-Poor Tourism Development Strategy in Ghana
- Carrying capacity as a tool for managing educational facilities in Ghana.
- Stress, Leisure and Recreation in Higher Educational Institutions (HEIs) in Ghana.
- Assessing the Viability of the Presidential Special Initiatives (PSIs) in Ghana.
- Effects of imported furniture on local Micro / Small-Scale Enterprises (SMEs) in Ghana.
- Streamlining Destination Inspection Operations in Ghanaian Ports: Current situation and the way forward.
- Implications of sex tourism on disease occurrence and poverty in Ghana.

- Women participation in governance in Ghana: ministerial appointments from the first republic to fourth republic
- Women participation in local governance (Metropolitan, Municipal and District Assemblies)
- The use of Information Technology and ICTs in Two-Star Hotels in Ghana.

Presentations at Workshops / Seminars

Participant, Workshop on Publishing in Scholarly Journals, KNUST Pharmacy Conference Room, College of Health Sciences, KNUST – Kumasi, 2009.

Felix Asante (Lecturer)

Services

- Executive member (KNUST Representative), Ghana Geographical Association (GGA)
- Faculty Examinations Officer, Faculty of Social Sciences, KNUST

Presentations at Conferences/Workshops/Seminars Attended

Appiah, D.O & Asante F.(2009). “*Adaptation to climate change and variability: the case of subsistence Farmers in the Asawase and Apromase in the Ejisu-Juaben Municipality*” Presented at the Ghana Geographical Association Annual Conference on the theme: “Fifty years of Geography and National Development” on the topic held from the 5th—8th August 2009 at the Sasakawa Centre in the University of Cape Coast, Ghana.

Mr Kabila Abass (Lecturer)

Service

- Member, Ghana Geographical Association (GGA)

Proposed Research

- Problems of Domestic Water Supply in the Kumasi Metropolitan Area
- National Health Insurance Scheme (NHIS) and Utilisation of Health Service in the Kumasi Metropolitan Area.
- Population growth and waste management Problems in the Kumasi Metropolitan Area

Conferences/Workshops/Seminars attended

Participant, Institute of Distance Learning Course Writers Workshop. 29th January– 3rd February, 2009 at Nimak’s Hotel Agona Ashanti.

Dr. (Mrs.) Charlotte Monica Mensah (Lecturer)

Services

- Executive member (National Treasurer) Ghana Geographical Association (GGA)
- National Treasurer of Ghana Geographical Association (GGA)
- Counsellor, Tutor, Patroness of KNUST Social Sciences Christian Fellowship.
- Patroness of Ghana Fellowship of Evangelical Students (GHAFES)

Proposed Research

The use of Traditional Herbal Medicine in the Health Care Delivery System in Rural Communities in the Mampong Ashanti Area with Dr. (Mrs.) Eva Tagoe-Darko.

The Role of Itinerant Drug Vendors in the Health Care Delivery System in Kumasi with Mr. Abass Kabila

Presentations at conferences/workshops/Seminars attended

Participant, Workshop on Publishing in Scholarly Journals, KNUST Pharmacy Conference Room, College of Health Sciences, KNUST – Kumasi 17 – 18, 2009.

Participant, Institute of Distance Learning Course Writers Workshop. 29th January – 3rd February, 2009 at Nimak's Hotel Agona Ashanti.

Mr. Divine Odame Appiah (Lecturer)**Service**

- Fellow, the Energy Center, KNUST
- Member, Ghana Geographical Association (GGA)
- Examinations Officer, Department of Geography & Rural Development
- Chairman, Odum Methodist Church Co-operative Credit Union, Kumasi

Proposed/Ongoing research

- A Study of significance of terrace materials in fluvial environment: the case of Pawmpawm River Channel, Ghana.(Ongoing).
- Socio-economic effects of mining on community development in Ghana Project with Professor Raymond Bush, University of Leeds, (Ongoing).
- Enhancing Sustainable Rural Livelihoods in forest fringe communities; a historic rhetoric? (On-going).
- Environmental Impact Assessment; Perception of Communities Affected by Mining in Ghana (Proposed).
- Rainwater Harvest: the challenges and prospects in urban and peri-urban settings in the Kumasi metropolitan area (DGRD staff collaboration)(Proposed).

Presentations at Conferences/Workshops/Seminars Attended

Participant, Workshop on Publishing in Scholarly Journals, KNUST Pharmacy Conference Room, College of Health Sciences, KNUST – Kumasi 17 – 18, 2009.

Appiah, D.O & Asante F. (2009). *“Adaptation to climate change and variability: the case of subsistence Farmers in the Asawase and Apromase in the Ejisu-Juaben Municipality”* Presented at the Ghana Geographical Association Annual Conference on the theme: “Fifty years of Geography and National Development” on the topic held from the 5th—8th August 2009 at the Sasakawa Centre in the University of Cape Coast, Ghana.

Appiah, D.O (2009). Participant, Fire Safety Workshop Organised by the Ghana Fire Service from the 22-26th June 2009 at the Old Laundry, KNUST, Kumasi.

Appiah, D.O (2009). Resource Person and Coordinator of PACKAGE YOURSELF SEMINAR career guidance and counselling for final year undergraduates 5th may 2009 CCB Common Auditorium.

Appiah, D.O (2009). Participant in the Meetings on the Proposal for the Establishment of a Competence Centre for Development Cooperation on Renewable Energy and Sustainability; From 28th march – 4th April, 2009, University of Flensburg, Germany.

Appiah, D.O (2009). Participant, Institute of Distance Learning Course Writers Workshop. 29th January – 3rd February, 2009 at Nimak's Hotel Agona Ashanti.

Ms. Lawrence Pokuah-Nimo (Lecturer)

Service

Member, Ghana Geographical Association (GGA)

Proposed/Ongoing Research

- Hospitality Industry Turnarounds: An assessment of Visitor Satisfaction and Experiences in Hotel Establishments in Kumasi Metropolis. (Proposed)
- The art and Employment: case study of Selected Ghanaian festivals. (Proposed)

Presentations at Conferences/Workshops/Seminars Attended

Participant, Workshop on Publishing in Scholarly Journals, KNUST Pharmacy Conference Room, College of Health Sciences, KNUST – Kumasi 17 – 18, 2009.

Mr. Emmanuel Kofi Garsonu (Lecturer)

Membership of Professional Bodies

Member, American Congress on Surveying and Mapping

Member, British Cartographic Society

Presentations at Conferences/Workshops/Seminars Attended

Participant, Workshop on Publishing in Scholarly Journals, KNUST Pharmacy Conference Room, College of Health Sciences, KNUST – Kumasi, 2009.

Dr. Dacosta Akwasi Aboagye

Service

Member, Association of American Geographers (Student Member)

On-going/In Review

The Political Ecology of rural Tourism Development in Ghana, International Journal of Tourism Research, John Wiley & Sons. Inc.

Dr. Prince Osei-Wusu Adjei

Membership of Professional Body

Member, Ghana Geographical Association (GGA)

Presentations at Conferences/Workshops/Seminars Attended

Presenter: ODI-UNICEF Conference on the global economic crisis-integrating Children in the policy responses – London, 9th -10th November, 2009

Presenter: 5th International Conference on Children and Youth in Mena Cities Reintegration of Children in Education and Rehabilitation of Youth for Labour Market, 6th – 8th July, 2009, Aleppo, Arab Republic of Syria

Presenter: 2nd Postgraduate Research Conference, KNUST, Kumasi: Achieving the MDG's in Ghana: Research and Networking as Essential Tools; 4th March, 2009.

Ongoing research (On Review)

Understanding Poverty from Within: Perceptions, Manifestations and Coping Strategies of the Rural Poor in Ghana.

Linkages between Poverty, the built environment and Health on Rural Ghana: The Role of Housing Poverty and Sanitation on Disease Occurrence

The Role of Mining Activities on Poverty and Environment in Rural Ghana: Situational Analysis of the Amansie West District.

Impact of Non-governmental Organisations in Rural Poverty Reduction in the Ejura-Sekyedumose District of Ghana.

DEPARTMENT OF HISTORY AND POLITICAL STUDIES

INTRODUCTION

The Department of History and Political Studies in the Faculty of Social Sciences, College of Art and Social Sciences, KNUST, has organized a series of activities over the past academic year. These included field studies, research retreats, conferences, seminars and workshops. In most of these the students played a central role.

CONFERENCES, RETREATS, SEMINARS AND WORKSHOPS

Senior Members of the Department attended conferences, seminars, retreats and workshops in the course of the year. The Department organised a Research Retreat at the NODA Hotel at Fumesua near Kumasi from 29 to 30th January 2009 where such important decisions as commencement of two Departmental Projects; “The Training of Traditional Leaders in Principles of Governance Systems” and production of a book on “the Political History of Ghana 1852 to the Present” were taken. Dr. Wilhelmina J. Donkoh attended the International Seminar on “Africa, Europe and the Americas 1500s-1700s” sponsored by the Omohundro Institute of Early American History in the USA and the Institute of International and Advanced Studies (IIAS) at the IIAS in Accra from Monday 13th to Saturday 25th July 2009. She presented a paper titled, “Slavery, Slave Trading and Memories: A Reconstruction of Social History in Asante, Sewhi and Bono Ahafo Areas”. She also attended the International Conference on Heritage Matters in Accra from Monday 14th to Friday 17th December 2009 at the Accra International Conference Centre where she presented a paper titled, “Heritage, Economy and Political Control: Financing a Modern Monarchy Through Reinvention of Traditional Measures in Asante”. Mr. Vincent Dodoo attended the World Academy of Science, Engineering and Technology (WASET) Conference at the Holiday Inn Hotel in Montparnesse, Paris, France from 24th to 26th June 2009 where he presented two papers titled, “The Tradition of Cooperation in the North Atlantic” and “Commune to Commune and the Evolution of the Cooperative State”, respectively. The two papers have subsequently been published in the Proceedings of WASET, vol. 54, Section D, pp. 956-966 and pp. 941-955, Paris, 2009. Mr. Mohamed Abass attended a Stakeholders Consultative Forum on Accelerated Decentralisation in Ghana at the Glamosey Hotel in Sunyani on 10th November 2009, where he presented a paper titled, “Twenty Years of Decentralisation Local Governance and Assembly System in Ghana”.

EDUCATIONAL TRIPS

The Final Year History students were sent on two field trips in October 2009 and February 2010 to the Greater Accra and Eastern Regions as well as the Takyiman Traditional Areas. The theme of the outreach programme was “The Past Speaking to us about the Present”. The students had a hands-on opportunity of studying the social and economic systems of selected communities in Ghana by visiting historic sites like the slave plantation at Sesame, the Wulff’s Residence near the Christiansborg Castle, the Tanoboase Sacred Grove and interacting with traditional leaders. The students wrote and submitted reports that revealed the knowledge acquired through these trips.

The Political Studies Students' Association organized an educational visit to Accra in November 2010. Among other places, they visited Parliament House, Ghana Broadcasting Corporation and the residences of former Presidents Jerry John Rawlings and John Agyekum Kufour. Students had the opportunity of interacting with Members of Parliament, key personalities in broadcasting and the two former Presidents and learnt firsthand from all these people the particular views and insights into some of the major political developments in Ghana and even globally.

CAREER SEMINAR

The Department sponsored a career seminar for all History and Political Studies students. Resource persons drawn mostly from the Department shared their experiences with students on how to prepare for the job market, career alternatives available to graduates from the two disciplines, emerging trends in the job market for young graduates and how to capitalise their potentials and opportunities.

EQUIPMENT FOR TEACHING AND LEARNING PURCHASED

The Department purchased five printers and three UPS to enhance the preparation of course materials. Rare books were also acquired to facilitate teaching. Two LCD Projectors to be procured.

DONATIONS, GRANTS AND COLLABORATIONS

The Department received book donations from two sources:

- Two copies of Professor Albert Awedoba's current book, *An Ethnographic Study of Northern Conflicts*
- A large collection of rare historical books from the family of the late Mr. Sefa-Dwamena, former Music Master of Opoku Ware School.

The Department has also been offered the Peggy Appiah Prize for History Students through its collaboration with the Accra-based Centre for Intellectual Renewal (C.I.R) headed by Mr. Ivor Agyeman-Duah, media practitioner and former Ambassador.

ZAIN AFRICA CHALLENGE

Dr. Wilhelmina J. Donkoh was appointed Coach for the KNUST team for the Zain Africa Challenge International Competition. The team was very successful at the local level in the maiden edition of the competition in Ghana and was therefore one of the four University teams that represented country in the International Tournament at Kampala in February 2009. In November 2009, another team also coached by Dr. Donkoh emerged the overall best team from Ghana and represented the University and the country in Kampala in February 2010.

CONCLUSION

The Department has had an active and fruitful academic year. Both Senior Members and students have participated in academically challenging and rewarding programs in the course of the year and anticipate that the trend will continue in the coming year.

DEPARTMENT OF MODERN LANGUAGES OVERVIEW

The Department has two sections running two undergraduate programmes leading to Bachelor of Arts (French) and Bachelor of Arts (Akan) and a graduate programme in French. The Department is still and actively engaged in the areas of teaching and research at both undergraduate and graduate levels. In line with the University's corporate strategic objective which is to maintain high academic standards in teaching and learning as well as research, the Department, during the academic year

under review, has been exploiting the possibility of establishing an inter-university PhD programme in order to contribute to a better use of resources in higher institutions through the mobility of lecturers and researchers from partner institutions.

During the year under review, the shortfall in staff strength as well as the problem of ageing staff continued to be experienced, hindering the expansion of programme in the Department. In addition, lack of adequate PhD holders in the Department has been the department's main concern, making teaching and supervision in the graduate level quite challenging. The Department has therefore embarked on a vigorous recruitment drive from both corporate institutions and other universities. Again the Department has put in place other strategies for quick and effective completion of PhD programmes in the Department which is yielding a good result.

Inadequate lecture halls, office space for both teaching and administrative staff, inadequate equipment continue to pose challenges to the Department.

However, both academic and administrative staff fulfilled quite adequately their main obligations with respect to administrative work, teaching and research and publications as well as service to the university community.

The Department envisages a new approach to its programmes in the coming year to make the Department a centre of excellence in language teaching and learning as well as the dissemination of knowledge of language and culture.

Plans are far advanced to introduce a Chinese language as another modern language, and a translation bureau in the Department. As part of the preparatory process for the smooth take off of the Chinese language, the Department has started a basic Chinese language course for staff and students of the university community. Patronage for the basic Chinese proficiency course at the Department was very good. A total of 200 students and staff registered for the course.

The department continues to enjoy high patronage of the learning of French as a service course. The number of departments enjoying this facility has jumped from 19 to 22 in the year under review. Akan as a service course is gradually making an impact. It is being offered as a service course at the School of Medical Sciences, KNUST.

STAFF DEVELOPMENT

Two lecturers, Mr. Ebenezer Oteng-Preko and Mr. Melvin Nartey, are still on various PhD programme in Linguistics and Literature respectively at the Department of Modern Languages, KNUST, and the Department has put in place a plan for the early completion of their programme to augment the status of the number of PhD holders in the Department

DONATION

The Department continued to enjoy various forms of assistance from various stakeholders. The Department received a number of French Literature text books from the final year French students of the year under review. The books valued at three hundred Ghana cedis (GH¢300.00). The gesture is to enhance teaching and learning of the French language.

INCOME GENERATION

Proposal for the establishment of a translation Bureau and proficiency courses in French and Akan for communication as well as Chinese, for the university community and interested individual at the Department, has been presented to the appropriate authorities for consideration.

STUDENT ENROLMENT (French section)

LEVEL	Male	Female	Total
100	62	114	176
200	31	50	81
300	30	49	79
400	21	39	60
MPHL 1	10	3	13
MPHIL 2	7	1	8
PHD YR. 1	-	1	1
PHD YR. 2	-	-	-
PHD YR. 3	-	-	-
PHD YR. 4	2	-	2
PHD YR. 5	2	-	2
TOTAL	165	257	422

SERVICE COURSES (French and Akan)

	Total Number of Departments benefiting	Total Number of Students
French for Communication	22	1700
Akan for communication	1	23

STUDENT ENROLMENT (Akan section)

LEVEL	Male	Female	Total
100	43	34	77
200	33	23	56
300	30	20	50
400	23	19	42
TOTAL	129	96	225

RESEARCH INTEREST/ ON-GOING RESEARCH ACTIVITIES**Mr Dickson Pimpong**

- Sémiotique de l'image: Une approche communicative nouvelle en FLE
- The teaching of French for Business students
- Le Conte: Outil didactique en français Langue étrangère.

Mr Joseph Nsiah

- Évaluation de la traduction en milieu universitaire
- Pour une Approche Communicative de l'enseignement de la littérature.
- The cultural, literary and linguistic significance of Adinkra symbols(in collaboration with Dr. Charles Marfo and Prof. K. Opoku-Agyeman

Prof K Opoku-Agyeman

- The cultural, literary and linguistic significance of Adinkra symbols (in collaboration with Dr. Charles Marfo and Mr. Joseph Nsiah)
- *Langues nationales, Transnationales et Internationales- Coexistence avec le français Paper read at Lome Conference, August 2008*
- Traditional Science: A case study of Akan myths and Religions, Proceedings of conference on Religion and Science, KNUST
- Science and Literature: The Thin line of Demarcation

- The Use of symbols as a vehicle for communication among Akans.
- Changing Fortunes of the Praise-singer (**with Mrs. P. Mireku Gyimah**)

Prof. Albert Owusu-Sarpong

- Sémantique en profondeur ; étymologie ; what is meaning of meanings
- Roland Barthes et Foucault et la fonction non-neutre des textes.

National Assignment

October 2001- February 2009 - Appointed Ghana's Ambassador to France with concurrent accreditation to the Vatican, Portugal, Spain, UNSESCO and Francophonie.

Dr Albert Yao Yegblemenawo

- French Methodology

Miss Solace Yankson

- Syntax & semantics
- Sociolinguistics
- Discourse Analysis
- Phonetics & Phonology

Mr. Melvin Nartey

- Narratology
- Tiresias et Nicole Loraux dans la lutte pour l'émancipation de la femme

Mr. Ebenezer Oteng-Preko

- Language Typology in the Ghanaian novel
- The new emerging role of the Ghanaian woman in the Churches
- Politique Linguistique au Ghana: Le Rôle des Langues ghanéennes dans le développement

Dr. Lawrence Tufuor

- *Langues nationales, Transnationales et Internationales- Coexistence avec le français Paper read at Lome Conférence, August 2008*
- *Dualism in Language and its implications for development:* In collaboration with Professor K. Opoku-Agyeman

Dr.(Mrs) Lebene Adzo Tettey

- French methodology
- Oral literature
- Le conte : document authentique pour l'enseignement et l'acquisition du FLE.
- L'apprentissage de FLE à travers les contes dans une perspective interculturelle.
- Le français sur objectifs spécifiques : la clé de voûte dans l'enseignement et l'apprentissage du français langue étrangère.
- La motivation : une variable indispensable pour l'apprentissage du FLE dans un milieu exolingue.

Mr. Micheal Damoah

- Sémiotique, narrative et connotative
- La pragmalinguistique: une approche des actes de langage
- Analyse du discours
- Littérature comparée : une nouvelle approche de l'image de l'autre

- Etude des paratextes dans **En attendant le vote des bêtes sauvages** d’Ahmadou Kourouma.
- Oralité et narration romanesque dans **En attendant le vote des bêtes sauvages** d’Ahmadou Kourouma.
- La représentation du cadre spatio-temporel dans **Roman d’un Spahi** de Pierre Loti.
- L’Espace dans le récit de voyage.
- L’image et les formes de représentation du Noir dans le récit de voyage, cas de **carnets de route en cote d’Ivoire** de Georges Thomann.

Book Chapters

2004: *Le diable perceptif dans les détails sensori-moteurs anticipatoires*, K. Adu Manyah, R. Sock, B. Vaxelaire, V. Ferbach-Hecker, J.-P. Roy, F. Hirsch, A. Asci, M. Canault & C. Dubois, in Sock, R. & Vaxelaire, B. (éds), *L’anticipation à l’horizon du présent*, Hayen, Mardaga, pages 141-158.

CONFERENCE, WORKSHOPS AND SEMINARS ATTENDED

Dr. Charles Marfo (2009) Colloquium 2009: Language of the Volta Basin, at University of Ghana, Accra.

Paper presented: The Structure of the Akan Compounds: Some prosodic Structural Insights.

Dr. Albert Yegblemenawo : **Septième colloque interuniversitaire sur la coexistence des langues** en Afrique de l’Ouest. Ouagadougou 20-22 octobre 2009

Paper presented : *La Chanson au service de l’acquisition des paramètres prosodiques et des marqueurs sociaux d’une langue étrangère : le cas du français.*

Colloquium on Teaching of Language Culture in West Africa held at Cape Coast.

Papers Presented: La pédagogie des grands groupes and « L’utilisation du contes pour la didactique des langues étrangères.

Miss Solace Yankson : (2009) Retreat, Women’s Ministry of Charismatic renewal on 16th May 2009 at Kumasi.

Paper presented: *The Qualities of a Christian woman*

Dr. Lawrence Tufour:

Paper presented at Inter-University Conference for Doctoral Studies – 7-12 September, 2009, UEW

Dr.(Mrs) Lebene Adzo Tettey

Conference, Français sur Objectifs spécifiques : parier sur l’ouverture, UFC, Besançon, 2009.

Mr. Micheal Damoah

Seminar for the Launching Of Activities of the Inter-University Conference for Doctoral Studies, (University of Education, Winneba-UEW-Ghana) from 7th to 8th June, 2009.

Dr. Kofi Adu Manyah

- University of Toronto & York University, Toronto, Ontario, Canada, May 06 to May 08, 2010: 41st Annual Conference on African Linguistics (ACAL 41).
- Strasbourg, France, December 10, 2009: Seminar on Clinical Phonetics.
- Strasbourg, France, November 20, 2009: From Perception to Comprehension of a Foreign Language/De la perception à la compréhension d’une langue étrangère
- Montpellier, France, June 5th, 2009: International Workshop - Nasal 2009.

SERVICE TO COMMUNITY

The Department continues to offer functional French to almost all the various Departments in the university through which students who are outside the regular French programme in the Department and who desire to learn French could do so for specific purposes. The staff below from the Department continued to provide valuable services to the university and the community at large.

Mr Dickson Pimpong

- Head of Department, Department of Modern Languages, KNUST, Kumasi
- Secretary, PEMEF Welfare, Church of Pentecost, IPT Assembly.
- Elder, Church of Pentecost, IPT Assembly.
- Member, District Committee on Home Cells, Church of Pentecost, Kwadaso North District

Mr Joseph Nsiah

- Chief Examiner and Moderator in French with the West African Examination Council (WAEC) for Senior Secondary Schools.
- Resource person for the Regional Center for the Study of French (CREF), Kumasi.
- College of Art and Social Sciences representative on the Central University Admission Committee.
- Member, Committee on affiliation of Ghana Telecom University College to KNUST.
- Local Preacher, Methodist Church of Ghana.
- Moderator for French, Kumasi Polytechnic
- Moderator for French, Regent University College, Accra. 2008 and
- Chief Examiner and Moderator in French with the West African Examination Council (WAEC) for Senior Secondary Schools. (2005 – 2008).

Prof. K Opoku-Agyeman

- Chairman, Watchdog Committee, North Patasi, Kumasi.
- Member, Committee on affiliation to KNUST of Regent's University College, Dansoman, Accra.
- Member, Committee on affiliation of Garden City University College to KNUST
- Member, Committee on Affiliation of University College of Science and Technology, Budumbura, to KNUST.
- Translator: Translated proceedings of the Standing conference of African University Libraries, Western Area (SCAULWA), 2007 in collaboration with Prof. K. Opoku-Agyeman and Mr. Joseph Nsiah.

Dr Albert Yao Yegblemenawo

- Resource person for the Regional Center for the study of French (CREF), Kumasi.
- Member of the Executive Council of the Ghana Association of French Teachers (GAFT).

Mr Ebenezer Oteng-Preko

- Translator and interpreter
- Member and Secretary of Session, Presbyterian Church, Ahinsan Estate.
- Member, educational Committee, Presbyterian Church of Ghana, Atonsua District

Miss Solace Yankson

- Member/Secretary, PPAG, Boadi Branch

- Secretary, Young Adult Fellowship, Presbyterian Church of Ghana, Christ Congregation, KNUST, Kumasi.
- Member, Committee to review B.A(Akan) programme
- Member, Committee work on the introduction of a third modern language at the department of modern languages, KNUST, Kumasi
- Member, Committee for the enhancement of performance of the Akan and French students at KNUST could be enhanced.

Dr Charles Marfo

- Chairman, Social Science Faculty welfare Association
- Member, Faculty Board, Faculty of Social Sciences.
- Coordinator, courses in Basic Chinese programme
- Chair(Board) Christain Business Network International (CBNI) Credit Union
- Chair; House of Faith Welfare
- Deputy Secretary; Osei Kyeretwie Secondary school Old students Association
- Panel member; Fox FM Morning show
- Panel member; Hello FM '*Bo ho bio programme*'
- Chair; House of faith Men's fellowship

Dr. Lawrence Tufour

- Translator: Translated proceedings of the Standing conference of African University Libraries, Western Area (SCAULWA), 2007 in collaboration with Prof. K. Opoku-Agyeman and Mr. Joseph Nsiah.
- External Examiner (for French Language at Legon, Cape Coast & UEW currently
- Member of the Board of Directors, Kaaseman Rural Bank, Sefwi/Kaase, W/R
- Active member of Non-Aligned Group, KNUST Catholic Church

Dr.(Mrs) Lebene Adzo Tettey

- Co-founder and resource person, Pathfinders Educational Trust
- Translator / interpreter
- Patron, Global Evangelical Students & Associates Ministry(GESAM)
- Counselor & Women's leader, Sanctuary of Praise, Global Evangelical Church
- Bible Study Leader, Aglow International

Mr. Micheal Damoah

- Member of the Committee for the Enhancement of Performance in French, Akan and English.(7th-8th January, 2010)
- Coordinator for the Association of French Students (KNUST)

CHALLENGES

- The Department of Modern languages was and is still confronted with the problem of office space inhibiting the professional work of lecturers.
- The Department lacks enough space for staff offices and equipment. This situation in the department hinders smooth academic work.
- The Year Abroad programme continues to suffer a lot of uncertainties.
- Lack of space for postgraduate students, working against effective research work.

EXPECTATION AND PROJECTIONS

The expectations for the next academic year are that:

- More teaching and technical support staff would be recruited to avoid the reliance of part-time, and the over-burden of some lecturers especially in the Akan section.
- Improvement of office space in the department.
- A more spacious room for French language laboratory to accommodate more ultra-modern multi-media equipments.
- A well equipped and furnished lecture theatre for graduate studies at the department

CONCLUSION

On the whole, the Department of Modern Languages has been able to work assiduously to meet its core responsibilities in the core areas of Teaching, Research and service to the University and the larger community. We hope, as a body, to continue to improve in all these areas and be of greater service to humanity in the years ahead.

DEPARTMENT OF SOCIOLOGY & SOCIAL WORK VISION AND MISSION

With its two distinct but complimentary disciplines, the Department has a vision to promote excellence in Social Sciences for the socio-economic development of Ghana and the World Community at large. The Department hopes to run two degree programmes in Sociology and Social Work and proposals on the split have been approved by the College Board. The Mission of the Department focuses on training and the production of high level human resource capable of applying knowledge and purposeful research that is apt and relevant for the Ghanaian environment and the International community at large.

UNDERGRADUATE PROGRAMME

The Department offers a 4-year Sociology and Social Work Degree with an award leading to BA Sociology and Social Work (Hons) Degree. With the current student population of 790 the Department is arguably one of the largest in the University. The breakdown of the population is as follows:-

DEPARTMENT	YEAR ONE	YEAR TWO	YEAR THREE	YEAR FOUR	TOTAL
SOCIOLOGY AND SOCIAL WORK	177	178	218	217	790

GRADUATE PROGRAMME

The first batch of students for the MA in Sociology Programme was admitted in the 2008/2009 academic year. The total number currently stands at fifteen (15).

RESEARCH ACTIVITIES

Kojo Wireko-Brobby

- Sociology as a Way of Life. A focus on the 3 Major Perspectives and their practical application to life. (On going)
- Sociology and Christianity at Cross roads. (On going)

Kofi Osei Akuoko

- Supervisory Style, Workers Morale and Productivity in selected Organisations in Ghana. Published in Review African Administrative Studies Journal, No. 71.
- Effects of Mining Pollution on the People of Wassa West District of Ghana. (On-going)
- Supervisory Style and Workers' Behaviour in selected Organisations in Ashanti Region, Ghana. (On-going)
- Supervisory Style and workers' Behaviour in Selected Organisations in Greater Accra Region, Ghana (On-going)
- Effects of Organisational practices on Sexual Abuse of Female Students in Educational Institutions; A study of selected Senior High Schools in the Ashanti Region of Ghana. (Collaborative Project with Prof Caren Frost and Dr. Prospero Moises both of the College of Social, University of Utah). (On-going)
- Understanding of Attachment and Relationships among Childcare Staff and Administrators at the Homes and Orphanages in Ashanti Region (Collaborative Project with Dr. Joanna Bettmann of the College of Social Work, University of Utah, Salt Lake City). (On-going)

Kwadwo Ofori-Dua

- Behind the Box; An Analysis of Mail Theft and Mail Tempering at Mails Office of Sunyani Post Office, 2002-2005. (Completed: Awaiting Publication.)
- The Brain Drain in the Health Sector and its Effects on Health Education and Promotion (On-going)
- Society's Attitude towards Ex-convicts and its Effects on Recidivism (On-going)
- Social Work and Social Care in Ghana: Past Present and the Future.
- Challenges Faced by Women Hawkers along the Streets of Accra and Kumasi. (On-going)
- 'Licensed to Kill': A Sociological Analysis of Carnage on the Ghanaian Roads. (On-going)
- Cross-Cultural Perspective of Domestic Violence, Substance Abuse and Mental Health. (Research paper presented in conjunction with Mr. Peter Dwumah, (KNUST) and Moises Prospero (PhD), University of Utah at Salt Lake City, June 10, 2008)
- Violent Attitudes and Mental Health Symptoms among Mutually Violent Ghanaian Couples; in Journal of Aggression, Conflict and Peace Research, Volume 1 Issue 2, July, 2009
- Developing Field Education: Collaboration between Two Universities. (Research Paper presented at the 27th Annual Conference of Association Baccalaureate Social Work Program Directors on 17th – 21st March, 2010 at Hilton Helton Hotel, Atlanta, Georgia, USA.

Jonas Asamanin Barnie

- Vesting of Lands in the State and Land Administration in the Brong Ahafo Region. (On-going)
- Joking Relationship (Privileged Disrespect) and National Integration: The Case of Seikwa and Sunyani in the Brong-Ahafo Region. (On-going)
- Comparative Study of Welfare Policies in Ghana and U.S. Collaborative Study with Peter Dwumah, Department of Sociology and Social Work, KNUST and Jason Castillo, College of Social Work, University of Utah, U.S.A. (On-going)

Mr. Peter Dwumah

- The Role of Government in the Utilization of Human Capital for National Development. (On-going)
- Sociological Analysis of Street Vending in Ghana (On-going)

- A Comparative Study of the Attachment Relationships of U.S and Ghanaian Undergraduate Students, Collaborative research with Joanna Bettman, College of Social Work, University of Utah. (On-going)
- Comparative Study of Welfare Policies in Ghana and U.S., Collaborative Study with J.A. Barnie, Department of Sociology and Social Work, KNUST and Jason Castillo, College of Social Work, University of Utah, U.S.A. (On-going)
- Domestic Violence and Substance Abuse: Comparative Analysis of Ghana and U.S., Collaborative Research with K. Ofori-Dua, Department of Sociology and Social Work and Moises Prospero, College of Social Work, University of Utah, U.S.A (On going)
- Job Satisfaction among Teachers of Basic Schools in Ghana: Case of Selected Schools in the Kumasi Metropolis. (On going)
- Socio-Demographic Characteristics of Street Hawkers in the Kumasi Metropolitan Area. (On-going)

Rev. Dr. Festus Yeboah-Asuamah

- The Sociological Significance of the National Health Insurance Scheme on Families in Ghana (On-going)
- Measuring Life Stress and Assessing its Impact on Teaching at Kwame Nkrumah University of Science and Technology (On going)

Dr. (Mrs) Francess Dufie Azumah

- Coping with Competing Demands, Gender Differences in Work-Family Conflict.(On-going)
- A Situational Analysis on Women and Gender Equality in Ghana Today.(On-going)
- Victims, Perpetrators and Actors of Gender and Cultural Violence in Ghana (On-going)
- Upholding Women's Rights for Human Dignity. (On-going)

Ms. Harriet Takyi

- Keeping up Appearances: Perceptions of Street Food Safety in Urban Kumasi, Ghana. (On-going)
- Rules Regulating Polygyneous Relationships among the People of Jaman (On-going)
- Private Higher Education in Ghana: Reflections of Professional Practice and Experiential Issues (On-going)

SERVICE TO THE COMMUNITY

Senior Members continue to offer invaluable services to the University and the international community at large in the following capacities:

Kojo Wireko-Brobby

- This is the 15th year of service to Forestry Commission and is also the Chairman of Sub Committee on International and Public Relations.
- External Examiner for Christian Service University. Moderating Questions and Examination Scripts and Submission of Reports: 2006 to 2009.
- Resource person on G.C. Radio since 2000 (“Abrabmunsem”)an Akan programme that analyses Sociological problems into the realm of the religious.

Kofi Osei Akuoko

- Chairman, Yaa Asantewaa Girls' Senior High School Parents/Teacher's Association
- Member, Yaa Asantewaa Girls' Senior High School Board of Governors.

CONFERENCES, WORKSHOPS AND SEMINARS ATTENDED

Senior members attended both local and international conferences, workshops and seminars during the period under review.

Mr. Peter Dwumah

- Course Writers workshop with the Institute of Distance Learning, KNUST at Agona, Ashanti Region. Course Manual Prepared: Introduction to Sociological Thought.
- Prospero M, Dwumah P & Ofori-Dua K (2009), “Violent attitudes and mental health symptoms among mutually violent Ghanaian couples”, Journal of Aggression, Conflict and Peace Research, Volume 1 Issue 2, Pavilion Journals (Brighton) Ltd.
- June 2009 Joint workshop between Department of Sociology and Social Work, KNUST and College of Social Work, University of Utah, USA Venue: Engineering Guest House Conference Hall, KNUST. Participation: Paper presented- ‘Preliminary Analysis of Attachment Relationships of US and Ghanaian undergraduate students’ with Joanna Bettman, College of Social Work, University of Utah, USA.
- June 2009 Collaborative workshop between Department of Sociology and Social Work, KNUST and School of Social Policy and Practice, University of Pennsylvania, USA Venue: Engineering Guest House Conference Hall, KNUST Participation: Participant

Mr. K. Ofori-Dua

Participation in Radio Discussions (Kapital Radio, Kumasi) on Several Topics.

- National Orientation
- Suicide – Causes and Effects
- Prostitution – Causes and Effects.
- Why Do Public Officials Tell Lies.

Workshop For Course Writers in Distance Learning Manual, Organised By The Institute of Distance Learning, KNUST on 29th January – 3rd February, 2009, at Nimaks Hotel, Agona Ashanti

Department of Sociology and Social Work, KNUST and College of Social Work, University of Utah, USA collaborative Workshop, 14th – 19th June, 2009 at the Engineering Guesthouse, KNUST, Kumasi. Paper presented: Social Work in Ghana, Past, Present and the Future.

27th Annual Conference of the Association of Baccalaureate Social Work Program Directors (BPD), 17th – 21st March 2010 at Hilton Atlanta Hotel, Atlanta, Georgia USA

Mr. Jonas Asamanin Barnie

Course Writers’ Workshop with the Institute of Distance Learning, KNUST at Agona, Ashanti Region. 29th January, - 4th February, 2009. Prepared Course Manual. :Social Organization and World Cultures.

International Development Design Summit, Hosted by the Technology Consultancy Center (TCC), KNUST Kumasi presented a paper: Rural Social Structure of Ghana. 7th Tuly – 13th August 2009.

Collaborative Workshop between the Department of Sociology and Social Work, KNUST and the School of Social Policy and Practice, University of Pennsylvania, USA. Participant June 22nd – 26th 2009.

Collaborative Workshop between the Department of Sociology and Social Work, KNUST and College of Social Work, University of Utah, USA. Participant June 14th – 19th 2009.

Mr. Kofi Osei Akuoko

Course Writers Workshop organised by the Institute of Distance Learning from KNUST. 29th January to 3rd February, 2009 at Agona Ashanti. Course Manual Prepared: Social Structure of Ghana.

Rev. Dr. Festus Yeboah-Asuamah

Course Writers Workshop hosted by the Institute of Distance Learning, KNUST. 29th January, to 3rd February, 2009 at Agona Ashanti. Course Manual Prepared: Nature of Social Work.

Ms. Harriet Takyi

March and May 2009 – Resource Person: planning for Retirement, Psychological impact on Disengagement: A social perspective, Organised by Golden star Mining Akyempim, Western Region, Ghana.

COLLABORATION WITH OTHER UNIVERSITIES

The Department continues to enjoy a fruitful collaborative relationship with the College of Social Work, University of Utah, Salt Lake City, USA.

Collaborative relationship with University of Pennsylvania School of Social Policy and Practice, Philadelphia in Developing a Master's Programme in Social Work.

Collaborative relationship with the SUNY-Geneseo Sociology Department .

BENEFACTORS

The Department wishes to express its profound gratitude and appreciation to the Dean, Chair and Vice Chair of the University of Utah, College of Social Work for the generous donation of varied and intellectually stimulating books to the Department.

FACULTY DEVELOPMENT AND RESEARCH

Planned Programmes - PhDs

Four lecturers are preparing to embark upon PhD programmes in industrialised countries. The PhD Programmes would equip the lecturers with the requisite research knowledge to handle our graduate programmes in Sociology and Social Work. Estimated Cost per staff is GH¢20,000.

Six Faculty members have submitted proposals in six (6) sociological areas of interest. Estimated cost of the projects is GH¢36,000.00.

DEPARTMENT OF ENGLISH

INTRODUCTION

The Department of English has over the past year relentlessly held on to its core business of producing specialists in the areas of Literature and Language. It has in addition to its core duty pursued the onerous task of equipping all Year One Students of the University with the basic skills of written and oral communication, topping this up with Literature in English which is aimed at imparting other language skills in Year Two.

TEACHING

At the currently available staff strength of fourteen, the Department has been diligent in the handling of the core duty of Teaching at the Graduate and Undergraduate levels.

The weekly seminar sessions for PhD and MPhil students has re-invigorated the area by prodding the students to work faster than they used to. Thus in the year under review, two PhD candidates

have submitted their theses for assessment and five MPhil candidates are being processed for graduation.

At the undergraduate level, the Department continues to impart skills that would produce veritable expertise in African and European Literatures and in English Language.

RESEARCH

In spite of the challenges, Senior Members of the Department have not relented in their research and publication activities. Mr. F.E. Kofigah is currently undertaking collaborative research with others in the field of literature and the teaching of English at the Basic, Junior High and Senior High School levels, particularly in the areas of reading and use of language.

Mr. Julius Poghyar-Kuutiero's research into *The Folktale: It's Impact on the Socio-cultural Life of the Dagamba* is on-going.

Miss Philomena Ama Okyeso Abakah is still pursuing the PhD as a part-time candidate at the Department. She recently presented a paper at the Departmental Seminars initiated to create opportunities for students and staff to have their ideas reviewed by peers or their mentors. She is still collaborating with Mr. Kofigah to look at the *Expectations, Illusions and Challenges of the Been-tos in Ama Darko's Beyond the Horison* and Ayi Kwei Armah's *Fragments*. She is also looking at the relevance of the study of Literature in a science and technology university.

Professor S.K. Okleme is not resting on his oars even though he is on post-retirement contract. Like Mr. A.A. Amoako, also retired, he is encouraging the younger Senior Members with regard to research by engaging in more research himself. His two works in progress are, *Modern Critical Perspectives on African Literatures – A Collection of Essays* and *The Ghanaian Novel: An Introduction*.

Mr. Peter Awuah-Darteh's work titled *The Search for a National Language The Ghanaian Situation* is on-going.

Mr. K.O.O. Armah is still working on *The English Language in Ghana Today: Street Language and the Move to Nativise the English in Ghana*. Mr. Armah's research into "*Decadence in Freedom*" which is a topological interpretation of Ghanaian Hip-Life Songs is also on-going. He has also ventured into folklore research and is making steady progress in the area.

Mr. E.Y. Akpakli's Folk Tales – *The Artists and Their Works* and "Ghanaianism and Deviant Forms and Steps to Attaining Communicative Competence *are also on-going*."

CHALLENGES

The Department is still faced with the challenges of attracting quality human resource and logistics to carry out its work. In the sharing of resources it is considered one of the smallest but in the performance of its core duties its task is one of the largest in the University. It has embarked upon an ambitious project of motivating staff to pursue self-development.

CONCLUSION

In spite of these challenges, the Department is carrying out its duties with dedication. There is hope that the staff situation will improve next year. This will further relieve staff of some of their teaching load so that they can do more research and service to the community.

CENTRE FOR CULTURAL AND AFRICAN STUDIES

This Centre has a great potential and has a vision that touches every aspect of the university's development. The Centre deals with those aspects of our lives that deals more with visual culture: spatial and gestalt perception, music creation and appreciation, image recognition, perception of the form or style of speech over content, aesthetic appreciation, and visual-pattern recognition that we find in the Arts.

We have since the introduction of formal text education placed more emphasis on the left-brain aspects so as not to neglect or even denigrate the visual arts and the right-brain aspects of our life. Committees were set up to propel the work of the Centre and they include the Performance, MITW and Drum Museum, Research, and Proficiency committee.

STAFFING

The Centre has Four (4) Permanent Senior Members, One (1) Senior Member on contract, Two (2) Senior Members on Part Time, Five (5) Senior Staff, Three (3) Junior Staff and One (1) Casual / Temporary Staff.

RESEARCH WORK

Group Research Work

Lake Bosomtwe Project - The lake without a festival; *Bridging Myth, History, and Science in Response to Socio-Cultural and Tourists' Question*. (18 months).

Individual Research Work

Documentation of the classification, construction process and design of drums in the Akuapem and Ashanti traditional area by **Rev. M. Adi-Dako**.

Erotica and Humour in African Art by **Rev. M. Adi-Dako**. Completed for publication.

General Characteristics of Traditional Visual Art and an Appreciation of an Agona Asafo Funerary Figure by **Rev. M. Adi-Dako**

The Power of Visual Education by **Rev. M. Adi-Dako**. Completed for publication.

Visual Documentation of Festivals in Ghana by **Rev. M. Adi-Dako** and **Miss Joann Pieterse**.

Cultural practices in an era of Globalization by **Mr. Hesper Adesua**. (Ongoing).

Achieving the excellence of musical perception; the KNUST student in view by **Mr. Hesper Adesua**. (Ongoing).

Culture in Education by **Rev. Samuel Kojo Enninful**. (Ongoing)

Marrying our Enemies and divorcing our friends: A Socio-Religious dilemma in the Kumasi metropolis by **Mr. Anthony Aidoo**.

The Socio-Moral Implication of Gifts and gift-giving in Akan society, by **Mr. Anthony Aidoo**

Mythical and Legendary Origins of Akan Festivals, by **Mr. Anthony Aidoo**

CONFERENCES AND WORKSHOPS

Strategies for Teaching Children drama, Paper presented at the Workshop for District Cultural Coordinator's Conference, Ashanti by Mr. Anthony Aidoo.

Annual Residency and Ceramics workshop with Studio Mate, Chicago, USA, from the 2nd to 4th November. Attended by all members of staff of CeCAST and students from the Industrial Art Department.

Book on David Asomaning's collected plays Vol1, launched at Independence Hall during the SRC week, 8th November, 2009.

A night of African touch- Traditional Drumming and Dancing and contemporary dance techniques workshop for students.

CeCAST participated in 2nd International Conference on African Culture and Development from 15th to 18th of November 2009.

INFRASTRUCTURAL DEVELOPMENT

A completed traditional drum and Arts exhibition hall to be opened by the 1st of Feb. 2010.

COLLABORATION WITH INDUSTRY

- Collaboration with Studio Mate for annual Cultural & Ceramic workshop.
- Collaboration with Prof. Dennis Miller from the North Eastern University, Boston-Massachusetts to teach a course in the use of modern software for music technology and animation
- Collaboration with Springverve and Department of English for the dramatization of English literature set books studied by all second year students
 - First Semester 2009/2010 Efo Kojo Mawugbe's play "in the chest of a woman".
 - Second Semester 2009/2010 "Money Galore" novel by Amu Djoletto.

INCOME GENERATION

- Production of musical instruments – Traditional Drums, Atentenben, Xylophones and Mmenson by the Musical Instruments Technology Workshop (CeCAST).
- Private tuition in Keyboard skills, Guitar lessons, Atenteben, drumming and dancing and Sound Engineering.
- Performances – Music, Dance and Drama.

EXTERNAL EXAMINER

For the first time the Centre received the services of an external examiner in the Person of Prof Martin Owusu from the School of Performing Arts, Legon. He began on the 21st of August, 2009 by meeting with all the members of the teaching staff at the Centre.

NEEDS/ CHALLENGES

- Internet for research and linkages with Institutions and Organizations

- Sony VAIO editing laptop with accessories for editing most of our visual documentations
- Vehicle for Research activities.
- The Centre lost an important section of its facility to the Student Representative Council (SRC) which is going to be used as an Internet Cafe.

INTRODUCTION

The College of Engineering was established as a School in October 1952 to prepare students for professional qualifications only. It has since grown and expanded, and responded to the human resource and development needs of the country. Now as a College, it has four Faculties with thirteen programmes running under nine Departments, and two Research Centres.

The Faculties include the Faculty of Chemical and Materials Engineering, Faculty of Civil and Geomatic Engineering, Faculty of Electrical and Computer Engineering and the Faculty of Mechanical and Agricultural Engineering. The Technology Consultancy Centre (TCC) and The Energy Centre, KNUST are the main research wings of College.

The Faculty of Chemical and Materials Engineering has two academic departments, namely the Departments of Chemical and Materials Engineering. The Faculty runs four programmes, three of which are run under the Department of Chemical Engineering:

- BSc Chemical Engineering,
- BSc Petroleum Engineering,
- BSc Petrochemical Engineering
- BSc Materials Engineering.

The Petrochemical Engineering programme was introduced during the 2009/2010 academic year to train manpower to support the development of oil and gas industry following the discovery of commercial quantities of petroleum in Ghana.

The Faculty of Civil and Geomatic Engineering has three Departments:

- BSc Civil Engineering,
- BSc Geomatic Engineering,
- BSc Geological Engineering

This Faculty continues to play very important roles in the road, water, sanitation, geotechnical, geological and geomatic sectors of the economy, by providing training and services these areas.

The Faculty of Electrical and Computer Engineering runs four programmes including:

- BSc Electrical Engineering,
- BSc Computer Engineering,
- BSc Telecommunications Engineering, and
- BSc Biomedical Engineering.

Programmes under the Faculty are among the most popular at the College. Some of the laboratories are relatively well-equipped with very modern equipment. The College holds regular meetings with the Volta River Authority (VRA) and the Electricity Corporation of Ghana (ECG) to provide various supports including sponsorships to attend international professional meetings and improve the laboratories. The VRA has provided funds to rehabilitate and upgrade the X-ray diffractometer in the Materials laboratory. The University signed an MOU with ECG to among others provide support the Faculty to the tune of \$500,000 dollars in three years to upgrade equipment in the laboratories. The first batch of equipment has arrived for the high voltage laboratory at the Faculty.

The Faculty of Mechanical and Agricultural Engineering consists of the:

- Departments of Mechanical Engineering, and
- Agricultural Engineering.

The Aerospace Engineering programme is in the Mechanical Engineering Department. The major supporter of the programme is the Ghana Air Force. It continues to make available its workshops for hands-on training for the students and is also provides places for internship. It also recruits

suitable candidates for the Air Force. The Ghana Civil Aviations Authority continues to support the Chair.

- The Technology Consultancy Centre (TCC) operates under five thematic areas; engineering, agro and food Processing, ceramics and building materials, consultancy and small business development, policy advocacy, and graduate entrepreneurship.
- The Energy Centre, KNUST continues to be an active unit of the College. There are many associates from other units of the University and has collaborators from Burkina Faso and other countries. It has received many grants to support its activities and focuses not only on research in renewable energy alternatives and policy issues, but also on capacity building in the renewable energy area.

ADMINISTRATION

The College is administered by the following principal officers:

Prof. F.W.Y. Momade	Provost
Ms Josephine Djampim	Acting College Registrar
Mr. Abdulai Suglo	College Accountant
Mrs. Agatha T. Frempong	Acting College Librarian

INFRASTRUCTURE DEVELOPMENT

The unavailability of adequate office accommodation, laboratories and lectures rooms continue to be a challenge for the College. The College in the past has used internally generated funds to put up the Office, Laboratory Building Complex and has paid for equipment in the Telecommunications Laboratory. This was done at great sacrifice of the teaching departments, who would have needed the resources to upgrade and update equipment. Despite these sacrifices the College still requires more spaces for lecture rooms, laboratories and offices. Contract for the construction of the five-storey building has been awarded and construction has started in earnest. It is again to be funded from internally generated funds. It is hoped that when completed it will provide enough space for both undergraduate and graduate lectures and offices.

The College hopes that an agreement will soon be concluded to enable Public Private Partnership (PPP) participation to provide the necessary platform for training engineering students in the use of relevant engineering software. Discussions have also started with Vodafone Ghana to provide a fast internet cafe at the premises of the College.

The 27 Bed-Room Engineering Guest House, opened in December 2004 has continued to play an important role as a guest centre for the University and also retains funds by to support relevant College activities.

Sadly, the construction of the GET-Fund funded Auditorium under K+K Limited for the College is at stand-still. The College had hoped that the project would be completed for the facility to be put to use by August 2005.

The construction of an overhead tank to improve water supply to the College from two boreholes sank by the College has stalled, but will be completed before the beginning of the 2010/2011 academic year.

EXTERNAL COLLABORATIONS

The College through its Departments are linked with other Universities and Industry. The Universities include, among others, North Carolina Agricultural and Technical State University,

Penn State University, Washington State University, Bristol University, Birmingham University, New Castle University, The International Institute for Geo-Information Science and Earth Observation (ITC) and University of Virginia. Recently, the College had visits from the Michigan State University, Minnesota State University, Michigan Tech, University of New Hampshire and Rennsalaer Polytechnic Institute.

The links with North Carolina A&T has been the most active, especially for training manpower to the PhD level. There is also a growing link with Rennsalaer Polytechnic Institute of New York. Staff and student exchange will start in earnest this summer, teaming up to develop instrumentation for on-line gaseous materials analysis from the pyrolysis of agricultural waste using the Juaben Oil Mills as the case study.

The links to Texas Instruments has continued to grow from year to year. They have provided the College with Cadence software, which can be used by both students and staff for integrated circuit (IC) design. The software has been successfully tested and staff and students of the College will soon start using the software for design.

Last summer, Princeton University organised a design workshop bringing together students of both universities. Equipment used for the workshop were donated to the Department of Materials Engineering after the workshop. During the year, Schlumberger donated propriety software worth 2.5 million dollars to the petroleum engineering programme at the College. Plans are far advanced to provide a dedicated laboratory in advance of the start of the 2010/2011 academic year.

Talks have been concluded and an MOU has been signed with the software giant SAP for the College to host and provide raining in the use of SAP business software. A train the trainer workshop will soon be organised for selected staff of the University

The major international bodies that the College has links with are World Bank, UNESCO-IHE, DANIDA, DAAD.

The College has continued its links with Industry. Discussions with the VRA and ECG have been very beneficial to the College. Similar contacts have been established with the Ghana Grid Company (GRIDCo). The VRA provided opportunities for conference attendance, opened its doors for staff to witness major maintenance work at their thermal plant at Aboadze and provided funds for maintenance repairs and upgrade of an x-ray diffractometer at the Materials Engineering Department. Discussions with Tema Oil Refinery (TOR) focused on activities under the TOR Chair.

DONATION

- The ECG has donated a High Voltage laboratory to the Electrical Engineering Department.
- VRA has provided about 15,000 Euros for the maintenance repairs and upgrade of software for the x-ray diffractometer in the Materials Engineering Laboratory.
- Texas Instruments has donated a Cadence Software and workstations to be used by staff and students for integrated circuit design.
- Schlumberger has donated propriety software valued at 2.5 million US dollars to the Department of Chemical Engineering.

FACULTY OF CHEMICAL AND MATERIALS ENGINEERING
DEPARTMENT OF CHEMICAL ENGINEERING
INTRODUCTION

The Department of Chemical Engineering offers three four-year degree programmes leading to the award of BSc Chemical Engineering, BSc Petroleum Engineering, and BSc Petrochemical Engineering. Graduate programmes leading to the award of MSc, MPhil and PhD in Chemical Engineering are also offered in the Department.

The Department is getting into collaboration with the University of Calgary, Canada to help establish a laboratory for the Petroleum Engineering programme.

STUDENT POPULATION

The students' population has increased steadily over the recent years. The undergraduate students' population in 2009/2010 academic year stood at 611 as compared to 546 in 2008/09.

STATISTICS

BSc Chemical Engineering Programme

	<i>Total Number</i>	<i>male</i>	<i>Female</i>	<i>Foreign Students</i>
Year 1	120	96	24	14
Year 2	71	56	15	7
Year 3	75	63	12	10
Year 4	86	61	25	11
Year 5	16	14	2	5
TOTAL	368	290	78	47

BSC PETROLEUM ENGINEERING PROGRAMME

	<i>Total Number</i>	<i>Male</i>	<i>Female</i>	<i>Foreign Students</i>
Year 1	75	61	14	13
Year 2	50	41	9	2
Year 3	28	26	2	2
Year 4	50	42	8	5
Year 5	2	1	1	1
<i>TOTAL</i>	<i>205</i>	<i>171</i>	<i>34</i>	<i>23</i>

BSC PETROCHEMICAL ENGINEERING PROGRAMME

	<i>Total Number</i>	<i>Male</i>	<i>Female</i>	<i>Foreign Students</i>
Year 1	38	32	6	5

MSC/PHD CHEMICAL ENGINEERING PROGRAMME

	<i>Total Number</i>	<i>Male</i>	<i>Female</i>	<i>Foreign Students</i>
Year 1	3	3	-	-
Year 2	3	3	-	-
Year 3	1	1	-	-
Year 4	1	1	-	-
<i>Year 5</i>	<i>2</i>	<i>2</i>	<i>-</i>	<i>-</i>
<i>Year 6</i>	<i>1</i>	<i>-</i>	<i>1</i>	<i>-</i>
<i>TOTAL</i>	<i>11</i>	<i>10</i>	<i>1</i>	<i>-</i>

STAFFING

Currently there are 13 lecturers at the Department, out of which one lecturer is on study leave, one on sabbatical leave and two of them are on post retirement contract.

RESEARCH

The following research projects initiated by academic staff are in progress:

Mrs. Zs. Momade (Snr. Lecturer)

- Utilization of waste cocoa bean shell
- Mechanical activation of Pozzolanas

Dr. L. Darkwah (Lecturer)

- Cyanide detoxification (continuation)
- Biomass Characterisation
- Laboratory Wetland Studies
- Water Auditing

Dr. D.K. Kuwornoo (Lecturer)

- Removal of heavy ions from industrial effluents by adsorbing colloid flotation
- Extraction and purification of the enzyme bromelain from pineapple
- Development and testing of a ceramic diaphragm in electrochemical cells
- Production of bio-diesel from *Icacina Senegalensis* by fast pyrolysis
- Hydrolysis, fermentation and separation of lignocellulosics derived sugars to ethanol, ethanol-butanol and other products

Dr. M. Y. Mensah (Lecturer)

- Production of biodiesel from local oils
- Pilot project for source-sorting of municipal household wastes from the Asokwa Sub-Metro area
- Technical assessment of biogas technology for the Busunu community
- Production of adhesives from local raw materials and economic assessment
- Application of Solid Refuse Fuels (SRF) as alternative fuel in the production of local (Pozzolana) cement
- Research in the Treatment of Hazardous Waste with Energy Recovery

- Optimization of the Production of Biodiesel from Jathropha and Palmoil (Project Continuation)
- Plant design for the use of Solid Refuse Fuels (SRF) from municipal waste as alternative fuel in the integrated cement industry

Mr. E. K. Baah-Ennumh (Lecturer)

- Optimization of Industrial Energy Efficiency: case study of Appiah Menkah Complex
- Optimizing the refinery parameters of Crude Palm Kernel Oil for export
- Simulation of process system using Radiotracer/Electrical Resistance Tomography Technologies
- Quantitative analysis and characterization of the impact of fuel quality and combustion technology on ambient air
- The confluence of Microreactor Technology and Computational Fluid Dynamics in process system design for control

Dr. S. K. Donyinah (Lecturer)

- High-Resolution as Modern Tool of Scientific Research (Pending publication in the Journal of Ghana Institution of Engineers)
- Environmental studies into water bodies to investigate organic pollutants, using Lake Bosomtwe and the Volta Lake as pilot projects
- Securing the environment and biodiversity of the middle belt of Ghana, using the area around the Kintampo Waterfalls as pilot project

Dr. P. K. Achireko (Lecturer)

- Incorporation of oil price models in oil property evaluation
- The use of cocoa husk in drilling fluid
- Simulation of oil/gas prices
- Comparative analysis of oil and gas taxation in West Africa
- A new look at geostatistical reserve estimation

Mr. E.C. Bentum (Lecturer)

- Pressure losses along the West African Gas Pipeline
- Calorific values, Wobbe index and Z-factors of some selected natural gas sources including the West African Gas
- The Prediction of formation of natural gas hydrates using HYSYS program
- Optimization of oil separation from gas condensate wells using HYSYS
- Well casing design factors

Dr. E.G. Ankudey (Lecturer)

- Isolation of lipase producing organisms from local soil and purification of the enzyme
- Extraction and characterization of oil from rubber seeds
- Production of activated charcoal from palm kernel shells/coconut shells (continuation)
- Isolation and identification of protease producing organism and partial purification of protease (continuation)
- Design, fabrication and testing of a gasifier for rice hulls from Aveyime rice mills
- Assessment of peroxidase activity of locally grown beans (soybean, bambara beans ect.)
- Separation of water-alcohol mixtures by PVA/local clay composite membranes
- Production of glucoamylase from local substrates

+Dr. B. Adu-Amankwa (Snr. Lecturer)

- Catalytic cracking of Atmospheric Gas Oil (AGO)
- Extraction and refining of combic butter for pharmaceutical and cosmetic applications
- Solvent extraction of *artemisinin* (antimalaria drug) from *Artemisia Annua* plant

+Dr. T. K. Nyadziehe (Lecturer)

- Destructive distillation of local bamboo species
- Design and construction of the retort
- Determination of the optimum parameters for the destructive distillation process
- Determination of the physico-chemical properties of bamboo-charcoal
- Analysis of the distillate from the destructive distillation of bamboo

#Sabbatical Leave *On Study Leave +On Contract

PETROCHEMICAL ENGINEERING PROGRAMME

A new programme, the Petrochemical Engineering programme was introduced at the Department with the first batch of 38 students.

SERVICE TO THE COMMUNITY

The Department continues to offer teaching services to various Departments and Institutions at KNUST. It also offers laboratory practical for the Chemical Engineering Department of Kumasi Polytechnic.

TEMA OIL REFINERY CHAIR OF CHEMICAL/PETROCHEMICAL ENGINEERING

A Memorandum of Understanding was signed with TOR in 2005 to establish a Chair for Chemical Engineering. The Chair is still vacant.

DEPARTMENT OF MATERIALS ENGINEERING

INTRODUCTION

The Materials Engineering programme (formerly Materials Science and Engineering) was established in 1984 as a section under the Department of Mineral Processing, Extractive Metallurgy/Materials Science and Engineering at the School of Mines, Kumasi.

The programme remained as a section until October 2000 when all programmes, with the exception of the Materials Science and Engineering, were transferred to the University of Mines and Technology (UMaT).

In 2002/2003 academic year the Materials Science and Engineering programme was re-structured, re-named as Materials Engineering and transferred to the College of Engineering as a full-fledged Department. The Department is now in its seventh year with a student population of one hundred and fifty-one (151).

PROGRAMMES OFFERED BY THE DEPARTMENT

Undergraduate Programme in Materials Engineering

The Department offers a four-year degree programme leading to the award of BSc Materials Engineering.

Graduate Programme in Environmental Resources Management

The Department offers a 2-year programme leading to the award of the MSc Environmental Resources Management Degree. This is designed in modules to enable full-time workers enroll. The programme is

particularly aimed at people who require environmental orientation to enable them perform their tasks in environmental assessment management.

STUDENTS MEMBERSHIP

BSc Materials Engineering

First Year	-	54
Second Year	-	38
Third Year	-	32
Fourth Year	-	27

MSc Environmental Resources Management

First Year	-	17
Second Year	-	12

MPhil Materials Engineering - 2

PhD Materials Engineering - 1

MAJOR RESEARCH BY STAFF

Academic staff has continued to be very active in their research and development activities. Some publications of the current research activities of the members of academic staff are:

CONFERENCES

Kwofie, S., and Soboyejo, W.O., Crack growth behaviour of moso culm bamboo, 5th International Conference of the African Materials Research Society (A-MRS), Abuja, Nigeria Dec. 14-18, 2009.

Bediako M., Atiemo E., Gawu S.K.Y and Adjaottor A.A., Suitability of some Ghanaian mineral admixtures for masonry mortar formulation. Proceedings of the fifth international structural engineering and construction conference (ISEC-5), Las Vegas, USA, 22-25 September 2009.

W. A. Uju, I. N. A. Oguocha and E. Gikunoo, “Study of Reactivity in Particulate Al-Mg Alloy Composites Using XANES and XRD”, Proceedings of the American Society for Composites: Twenty-Fourth Technical Conference, Newark, DE, September 15–17, 2009. American Society for Composites, CD-ROM—12 pp.

FACULTY OF MECHANICAL AND AGRICULTURAL ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING

INTRODUCTION

The Department of Mechanical Engineering has a primary responsibility to produce engineers capable of designing, manufacturing, servicing and maintaining machinery and equipment. This is a challenging task due to the vast scope of machinery being developed and used by humankind (from design, manufacturing, and maintenance of complex machines such as interplanetary rockets to simple household kitchen appliances such as can opener). The training needs to be thorough and focused. Our immediate national needs are not to build rockets and missile launchers but to create fundamental machine tools and other equipment that can increase productivity of our people in various fields of endeavour.

Our challenge is compounded today by inadequacy of resources that would ensure that our Department can train young engineers who can be equal to the challenges. The Mechanical Workshop, Heat Engines Laboratory, Mechanics of Machines Laboratory and the Strength of Materials Laboratory which have, over the years, been the bedrocks of our practical training facilities have all run down and need to be completely revamped with new machines to reflect emerging trends in industry. New workshops to provide training and enhance intensive research in foundry, welding, sheet metal fabrication, plastic injection moulding, integrated circuit boards manufacturing, computer numerically controlled (CNC) machining practices are necessary additions that require urgent funding to set them up.

To meet emerging trends in industry we have set ourselves new goals to delineate our training into four programmes that can best be handled in four new Departments. The emphasis is on focused, in-depth, high quality training that will arm our graduates with knowledge, expertise and confidence to address problems in various specific industries in a national development agenda.

TEACHING

The teaching activities at the Department of Mechanical Engineering are pivotal for national development. Currently the Department offers two four-year undergraduate programmes leading to the award of BSc Mechanical Engineering and BSc Aerospace Engineering degrees. The third group of BSc graduates in Aerospace Engineering are passing out of our Aerospace programme onto the job market. Four of the students who graduated last year have been employed by the Ghana Air Force.

Steps are under way to introduce an undergraduate programme in Industrial Engineering to address the need for specialists in that field. Similarly, the Department has submitted for approval, syllabus for the top-up courses for HND and Diploma certificate holders to earn degree in BSc Mechanical Engineering. The special feature of the top-up programme is that, it will address the needs of people with up to HND background who have worked in industry and desire to upgrade their knowledge to a bachelor's degree level.

The Department also runs the following post-graduate programmes currently, all spanning two years:

- MSc Thermo fluids programme.
- MSc Design and Production Programme.
- MSc Applied Mechanics Programme.

The first year of each programme is used to cover taught causes and the second year for supervised research. In addition to the Masters Programmes, the Department also runs a PhD Degree programme based solely on research. There are currently three doctoral students, one has submitted his draft thesis, waiting for his viva-voce while the other two are still working hard to complete their research on various subjects in Thermo- fluids, Design and Production Engineering.

The teaching staff level now stands at 24 with a total of 547 students giving a student teacher ratio of 23. Unfortunately, out of the 24 staff at post, 6 key members will have to leave the Department for having exhausted their mandatory post-retirement contract appointment. This may pose a big challenge to the Department as the student teacher ratio may jump to about 30.

The linkage programme between North Carolina Agricultural Technical State University (NCA&T) and the Mechanical Engineering Department is yielding very positive results in terms of the training of staff for our departmental programmes. Through this programme, two members of staff

will earn their PhD degrees this year. One is graduating now and the other awaiting his viva. Another lecturer is studying for a PhD at the NCA&T.

The Department has forwarded application for appointment of an adjunct lecturer, from General Electric Aviation of the USA to strengthen the staff in Aerospace Engineering programme and another professor from the Howard University in the USA to do a one semester sabbatical with the Department. These two are past students in the Diaspora who are desirous of imparting their experience to our students and to share their research experience with faculty members.

DEVELOPMENT OF PROGRAMMES

Requirements in industry and national development are creating considerable needs for specialists who have been trained in-depth in specific areas of mechanical engineering to be able to meet current challenges. Ghana needs to be able to manufacture various simple tools and machines to take away direct physical drudgery in the everyday activities of artisans at the informal sector. Mechanical Engineering programme is unable to produce graduates with in-depth expertise to address needs in the creation and servicing of machines such as: internal combustion engines; pumps; fans; compressors; hydraulic turbines; wind turbines; steam and gas turbines; refrigeration plants; devices for conversion of solar energy into other forms of energy (development of expertise to design and manufacture solar panels to meet needs in lighting, refrigeration, etc.), not to add development of deep based knowledge in atomic energy exploitation. The national challenges in the enumerated areas and others not mentioned can only be addressed within focused training.

These needs can best be addressed fully with the creation of new programmes to focus on design of machinery, development of processing technologies, creation of mechanisms for infusion into design and manufacture of machinery, Energy Systems Engineering, Industrial Engineering. In summary, a total of three new programmes comprising the following are envisioned for the near future:

- Applied Mechanics, Design and Manufacturing Engineering
- Energy Systems Engineering
- Industrial Engineering

Efforts are being made to create the infrastructure, laboratories with state of the art equipment and instrumentation for research and development of machinery to meet national needs. The Department of Mechanical Engineering with these programmes will produce well trained engineers in the above disciplines and with adequate confidence to enter existing job markets and also have confidence in creating their own jobs due to the acquisition of focused knowledge and expertise. Committees will be charged to provide exhaustive details of the new programmes.

In another achievement, the Department has submitted for approval, an MSc programme in Renewable Energy Technologies RETs to start running from next academic year under the ongoing Renewable Energy Educational Project (REEP) in the College.

RESEARCH

Members of academic staff continue to conduct research in areas related to Thermo-fluid Engineering, Design and Production Engineering. Research in the area of blending bio-fuels for I.C. engines continues under Prof. F.K. Forson, Prof. Brew-Hammond, Prof. F.O. Akuffo, and others. There are attempts to use locally available materials to design and manufacture internal combustion engines and bore-hole mechanized centrifugal pumps under the supervision of Dr. L.E. Ansong. Research into the prediction of crack propagation using acoustic emission techniques under joint collaboration of NCA&T spearheaded by Prof. Owusu Ofori and KNUST staff Mr.

Francis Davis and Dr. L.E. Ansong is ongoing. Investigation into the use of solar energy for cooling and refrigeration purposes is being carried out by Mr. E.W. Ramde who is a PhD student and academic staff of the Department.

Mr. Agyei-Agyemang a staff and a PhD student is fervently working on the theme “Impact attenuation System Using Friction Dumpers.” Dr. E.S.D Afrifa is engaged in the building of a prototype machine for making yam ridges and Copula furnace using gas to be used for cast iron production. Atmospheric aerosol research is being carried out by Dr. A.K. Sunnu in collaboration with the Ecological Laboratory of the University of Ghana, Legon, and the Department of Physics, KNUST Kumasi.

COMMUNITY SERVICE/CONTRIBUTION TO SOCIETY

- Prof. A. Brew-Hammond is the Chairman of the Energy Commission.
- Dr. Sunnu is the Chairman of the Programmes Advisory Committee (PAC) of the (HND Automotive Engineering) Koforidua Polytechnic, a member of Ghana Standard Board Technical Committee for standardization and also involved in the establishment of a National Energy Data Processing and Information Center (NEDPIC) for the Energy Commission.
- Prof. F.K Forson is a member of the Board governors of Akroso Senior High School
- Mr.E.E.K Agbeko is a moderator of Polytechnic Examinations in Manufacturing Engineering
- Dr. P.Y. Andoh serves as Transport Engineer for KNUST
- Prof. F. O. Akuffo’s membership of Boards and Committees include:
 - IFC/World Bank Lighting Africa, Member, National Advisory Committee (2010)
 - IFC/World Bank, Lighting Africa 2010, Judge Product Awards Competition
 - ESMAP/World Bank, Member Panel of Experts, Meeting in Washington DC,26-27 October, 2009

INTERNATIONAL LINKAGES

Links have been maintained between Department of Mechanical Engineering and the following institutions:

- North Carolina Agricultural and Technical University NCA&T,
- Southern University, USA
- University of Michigan, USA
- 2iE International Institute for Water and Environment, Ouagadougou University.

Through the NCA&T linkage two staff members completed their PhD. Mr. Y.A.K. Fiagbe defended his PhD thesis in March 2010 while Mr. A.A. Agyei Agyemang is scheduled to do his viva- voce in August 2010. Mr. E. W. Ramde has won the University of Michigan African Presidential Scholarship (UMAPS) and is on a two-year study leave in UM to complete his PhD thesis.

Dr. Sunnu is a visiting lecturer at the 2iE (Institut International de l’Eau et de l’Environnement) in Ouagadougou, Burkina Faso where he teaches a Master’s course in Turbomachinery.

BENEFACTORS

A number of organizations have continued to give extremely valuable support to the Department to enhance teaching and research activities. We wish to express our profound gratitude to the following organizations:

- The Ghana Air Force (GAF) donated 4 computers, 2 printers and accessories to the Department for the Aerospace Programme. It also provided internship for our aerospace engineering students during the long vacation.
- Zoomlion Company limited responded to an appeal by final year Mechanical Engineering students and donated an amount of GH¢940.00 to assist their project work.
- The Crocodile Matchets Ghana Limited, Tema; Volta River Authority; Aluworks Limited, Tema; Takoradi Naval Base; Tema Lube Oil; Tema Oil Refinery; and Ghacem, Tema; for their continuous support for our students' industrial visit.

DEPARTMENT OF AGRICULTURAL ENGINEERING INTRODUCTION

Agricultural Engineering is the application of engineering and biological principles to develop technologies and solutions to problems in agriculture to remove drudgery, and to increase productivity and efficiency of farmers. The Agricultural Engineering Department is currently organised into four sections including agricultural machinery engineering, soil and water engineering, food and postharvest engineering and agro-environmental engineering. The Department is one of three departments in the Faculty of Mechanical and Agricultural Engineering within the College of Engineering. Staff members are actively engaged in the three areas of research, teaching and service to the community in various capacities. Presently, the academic staff of the Department consists of four associate professors, eight senior lectures and four lecturers.

ACADEMIC ACTIVITIES

During the period under review, the Department continued to run the BSc Agricultural Engineering Degree Programme as well as offer service courses in Agricultural Mechanisation to students at the Faculty of Agriculture. The Department also offers service courses to MSc/MPhil Programmes in Seed Science and Technology, Postharvest Physiology and Landscape Studies, all at the Department of Horticulture, and Water Resources Engineering at Civil Engineering Department.

GRADUATE DEGREE PROGRAMMES

The sixth batch of graduate students has been admitted since the graduate programme started in 2004/2005 academic year. Currently, there are four (4) PhD students, three (3) MPhil and twenty-seven (27) MSc students in the following areas of study:

- Soil and Water Engineering,
- Food and Postharvest Engineering,
- Agricultural Machinery Engineering, and
- Agro-Environmental Engineering.

The third batch of MSc students was able to complete their programme on schedule and thirteen of them who went through a successful *viva* will be graduating this year.

RESEARCH GRANTS AND ACTIVITIES OF STAFF

The research activities at the Department involve all staff, who undertake active research in their various areas of specialization. During the period under review, research topics of staff members continue to attract modest funding.. Staffs of the Department have won an amount of \$45, 350 from AfricaTrust for research into biodiesel study. Also, the WAAPP/CSIR have granted the Department an amount of \$56,000 to carry research into demonstrating mechanical harvesting technology. The Energy Commission and the KNUST have jointly provided Gh¢17,000 to the Department to

research into use of waste vegetable oils as biodiesel fuel. Staff and their research areas are as follows:

Prof. S.K. Agodzo

- Irrigation and Agricultural Water Management.
- Agrohydrology and agrometeorology.
- Watershed Management.
- Soil mechanics applications in agriculture.

Prof. N. Kyei-Baffour

- Design, construction and testing of a gated pipe for furrow irrigation.
- Design of rainwater systems for peri-urban/urban areas of Kumasi.
- The impacts of agro-industries on the environment.
- Evaluation of peri-urban dry season vegetable irrigation.
- The impacts of erosion on feeder roads: A case study.
- The effect of culture on water use and conservation.
- Agro-Meteorology and related issues in Ghana.

Prof. A. Bart-Plange

- Status of food and agro-processing equipment in Ghana.
- Development of a database for physical and thermal properties of locally available food grains.
- Waste management from poultry productions systems.
- Physical, thermal and mechanical properties of food materials.
- Aflatoxin contamination in maize. .

Dr. E.Y.H. Bobobee

- Mechanical Cassava Harvesting Technology.
- Development of abrasive wear testing equipment.
- Development of durable mouldboard ploughshare suitable for animal-drawn and tractor-drawn operations.
- Transport and logistics of agricultural products and wastes.
- Development of agro-processing equipments for shelling maize, groundnut, Jatropha, castor seed, Sheanut and sunflower.
- Development of portable motorised rice threshers.
- Animal welfare studies. .

Prof. E. Mensah

- Heavy metal uptake by vegetables from irrigation water.
- Heavy metal monitoring in food items.
- Use of used vegetable oil as biofuel.
- Developing of a millet thresher.

Dr. A. Addo

- Development and evaluation of biomass gasifiers for thermal applications in agro-industry and households.
- Shrinkage and volumetric change of banana during drying.
- Effect of drying method on breakage susceptibility of maize.
- Effect of initial moisture content on energy consumption in drying maize.

- Two-stage drying of paddy and the effects on milling quality.
- Effect of different solvent on the extraction of soyabean oil.

Mr. S.H.M. Aikins

- Evaluation of different methods of seedbed preparation, manual planting and crop care on cowpea and soyabean.
- Effect of tillage, sowing and fertilizer application depths on crop growth and yield.
- Effect of tillage depth on soil physical properties and weed control on growth and yield of maize.
- Tractor operators and owners' perception about agricultural tractor safety and breakdown status.

Mr. J. Aveyire

- Modification and construction of a cocoa pod cracker.
- Construction of and evaluation of a palm fibre-nut separator.
- Evaluation of a hand held planter.
- Design and construction of a flexible domestic mopping machine.
- Determination of the viability and set-up of a mini-scale oil-processing plant.

Dr. W. Agyei-Agyare

- Developing a decision support system using MIKE Basin, a water allocation model for the WVB in collaboration with the Water Resources Commission.
- Analysis and estimation of small reservoirs rate of sedimentation and nutrient transport in the White Volta Basin under GLOWA Volta Project.
- Socio-economic and bio-physical studies on pump irrigation along the White Volta River under the GLOWA Volta Project. Palm oil waste disposal and management options.
- Case study of Ghana Oil Palm Development Company (GOPDC), Kwae.
- Comparative studies of double ring and disc infiltration.
- Lowland soil and water management for efficient rice production.

Dr. Emmanuel Ofori

- Soil moisture, penetration resistance and consistency indices: Implications for soil tillage management effect of soil compaction on the growth of maize plant.
- Rainfall characteristics in the management of rainfed maize production.
- Soil compression characteristics and tillage management of agricultural soils.

Mr. J. O. Akowuah

- Quality assessment of traditional and mechanical palm oil processing techniques.
- Biomass briquette production from agricultural residues.
- The effect of drying temperature and storage duration on the quality of improved rice varieties in Ghana.

Mr. F. Kemausuor

- Assessment of farmers' adaptation to climate change in Ghana.
- Agricultural waste management in some districts in the Ashanti Region.
- Development of Decision Support Tools (DSTs) for Biofuels transesterification technologies.

Mr. J.B. Okyere

- Modification, testing and evaluation of a cylindrical forage chopper.
- Effect of travel time on mechanised farming operations and agricultural machinery safety: A case study in the Ashanti Region.
- Design evaluation in the selection and use of agricultural tractors: A case study in the Ashanti Region.
- Work study investigation into manual rice harvesting in Ghana: A case study of Adanwomase Rice Project in the Ashanti Region.
- Modification, testing and evaluation of DAE Tractor-Mounted Cassava Harvester.

CONFERENCES ATTENDED**Prof. S.K. Agodzo**

- Workshop on Groundwater irrigation, International Water Management Institute (IWMI) 09-11 March, 2010, Accra, Ghana.
- Conference of the Commonwealth Association of Polytechnics in Africa (CAPA) 01-03 December 2009, Maputo, Mozambique.
- NPT Workshop for Capacity building for polytechnics in Ghana. 14 – 16 July 2009, Accra, Ghana.
- Ho Polytechnic Research Conference, 01 – 03 July 2009, Ho, Ghana.
- Education for All (EFA) Workshop, Ministry of Education, 02 June 2009, Accra, Ghana.
- Conference of the Commonwealth Association of Polytechnics in Africa (CAPA), 25 – 28 May 2009, Dar-es-Salam, Tanzania.
- Wa Polytechnic Annual Research Conference 2 (WaPARC 2), 25 – 27 February, 2009, Wa, Ghana.

Prof. N. Kyei-Baffour

- Part III of International Deans' Course for Africa 2009/10 in Addis Ababa, Ethiopia on dialogue on innovative higher education strategies (DIES) sponsored by DAAD/HRK from 1-5 March 2010.
- Part II of International Deans' Course for Africa 2009/10 in Abuja, Nigeria on DIES sponsored by DAAD/HRK from 2-6 Nov. 2009.
- Part I of International Deans' Course for Africa 2009/10 in Osnabrück/Berlin, Germany on DIES sponsored by DAAD/HRK from 2-14 May 2009.
- CERR 7, Capital View Hotel, Koforidua, Eastern Region, Ghana, from 21-24 July 2009.

Prof. Ato Bart-Plange

- Koforidua Polytechnic Annual Research Conference, Koforidua, 2010.
- CERR 7, Capital View Hotel, Koforidua, Eastern Region, Ghana, from 21-24 July 2009.
- 4th Ghana Society of Agricultural Engineering (GSAE) National Conference, UCC, Cape Coast, 2009.
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Dr. E.Y.H. Bobobee

- 17th International Conference on Wear of Materials (WOM 17), Las Vegas, USA. April 19 – 23, 2009.
- VW Foundation International Workshop on “Sustainable value chains – Integrated Technologies for Sustainable Use of Resources in Africa. The University of Zambia, Lusaka 14 – 19 March 2009.
- CERR 7, Capital View Hotel, Koforidua, Eastern Region, Ghana, from 21-24 July 2009.

Dr. W.A. Agyare

- Groundwater project in sub-Saharan Africa, 9 – 14th March, 2010, Alisa Hotel, Accra.
- GIS/RS Based tool for selecting suitable inland valleys for rice cultivation, 25 – 26 March, 2010, M Plaza Hotel, Accra.
- Inland Valley Rice Development Project of MoFA: Environmental Management Plan, 23rd Feb., 2010, Miklin Hotel, Kumasi.
- Modelling of the onset of the rainy season, 8 – 12 February 2010, UNU-INRA/FVP/IWMI Sasakawa Centre, UCC, Cape Coast, Ghana.
- Capacity development for the Developing World – Brain gain and brain drain, 28th Sept. to 4th October, 2009.
- Supporting sustainable land/water-use management in semi-arid landscapes of Volta Basin using Multi-Agent-Based simulations, 26 – 28 May 2009.
- 4th Ghana Society of Agricultural Engineering (GSAE) National Conference, Cape Coast, 2009.
- CERR 7, Capital View Hotel, Koforidua, Eastern Region, Ghana, from 21-24 July 2009.

Mr. F. Kemausour

- ECOWAS Regional Workshop on Access to Energy Services, Ouagadougou, Burkina Faso, 25 – 26 February 2010.
- Towards Sustainable Biofuels Industries in Africa: Roundtable of Key Stakeholders, UNIDO, Vienna, Austria, 8 December 2009.
- Expert Group Meeting: Next Generation Biofuels and Biorefineries: case Studies from Selected East European Countries, Trieste, Italy, 2 – 3 December 2009.
- Expert Group Meeting: Feasibility of Projects for Pilot production of Next Generation Biofuels and Chemicals from Biomass in African, Caribbean and Pacific Countries, Trieste, Italy, 16 – 17 November 2009.
- Biofuel Markets West Africa, La Palm Royal Beach Hotel, Accra, Ghana, 26-29 October 2009.
- Ad Hoc Experts Meeting on Energy Security in West Africa, Lome, Togo, 20 – 21 July 2009.

Book and Chapters of Books

Mensah, E., Kyei-Baffour, N., Ofori, E. and Obeng, G. (2009). Part 1, Environmental Health Management: Influence of human activities and land use on heavy metal concentrations in irrigated vegetables in Ghana and their health implications. **Appropriate Technologies for Environmental Protection in the Developing World** (ed. E. K. Yanful). Springer pp 9-14 accessed on 05 March 2009 from <http://books.google.com>

Ofori, E. and Kyei-Baffour, N. (2009). Selection processes of (changes in) land use and cropping patterns: Multiple cropping. Chapter 3.1b of Applied Agrometeorology of multiple cropping by the World Meteorological Organisation/Technical Committee for Agro-Meteorology (WMO/CAgM) 5 pages (In press)

Ofori, E., Kyei-Baffour, N. and Stigter, C. J. (2009). The selection of actual preparedness strategies for dealing with climate as adopted in multiple cropping. Chapter 3.1c of Applied Agrometeorology of multiple cropping by the World Meteorological Organisation/Technical Committee for Agro-Meteorology (WMO/CAgM) 5 pages (In press)

Walker, S., Ofori, E., Kyei-Baffour, N. and Stigter, C. J. (2009). The sustainable development and use of agro-ecosystems: Multiple cropping. Chapter 3.2iii of Applied Agrometeorology of multiple cropping by the World Meteorological Organisation/Technical Committee for Agro-Meteorology (WMO/CAgM) 5 pages (In press)

Walker, S., Ofori, E., Kyei-Baffour, N. and Stigter, C. J. (2009). Problems and solutions in using of and coping with weather phenomena in need of tactical decision making and challenges remaining for the use of science to contribute to problem analyses and designing viable solutions in this context: Multiple cropping. Chapter 3.4i of Applied Agrometeorology of multiple cropping by the World Meteorological Organisation/Technical Committee for Agro-Meteorology (WMO/CAgM) 4 pages (In press)

Ofori, E., Kyei-Baffour, N. and Stigter, C. J. (2009). Designing and selecting weather related tactical applications for agricultural management and increasing their efficiencies: Multiple cropping. Chapter 3.4ii of Applied Agrometeorology of multiple cropping by the by the World Meteorological Organisation/Technical Committee for Agro-Meteorology (WMO/CAgM) 5 pages (In press)

Brew-Hammond, A., Kemausuor, F., **Addo, A.**, Awudza, J., Darkwah, L., Mensah, E., Idan, C and Antwi, E. 2009. "Guidebook on Modern Bioenergy Conversion Technologies in Africa", United Nations Industrial Development Organisation (UNIDO), Vienna. (*Contributing author of Chapter 5 on Biomass Gasification Technologies*). pp. 117-138

CONFERENCE PROCEEDINGS

A. Addo and A. Bart-Plange. 2009. Particle size evaluation of feed ingredient produced in the Kumasi metropolis. *Proceedings of the Fourth National Conference on Agricultural Engineering*, Cape-Coast, 18 – 20 September 2008. pp. 162 – 168.

A. Bart-Plange, A. Addo, J. O. Akowuah, D. E. Akrobortu. 2009. Aflatoxin contamination of maize from different storage locations in Ghana. *Proceedings of the Fourth National Conference on Agricultural Engineering*, Cape-Coast, 18 – 20 September 2008. pp. 174 – 181.

A. Bart-Plange, A. Addo, V. Asare and S. Amponsah. 2009. Thermal Conductivity of ground sheanut kernel. *Proceedings of the Fourth National Conference on Agricultural Engineering*, Cape-Coast, 18 – 20 September 2008. pp. 182 – 188.

A. Addo, A. Bart-Plange and C. Egbefome. 2009. Kinetics of water sorption by egusi melon (*Cucumeropsis edulis*) seed. *Proceedings of the Fourth National Conference on Agricultural Engineering*, Cape-Coast, 18 – 20 September 2008. pp. 200 – 206.

A. Bart-Plange, A. Addo and J. O. Akowuah. 2009. Milling quality of two local rice varieties as affected by harvesting time. *Proceedings of the Fourth National Conference on Agricultural Engineering*, Cape-Coast, 18 – 20 September 2008. pp. 207 – 212.

F. Kemausuor, **A. Addo** and J. O. Akowuah. 2009. Biofuels production in Ghana: opportunities and challenges. *Proceedings of the Fourth National Conference on Agricultural Engineering*, Cape-Coast, 18 – 20 September 2008. pp. 285 – 304.

Aikins, S.H.M. and Kyere, J.B. (2009). A Survey of Ejura Agricultural Tractor Operators' Background, 7th College of Engineering Research Retreat, 21–24 July, 2009, Koforidua, Ghana.

SERVICES TO THE COMMUNITY

Dr. E.Y.H. Bobobee serves as the College of Engineering representative on the National Intellectual Property Policy Committee. Dr. E. Ofori continues his involvement with the Development of National Climate Change Adaptation Policy Strategy/Framework as part of Phase II of the Netherlands Climate Assistance Programme (NCAP). Dr. Ahmad Addo continues to render technical services to several mechanised farms in the country. The Department collaborated with GRATIS Foundation to demonstrate mechanical cassava harvesting technology to the staff of Root and Tuber Improvement and Marketing Programme (RTIMP) of MoFA and continues to provide expertise to test agricultural processing machines for RTIMP.

The Department has also had some collaboration with the International Network for Bamboo and Rattan (INBAR), the Leibniz-Institute of Agricultural Engineering at Potsdam-Born in Germany and the Swedish University of Agricultural Sciences (SLU).

Members of the Department continue to serve as resource persons and delegates at various national and international symposia, workshops and conferences. Staffs are serving as referees for various national and international journals. Members also continue to serve as external panellists for promotion interviews for engineers and also as external assessors for promotion for staff of sister Universities and Polytechnics in the country.

The Department continues to host the National and the Regional Secretariats of the Ghana Society of Agricultural Engineering (GSAE), the West African Society for Agricultural Engineering (WASAE).

FACULTY OF ELECTRICAL AND COMPUTER ENGINEERING INTRODUCTION

The Faculty of Electrical and Computer Engineering offers a four-year BSc Degree programmes in the following areas:

- Electrical/Electronic Engineering
- Computer Engineering
- Telecommunication Engineering
- Bio-Medical Engineering

The BSc Degree programme in Bio-Medical Engineering is new. The first batch of students to the programme was admitted during the first semester of the 2008/2009 academic year.

The Faculty also offers the following postgraduate programmes:

- A two-year MSc Taught Programme in Telecommunications.
- An MPhil/Research and PhD Programme in Electrical Engineering
- An MPhil/Research and PhD Programme in Computer Engineering

The programmes continued to enjoy high patronage from both Ghanaian and foreign students. The current undergraduate student population of 899 is made up of 800 Ghanaian and 99 foreign students. The student population for postgraduates is 29.

STAFFING

Efforts made by the Faculty to recruit additional teaching staff resulted in the employment of one academic staff for the Bio-Medical Engineering programme.

The population for academic staff now stands at 15. The drive to further increase the faculty strength to the required establishment levels continues.

PROFESSIONAL TRAINING

The Faculty hosts a Cisco Local Academy that provides opportunity for students to enhance their employment skills in the field of Computer Networking.

RESEARCH

Active Research areas during the year under review include optimisation of efficiency of earth electrodes, applications of ANN to power systems and product design and development for local applications. In the area of product development, prepaid meter, designed and developed by staff and students of the Faculty for local manufacture in the previous year, was further improved upon.

DETAILS OF LINKS WITH OTHER UNIVERSITIES AND INDUSTRY

The Faculty maintained its links with Texas Instruments. Under this linkage programme, six students are currently pursuing postgraduate programmes at the Texas A & M University.

Again this year, Texas continued to support three final year students of the Faculty to do their final year first semester studies at the Texas A & M University. Plans are also under way for three students to be supported by Texas to do their first semester studies in Texas in their final year class. With the support of Texas Instruments Inc (Dallas TX), the Department of Electrical/Electronic Engineering has established a VLSI laboratory for both teaching and research.

The Faculty continued its collaboration with the VRA and the ECG and initiated collaboration with GRIDCO. The ECG is establishing a high voltage laboratory for the Department of Electrical/Electronic Engineering. The ECG has taken delivery of the laboratory equipment and works have started for the installation and commissioning.

SERVICE TO THE COMMUNITY

The Faculty staff continued to render services to the nation through consultancy services to the University and outsiders in areas of electrical, electronic, computer and telecommunication engineering and through membership on the National Board of Professional and Technicians Examinations (NABTEX) and the National Digital Broadcasting Migration Technical Committee.

INCOME GENERATION AND DONATIONS

Production units and consultancy services constitute the main income generating activities. The active production units are motor rewinding unit which rewinds electric motors, generators, transformers and similar electrical devices which depend on energising coils for their operation, and public address unit which provides public address and sound system for public functions.

In the year under review, Millicom Ghana Ltd instituted a yearly award of GH¢1,000.00 each to the best female and the best overall final year Telecommunication Engineering students.

University of Electronic Science and Technology of China (UESTC) has awarded scholarships to four academic staff to undertake postgraduate studies in Computer and Telecommunication Engineering.

Students of the Faculty continued to benefit from the under listed awards:

- Opoku Transport Award of GH¢500.00 to the best third year student of Electrical/Electronic Engineering.
- Bamfo Kwakye Memorial Scholarship yearly award of GH¢1,500.00 for third year brilliant but needy students of the Faculty.

FACULTY OF CIVIL AND GEOMATIC ENGINEERING
DEPARTMENT OF CIVIL ENGINEERING
INTRODUCTION

The undergraduate programme in Civil Engineering was one of the first programmes that KNUST run jointly with the University of London until the latter attained an independent University status in 1961. Recently, since the reorganization of KNUST in 2005, the Civil Engineering Department together with the Department of Geomatic Engineering and Geological Engineering now constitute the Faculty of Civil and Geomatic Engineering in the College of Engineering of KNUST. The Civil Engineering Department focuses on undergraduate and postgraduate training and it is the main source of Civil Engineers for industry. This report looks briefly at the incremental changes that have occurred in the Department during the 2009/2010 academic year.

PROGRAMMES OFFERED

Undergraduate Programme

The Department continues to run the four-year undergraduate B.Sc degree programme in Civil Engineering. The enrolment in the BSc. Civil Engineering programme for the academic year is shown in Table 1. It is significant to note a fall in enrolment during the year to 545 due to the reduction in intake in the 2008/2009 academic year arising out of facilities constraint. The average class size is therefore 136 which is still considered high for an engineering programme with the level of facilities available.

TABLE 1 UNDERGRADUATE ENROLMENT IN CIVIL ENGINEERING FOR 2009/2010

<i>Year</i>	<i>Number</i>		<i>Year</i>	<i>Number</i>
Year 1	166		Year 4	141
Year 2	80		Year 5	26
Year 3	123		Year 6	9
			Total	545

Admission to the Department continues to be highly competitive and the “cut-off” depends on the number and caliber of candidates applying in a particular year. The bulk majority of students enter from the SSS stream in accordance with entry requirements. A small percentage of students entered as mature students who satisfied the minimum conditions for that category of applicants.

Post Graduate Programmes

The Department runs three taught MSc courses in addition to MPhil and PhD programmes by research. The total enrolment in post graduate programmes dropped slightly to 66 at the beginning of the academic year. The breakdown of the enrolment in the individual programmes for the 2009/2010 academic year is shown in Table 2. Enrolment in postgraduate programmes now accounts for about 11% of total enrolment in the Department.

TABLE 2 POSTGRADUATE PROGRAMMES AND ENROLMENT

<i>Postgraduate Programme</i>	<i>Enrolment in 2009/2010</i>
MSc, Water Supply and Environmental Sanitation	20
MSc, Water Resources Engineering and Management	11
MSc, Road and Transportation Engineering	22
MPhil, (Structures, Geotech, Transportation etc)	3
PhD, (Structures, Water, Transportation, Geotech etc)	10
Total	66

ACADEMIC AND SENIOR SUPPORT STAFF

The academic staff strength in the Department dropped to 22 during the year. This was due to Mr. A. O Anakwa retiring from the University and the passing away of Dr. I.K. Nyameche without a replacement. Prof. C.K. Kankam resumed duty from Sabbatical leave during the year while Mr. S.K. Ahiamadi and Mr. Emmanuel Donkor proceeded on study leave. There is now only one academic staff on contract and one still on sabbatical leave as summarized in Table 3

TABLE 3 STATUS OF ACADEMIC STAFF

<i>Regular Continuing</i>	<i>Staff on Contract</i>	<i>Staff on Sabbatical Leave</i>	<i>Staff on Full Time Study Leave</i>	<i>Staff in Split PhD</i>	<i>Total</i>
15	1	1	3	2	22

The student:lecturer ratio for the department based on undergraduate student enrolment improved marginally to 24.8:1 on account of the reduced enrolment rather than increasing staff strength. During the year the quality of academic staff as measured by the status of academic staff improved. One more academic staff member was promoted to the rank of Associate Professor while 1 staff was upgraded to Senior Lecturer. Currently, 55% of academic staff are above the rank of lecturer while the Professorial rank has improved to about 23% of total academic staff.

<i>Rank</i>	<i>Number</i>	<i>Percentage</i>
Full Professor	1	4.5
		%
Associate Professor	4	18.2
		%
Senior Lecturer	7	31.8
		%
Lecturer	10	45.5
		%
Total	22	100.0
		%

On the professional level, the Department now has 3 Fellows of the Ghana Institution of Engineers on its academic staff.

The academic work is supported by a technical staff consisting of five technicians led by a Senior Technician with a BSc degree in civil engineering. The administrative work is organized by the departmental administrative officer of Senior Administrative Assistant grade.

RESEARCH

For the purposes of organizing teaching and research, the Civil Engineering Department is organized into five sections which coincide with the traditional areas of specialization in civil engineering practice.

- Structural Engineering
- Geotechnical Engineering
- Highway and Transport Engineering
- Water Resources Engineering
- Environmental Quality Engineering

Each section has a sectional head who coordinates activities of the section. Most of the courses at the undergraduate level in the department fall under one of the sections. The major research output during the year is indicated by the partial list of publications in Section 6.

RESEARCH

The research focus has not changed. Research is on structural and material engineering. The research area includes the theoretical and experimental analysis of strength characteristics of reinforcing steel rods milled from scrap metals; the use of these construction steels for the improvement of structural durability and reliability characteristics of reinforced prestressed concrete beams, columns and slabs, especially slabs reinforced in both directions and subjected to long-term service loads. Some of the current structural engineering research involves the use of low density polyethylene sheets to strengthen reinforced concrete beams and slabs. Other important research activities include the use of local materials (bamboo, palm kernel additives etc) as reinforcement material for concrete, investigating the engineering properties of sandcrete blocks and the performance of pavement blocks. There is also research work on the suitability of weathered granite, recycled concrete and phyllite aggregates for structural concrete design and analysis. Furthermore, the section is conducting research into the numerical simulation of the seismic behaviour of existing reinforced concrete frame buildings subjected to earthquake loads in Ghana.

GEOTECHNICAL ENGINEERING DIVISION RESEARCH ACTIVITIES

During the period, research on the use of the Dynamic Cone Penetrometer as a simple and economical in-situ testing equipment for foundation design of simple structures continued. .

The Division also combines with the Highway and Transportation Engineering Division to constitute the Geotechnical and Transportation Research Group which is conducting various studies into the use of local resources for the construction of rural roads. The study, which is on-going seeks to support employment creation in construction through the promoting of the use of labour-based methods. The section is collaborating with the ILO and the Department of Feeder Roads to conduct research into an alternative surfacing technology for feeder roads in view of the high life cycle costs of gravel and earth surfaced feeder road as the high initial construction cost of “chip sealed” feeder roads. The section is collaborating with the GHA in research into using the DCP to determining the resilient moduli of subgrade through a correlation with the Falling Weight Deflectometer. The Department continues to host the Ghana Geotechnical Society which is a member of the International Society of Soil Mechanics and Geotechnical Engineering.

HIGHWAY AND TRANSPORTATION ENGINEERING RESEARCH

The division continued its research into traffic and traffic accidents trends in different cities in Ghana. Over the past year it has concentrated its efforts at traffic studies in Kumasi especially at the various signalized intersections. It has conducted studies into public passenger transport in Kumasi and how the operations of the Metro Mass Transit can be improved

WATER RESOURCES ENGINEERING RESEARCH

- Performance of small reservoirs in Ghana.
- Productivity of stored water in small reservoirs in Ghana.
- Assessment of water balance in Lake Bosomtwi.
- Hydrogeological and Hydrochemical framework of groundwater for irrigation in the White Volta.

- Assessing the long –term benefit of rainwater harvesting in the hostels of KNUST.
- Modeling of Urban flooding.
- Approximate models for simulating small perturbations in open channel flow.
- Assessment of Water Supply situation in Ho Township.
- Streamflow Measurement and quality analysis of Wiwi stream.
- Water Management and Harvesting practices in rural Communities.
- Assessment of water and Sanitation facilities of Primary and Junior High Schools in Communities close to KNUST Campus.

ENVIRONMENTAL QUALITY ENGINEERING

During the year, the section was headed by Dr. K. Britwum-Nyarko

RESEARCH

- Water Quality Assessment of selected surface water bodies in the Kumasi metropolis
- Rain water harvesting
- Water quality monitoring and assessment of wastewater treatment plants of mining Industries.
- Adsorptive removal of contaminants (fluoride, arsenic, manganese and iron) in groundwater used for drinking water supply.
- Water Quality fluctuations in distribution lines of GWCL – causes, effects and repercussions.
- Wastewater treatment and re-use in aqua-culture
- Municipal solid waste management
- Energy generation from combustion of plastic waste bags and sachets
- Pathogen removal mechanisms in macrophyte and algal waste stabilization ponds.
- Life cycle costing of water, sanitation and hygiene services
 - a. Cost and functionality of community managed piped systems –
 - b. Cost of water service delivery for various technological options
 - c. Cost and services received from various water technologies
- Water pricing, subsidies and cost recovery for sustainable water service delivery.
- Public private partnerships and regulation for water supply service delivery
- Public private partnerships for solid waste management

SUPPORT TO THE DEPARTMENT

The Department continues to benefit from the benevolence of certain institutions and organizations. The key institutions and the nature of the service provided to the Department is shown in the table below:

No.	Description	Nature of Assistance
1.	The Ministry of Transportation	Support for the M.Sc in Road and Transportation Engineering. Under the Urban Transport Project.
2.	NUFFIC, Netherlands	A grant for refurbishing the Hydraulic Laboratory. Establishment of the MSc programmes in Water Resources Engineering and Sanitation,
3.	UNESCO-IHE Global Partnership Fund	Support for postgraduate research into filters for fluoride removal in drinking water and research into water partnerships (UPaRF),

4	EU- support for SWITCH	Support for training, research and best practice demonstration to water sector practitioners
5.	ABP Consult	Support for Civil Engineering Design Course in the BSc programme
6.	Comptran Engineering Services	Support for Transportation Design Project course in the MSc. Road and Transportation Engineering Programme

During the year the department was supported by various construction and consulting firms in providing hosting for our students during the vacation training course. This includes the GHA, DUR and DFR of the Ministry of Road and Highways as well as WBHO of S

COLLABORATIONS

A memorandum of understanding for collaboration between the Department and MCEER in the State University of New York in Buffalo to collaborate in the area of earthquake engineering. The MoU is intended to allow MCEER to share her expertise in earthquake resilience enhancement and for KNUST to build her capacity in the area of earthquake engineering. The recent earthquake disasters in different parts of the world have made this need even more urgent.

The Memorandum of Understanding signed with the Indian Institute of Technology, Madras in Chennai to support the MSc programme in Road and Transportation Engineering to introduce new courses and to research into the area of Urban Transport, is entering into the implementation this year. The Department continues to benefit from the collaboration with the University of Birmingham in the Road and Transportation Engineering Programme. In the Water Supply and Sanitation and in the Water Resources Engineering and Management, the department continues to collaborate with IHE Delft and TU Delft. The Department has recently signed a collaborative research agreement with the International Research Centre (IRC), Netherlands under the project called WASHCOST to research into unit cost of water sanitation and hygiene service. It has also received support for postgraduate research into filter design, water partnerships and road traffic accident injuries.

DEPARTMENT OF GEOMATIC ENGINEERING BACKGROUND

The Department of Geomatic is under the Faculty of Civil and Geomatic Engineering in the College of Engineering. Our Mission is to be an institution of excellence for Teaching, Research and Community Service in Geo-information.

Geomatic Engineering is a field of activity that integrates the acquisition, processing, analysis, display and management of spatial information. It includes the disciplines of Photogrammetry and Remote Sensing, Land and Engineering Surveying, Geographic Information Systems (GIS), Cartography, Geodesy, Hydrography, Cadastral Surveying and Land Information Management. It is an exciting grouping of subjects in the spatial and environmental information sciences with a broad range of employment opportunities as well as one with challenging pure and applied research problems in a vast range of (largely interdisciplinary) fields.

Geomatic Engineers use sophisticated measurement and data collection techniques (e.g. satellite positioning and digital imaging) and modern computer-based data management and visualization tools to play a key role in a wide range of important practical projects in fields such as:

- Design, construction and management of complex civil engineering projects
- Acquisition of data for, and production of, digital and paper maps and charts

- Management of assets, such as land, property, and transportation infrastructure (especially through the use of GIS)
- Monitoring of our changing environment using satellite and airborne remote sensing management of natural resources, both on land and offshore
- Planning urban environments (e.g. location of schools, hospitals and supermarkets)
- Understanding and predicting earthquakes by measuring very small land movements
- Ensuring the safety of man-made structures (such as bridges, dams and large buildings) by monitoring their deformation
- Exploration and engineering for the production of oil and gas, especially offshore
- Dimensional control of industrial components
- Measurement in hazardous environments such as in the nuclear power industry and on oil platforms
- Provision of measurement information in medicine, archaeology and architecture

The very practical nature of Geomatic Engineering as recognized by our Department has required a considerable number of subjects to be taught, together with an uncommonly lengthy field practical hours, with a view to producing sufficiently professionally skilled graduate surveyors.

The Department has three sections namely:

- Land Surveying and Land Management
- Geodesy and Hydrography
- Photogrammetry and Remote Sensing
- GIS, Cartography and IT

The Department is currently offering postgraduate degrees, undergraduate degrees and special programmes categorized as follows:

- Doctor of Philosophy (PhD) - 4 years
- Master of Philosophy (MPhil) - 2 years
- Master of Science (MSc) - 2 years
- Bachelor of Science (BSc) Honours - 4 years
- Short Courses in Geomatic Engineering - 3 to 6 months

The Department currently has 2 - PhD candidates, 1 MPhil Candidate, 13 - MSc candidates and 304 - BSc candidates.

The PhD programmes are research-based, the MSc comprises of taught course component and a project while the undergraduate programmes are all taught courses comprising. Practical components are essential components of all courses. Field trips and vacation training programmes are integral part of our training, this enrich the practical orientation of our students. Short courses are organised for various Departments/ Organisations with special needs.

SERVICE COURSES

The year under review had an expansion in the provision of service courses in postgraduate and undergraduate as follows:

POSTGRADUATE MSC DEGREE PROGRAMMES

For the postgraduate MSc degree programmes the following Departments benefited from one or more of our services course:

- Department of Civil Engineering

- Department of Land Economy
- Department of Environmental Science
- Department of Planning
- Department of Planning (Spring programme)

UNDERGRADUATE BSc DEGREE PROGRAMMES

For the undergraduate BSc degree programmes the following Departments benefited from one or more of our services course:

- Department of Architecture
- Department of Geography
- Department of Planning
- Department of Land Economy
- Department of Agriculture Science
- Department of Environmental Science
- Department of Renewable Natural Resources
- Department of Physics
- Department of Civil Engineering
- Department of Building Technology
- Department of Petroleum Engineering
- Department of Agricultural Engineering
- Department of Planning (Spring programme)

In all, over one hundred (100) postgraduate students are involved in the postgraduate service courses and over one thousand (1,000) undergraduate students are involved in the undergraduate service courses per semester, which requires practical field surveying with the use of GPS, Theodolite and Total Station instruments; as well as the use of the GIS laboratory for GIS practicals.

Despite the increased number of students, the Department has to cope with crippling problem of inadequate and dwindling surveying equipment. This is a major setback for effective teaching and learning. The equipment situation is such that, if nothing is done to upgrade it, the Department may not be in a position to offer the required practical training for our service courses in the coming years.

RESEARCH

The Department carries out research in the following areas:

- Global Positioning Systems (GPS) and its related application;
- Geographic Information Systems (GIS) as a management tool for efficient: Land Registration and Management, Natural Resource Management, Utility Services Development and Management, and Health
- Mapping and Cadastral Surveying; and
- Cartographic Visualization and Computer Programming
- Photogrammetry

COLLABORATION

The Department of Geomatic Engineering, the Institute of Renewable and Natural Resources (IRNR) and the International Institute for Geo-Information Science and Earth Observation (ITC), The Netherlands jointly runs MSc programme in GISNaturem.

The Department is in the process of establishing collaboration with the Geomatics Engineering Department of the University of Calgary, Canada. In connection with this, Dr. Michael Barry, Associate Head Undergraduate Studies and John Holmlund Chair in Land Tenure and Cadastral Systems visited KNUST and delivered a lecture on Talking Titler on February 12, 2009.

SERVICE TO THE COMMUNITY AND INCOME GENERATION

Members of staff continue to provide services through their membership of Academic societies and professional bodies. Members of staff of Department of Geomatic Engineering are affiliated to the Ghana Institution of Surveyors (GhIS). The Department serves on the National Council of the Ghana Institution of Surveyors.

SERVICE TO THE NATION

- The Department has been engaged in carrying out the Presidential Special Initiative on oil palm in the country.
- Two members of staff are members of the National Continental shelf Project.
- Two members of Staff our staff participated in Seismic data collection for the delineation of Ghana's Continental shelf.
- A member of Staff serves on the Ashanti Regional Lands Commission Board.
- A member of Staff serves on the Board of the School of Mapping and Surveying.
- Members of the Department serve as Examiners for various tertiary institutions and for the Board for Professional and Technician examinations.

In the year under review the Department undertook the following consultancies for the University.

SERVICE TO THE UNIVERSITY

- Infrastructural map for the College of Engineering
- Utility Mapping on Campus
- Demarcation, survey and provision of spot levels and base maps for new hostels
- Encroachment Surveys on Campus
- GIS training

BENEFACTORS

We are also thankful to all the survey firms and establishments, who welcome our students on their field trips and technical attachments Special thank you goes to Newmont Ghana Gold, Survey Department, Rudan Limited, Sambus Limited, etc., without your benevolent support our training would not be complete.

The Department is also grateful to Trimble Navigation Limited of United States of America for their generous donation of Refurbished Trimble GNSS R8 (GPS), refurbished Trimble Total Station and a set of accessories including office software, tribrachs, tripods, detailing poles and a set of communicating equipment. The equipment worth thousands of Ghana Cedis came at a time the Department is in die need of all kinds of survey equipment due to pressure on its outdated stock and depleting resources in the face of increasing student population. We hope other such well meaning organisations will come to our rescue.

DEPARTMENT OF GEOLOGICAL ENGINEERING

INTRODUCTION

The Geological Engineering programme aims at providing expertise in the exploration and exploitation of natural resources and finding effective solutions to geo-environmental problems associated with the exploitation and utilization of natural resources as in mining, construction, water, petroleum and related industries.

PROGRAMMES OFFERED

The Department offers a four-year programme leading to an award of BSc Degree in Geological Engineering. The enrolment in the programme for the academic year is as follows:

Year	Number of Students
One	77
Two	35
Three	45
Four	62

ACADEMIC STAFF

The Academic Staff strength of the Department is six (6), out of which two (2) are on contract and one (1) a part-time lecturer. The current average staff-student-ratio of 1:42 is an increase over last year of 1:39. The Department has recently recommended for appointment two new academic staff members whilst further efforts are being made to engage some more academic staff personnel. The academic work is supported by a technician.

RESEARCH ACTIVITIES

During the period some modest research work continued to be carried out by members of staff in various areas from which some journal and conference publications were made. Below are the details of the research areas:

- Characterization of lithomargic clay deposits and its implications for industrial usage
- Management of small-scale mining operations in Ghana
- Tailings management by the thickened paste method
- Climate change and its effect on groundwater recharge
- Groundwater pollution and protection

SYNERGISTIC ACTIVITIES

Members of staff attended workshops and made presentations as outlined below:

- Gawu, S.K.Y and Appiah-Adjei, E.K (Participants), Mining Sector Support Conference and Exhibition, International Conference Centre, Accra, Ghana, May, 2010.
- Gawu, S.K.Y. (Participant), Workshop on Mining Cadastre Implementation in Ghana, October 22, 2009, Accra, Ghana.
- Dr. Bukari Ali made a presentation at the recent World Water Day (22/3/2010) in Kumasi with GWCL.

During the academic year, the Department organized seminars on topical issues with resource personnel from Geological Survey Dept. and Newmont Gold Ghana Ltd. Efforts are also being made to collaborate with the University of Calgary in Canada to mount an MSc program in Hydrogeology.

TECHNOLOGY CONSULTANCY CENTRE (TCC)

INTRODUCTION

The Technology Consultancy Centre (TCC) established by act of parliament in 1972, continues to serve as a catalyst for networking between the teaching Departments of the University in general and the College of Engineering in particular, entrepreneurs and the community. TCC plays a critical role as the research and business innovation centre of the College with its main activities being research and development transfer of technology and innovation aimed at harnessing science technology and innovation for solving basic needs of food, energy, water, health, housing enterprise development, wealth creation and poverty reduction. The Centre effectively transfers its innovations through demand-driven technologies under five thematic areas:

Engineering for industrialization,

- Suame Intermediate Technology Transfer Unit (Suame ITTU)
- Energy Technology Development

Food and Agribusiness,

- Food Processing and Products Development
- Nutrition for Better Living
- Commercial Development of Farmer-Based Organisations

Ceramics Small and Medium Scale Enterprises,

- Ceramics
- Energy Saving Devices
- Bricks and Tiles Production
- Small and Medium Scale Enterprises Development

Graduate Entrepreneurship Training/Incubation

Consultancy, Technology Policy Analysis and Advocacy

Details of activities of the various themes are listed in section 2 of this report.

INFRASTRUCTURE DEVELOPMENT

The Centre runs a number of workshops in and out of campus. These include Food Processing and Ceramics workshops on campus, the ITTU in Suame, Proposed TCC-KNUST-IBIS TEK Technology Park at Adako Jachie and Bricks Manufacturing Workshop at Afari. The year under review has seen the completion of a GH¢7,000.00 renovation work at the Suame ITTU with internally generate TCC funds while renovation work on TCC Office Annex is underway. Another GH¢12,000 has so far been spent on renovation work for phase 1 of KNUST-IBIS TEK at Adako Jachie from TCC's internally generated funds.

LINKS WITH UNIVERSITIES AND INDUSTRIES

International Collaborations

The Centre continues to offers opportunities to Small and medium scale entrepreneurs and students to incubate and grow their innovations, A number of universities and private industries have visited the Centre and continue to collaborate on establishment of incubation centres, on-the-job and entrepreneurial training of students and SMEs.

The year under review has seen a lot of Africa firsts. Notable are:

TCC-KNUST/IBIS TEK Technology Park: A Public Private Partnership

Sod cutting by the Deputy Minister for Environment of Science Technology (MEST) on behalf of the Vice President of the Republic of Ghana for the commencement of work on Ghana's first and Africa's second Technology Park south of the Sahara on 18th February, 2010. Memorandum of understanding between KNUST and IBIS TEK has been signed and a two million dollar (US\$ 2,000,000.00) loan facility has been sought for this purpose. Initial determination of shareholder equity distribution is sixty percent (60%) to IBIS TEK and forty percent (40%) to KNUST with subsequent equity dilution parameters to be defined at a later time.

The Park will bring together a community of leading-edge thinkers across all scientific, technological and industrial disciplines in an environment primed for collaboration and nurturing of ideas. This will promote greater foundational growth for companies & firms that will reside at the Park and enhance technology-based industries with research development capabilities and training while partnering with industry leaders.

TCC-World Bank Roundtable on Science Technology and Innovation Development Dialogue, April, 2009 - March, 2010

The University (KNUST), through its TCC and in partnership with the World Bank, National Development Planning Commission (NDPC), Science and Technology Policy Research Institute (STEPRI) of CSIR, organised a one day roundtable of policy makers, industrialists, development partners, NGO representatives and academics, to examine ways in which the Ghana STI Development Policy Framework can be used effectively to accelerate the modernisation of Ghana's economy, improving the living conditions, solving social problems, addressing basic needs and increasing our competitiveness. This served as the catalyst for the constitution of National Science, Technology and Innovation Policy Drafting Committee by MEST and presentation of a National Policy Document Science Technology and Innovation at a National Development Dialogue Conference in March, 2010.

TCC-MIT International Development Design Summit, July-August, 2009

The University represented by TCC and in collaboration with faculty members from Massachusetts Institute of Technology (MIT) organised Africa's first International Development Design Summit (IDDS). The IDDS, unlike most academic conferences or technology workshops, emphasises the development of prototypes through creative processes where ideas are drawn from several models of innovation, design and community empowerment: co-creation, cross-disciplinary collaborations and crowd sourcing as well as developing products. It is part of the revolution in design that aims to create equity in the distribution of research and development resources by focusing on solving basic needs of the poor.

This International Workshop attracted over 90 participants and organizers representing 21 countries from around the world: India, Ghana, United States, United Kingdom, Zambia, Sierra Leone, Guatemala, Ireland, China, Malaysia, Brazil, Malawi, Peru, Pakistan, Canada, Colombia, Nigeria, Guinea, Singapore, Tanzania, Uganda. The 2009 summit was unique in that it was hosted outside of the United States for the first time.

TCC- Millennium Development Authority (MiDA) Project, 2009-2010

In September, 2008 the Technology Consultancy Centre won a competitive bid issued by the Millennium Development Authority (MiDA) and offered a GH¢220,000.00 contract as one of its Training and Technical Services Provider (TTSPs) to train Farmer Based Organizations (FBOs) in

the Sekyere West District of the Afram Basin. Collectively called the Commercial Development of Farmer-Based Organizations (CDFO), the primary objective of this MiDA training activities is to accelerate the development of commercially oriented skills and capacity among FBOs including the ability of the group members to produce market responsive outputs in an efficient manner. This contract was renewed in August 2009,

To date the centre has trained one thousand, four hundred and fifty (1,450) farmers from twenty-nine (29) FBOs in the Sekyere West and Ejura Sekyeredumasi Districts of the Ashanti Region. This has been the major source of budgetary support for the Centre and income has generated substantive amount for the University, and it is on-going.

TCC-EUSponsored Use of Jatropha Plant for Sustainable Renewable Energy and Sustaining Rural Livelihoods Project

Under the above €2.4 million European Union Sponsored Jatropha Project, the TCC together with partners from Savannah Agricultural Research Institute (SARI), Ministry of Food and Agriculture, and New Energy a Tamale-based NGO is collaborating with the University of Sassari in Italy. The project, which started in April 2009, has the primary goal of affording rural communities, access to improved modern and renewable energy services and opportunities for community-based groups to improve their livelihoods. The Centre's role in the project is in the area of research and development in establishing optimum agronomic practices for the cultivation of jatropha and design and manufacture of Jatropha processing machinery and developing optimum extraction processes for Jatropha oil. The Centre through its Suame ITTU is collaborating with the Department of Agricultural Engineering of the College of Engineering, KNUST in the design and manufacturing of prototype machines.

TCC-University of Pennsylvania (UPENN), International Development Summer Institute Africa Program (IDSI-AP): A Service Learning and Training Program for Undergraduates, 2010 -

The KNUST represented by TCC in collaboration with Penn Engineering and the African Studies Centre are implementing and four-week training International Development Summer Institute – Africa Program” (IDSI-AP). The IDSI-AP program seeks to recruit 21 undergraduates from across UPenn and KNUST. The object of the joint programme is to offer UPENN and KNUST students a short-term overseas option, rigorous active-learning model that will allow students to translate knowledge into practice in a global context establish opportunities for both faculty and students to engage in collaborative research and intercultural dialogue. This is with funding from Hewlett.

TCC-SAP AG, Walldorf, Germany Shea Butter Project, April 2010-2013

The College of Engineering represented by TCC is collaborating with SAP AG, World's leading provider of business software with customers in more than 120 countries. The goal of the TCCSAP-AG Project is to introduce improved sheabutter extraction technology to sheabutter processors in the Northern Region, so as to produce high quality organic sheabutter for export to the growing cosmetic markets in Europe and USA to increase their income and improve their livelihood. Funding is being provided by SAP-AG.

TCC, UNESCO collaboration on Technology and Poverty Reduction and the Millennium Development Goals

The Technology Consultancy Centre has a track record of over 36 years expertise in the development and transfer of appropriate technologies for enterprise development and job creation. These attributes of the Centre incessantly attract national and international development partners such as United Nations Education Scientific and Cultural Organisation (UNESCO to collaborate with TCC to promote technologies for poverty reduction, small enterprise development for wealth creation in Africa and other

developing countries. These objectives are in line with the United Nations Economic Development Agenda through which the UN has challenged scientists and technologists to: *“Help mobilize global science and technology to tackle the interlocking crises of hunger, disease, environmental degradation and conflict that are holding back the developing world”*.

UNIVERSITY COLLABORATION

TCC/Energy Centre of College of Engineering collaboration

In recent time, the Centre has been working in partnership with the Energy Centre of the College of Engineering on Energy Access. The Centre has been working closely with other researchers at the Energy Centre on the development of methods, tools and investment models for increasing access to energy services, particularly in peri-urban and rural communities in Ghana and West Africa. In this regard, two proposals have been developed and submitted to both the EU Energy Initiative Partnership Dialogue

TCC-Department of Biochemistry collaboration on MSc Nutrition and Dietetics

Prehnology

The Centre is collaborating with the Department of Biochemistry and Biotechnology to develop a two year Master of Science programme in Nutrition and Dietetics.

RESEARCH AND DEVELOPMENT, EXTENSION, INNOVATIONS AND AFFILIATIONS

Details of research, innovations and extension work conducted at the Centre are presented by the various sections as follows:

FOOD AND AGRIBUSINESS

This Department comprises Agriculture Productivity Improvement and Commercialisation, Post Harvest Management, Food Processing and Nutrition. Food and Agribusiness department seeks to promote good practices in food production and agro-forestry, enhance nutrition research and communication and encourage the establishment of viable agribusiness with special emphasis on gender empowerment.

For the past one year, this section has sought for funding and conducts training programmes for farmer based organizations in Ashanti and collaborates with SAR-CSIR, MOFA and New Energy on Jatropha project in the Northern Ghana.

TEACHING

To bring its industrial experience to bear on University teaching Dr Peggy Oti-Boateng teaches Human Nutrition, supervises students' research projects and offers support in the field of nutrition and dietetics to the Department of Biochemistry and Biotechnology. She is also an external examiner for the Department of Community Health and Nutrition at the University of Development Studies in Tamale.

The Agro-forestry section of this Department also promotes and disseminates sustainable livelihood strategies for rural poverty reduction through sustainable natural resources management. This is being done through the provision of assistance to farm families in selected communities and in building their capacities to manage resources sustainably. Mr Evans Dawoe teaches at the department of Agroforestry at FRNR.

The Centre also assists and trains a number of project students from the Departments of Chemistry, Mechanical Engineering, Chemical Engineering Agricultural Engineering and Renewable Natural Resources in the intermediate moisture content (IMC) extraction technology developed by TCC. These research students employ the IMC for extraction of jatropha oil and other inedible oils for

use as bio-fuels in their energy research projects. Dr George Obeng teaches at the Department of Mechanical Engineering.

CERAMIC AND SMEs

The Ceramics Section's activities and operations for the year under review, has been eventful and fulfilling the development of three in one energy utilisation (Gas, Firewood and Electricity) Ahibenso Charcoal Stove Project.

Ahibenso Charcoal Stove Project

The stove technology was transferred to artisans (sheet metal workers) of Suame-Magazine as part of the TCC's extension services to transfer proven technologies to industry. Many more artisans have been trained in the production of the stove shell, the inside linings using ceramic components, management and marketing skills. All participants were issued with certificate.

SUAME ITTU

During the year under review the Suame ITTU coordinated the successful organisation of a premier international forum, International Development Design Summit (IDDS) in collaboration with the Massachusetts Institute of Technology (MIT) in Cambridge, U.S.A.

The summit provided a platform for Students, Faculty from Universities, Designers, Development Workers, Technicians and people interested in technologies for international development in the spirit of collaboration, not competition, to use their knowledge to design and create technologies for international development. There were 60 participants from 21 countries around the world. Over 10 technologies/innovations were developed.

GRADUATE ENTREPRENEURSHIP TRAINING

The outpouring of a large volume of final year students' projects from the respective Colleges of KNUST, each year, (without a significant impact on the industrial development of Ghana) has influenced a recent decision by the TCC to revive an Entrepreneurship Development Exposure/Training Programme which the Centre had initiated two decades ago for the benefit of final year students of this University. This has lead to the establishment of a Technology Centre which will house incubation units for aspiring student, faculty an other entrepreneurs. This is being done in collaboration with the KNUST School of Business and other Colleges.

COLLEGE OF HEALTH SCIENCES

INTRODUCTION

The College of Health Sciences comprises the Faculty of Pharmacy and Pharmaceutical Sciences, Faculty of Allied Health Sciences, School of Medical Sciences, Dental School, School of Veterinary Medicine and Kumasi Centre for Collaborative Research in Tropical Medicine. During the year under review the College vigorously pursued its mandate of training the specialized and graduate manpower for the health sector in Ghana and Africa, through teaching, research and service to the community.

COLLEGE ADMINISTRATION

Provost	-	Professor Peter Donkor
College Registrar	-	Mr. H. H. Akosah
College Accountant	-	Mr. Johnson Owusu
College Librarian	-	Mr. Kwabena Ofori Asiamah

ACTIVITIES

INFRASTRUCTURAL PROJECTS

- Work on the Dental Clinical School is near completion.
- Work on the Faculty of Allied Health Sciences building is in progress.
- Plans are far advanced to put up a College Classroom and Library Complex. Staff at the Development Office are currently working on the drawings and site for the building.

CLINICAL HOSTEL

A contract has been awarded for the 3rd phase of the Clinical Students Hostel at KATH. The project is being funded by the GETFund at the cost of GH¢250, 000.00. There is also construction of pavement for the Clinical Hostel at the cost of GH¢50,000.00. This is being funded from Internally Generated Fund.

OPEN EDUCATIONAL RESOURCES (OER) PROJECT

Five universities, comprising KNUST, University of Ghana, the University of Cape Town, the University of Western Cape, and the University of Michigan have started the Open Educational Resources project aimed at making the creation and publication of open educational resources an integral part of the university knowledge creation and dissemination processes. Students in the collaborating institutions are able to access lecture notes, classroom discussions, and laboratory work of participating institutions via the internet. A policy document on OER has been drafted and submitted for approval. A sample of the completed programmes on OER can be accessed freely on the KNUST website: web.knust.edu.gh/oer.

The College donated four (4) laptops and other equipment valued at \$10,000 to the Department of Communication Design of the College of Art and Social Sciences to support OER activity in that Department. The OER grant was extended for another 2 years 2010-2011. An amount of \$2 million was awarded by the Hewlett Foundation, USA to KNUST and other partner institutions to expand activity in OER production.

ADMER – GHANA PROJECT

A grant has been obtained from DANIDA for ADMER – GHANA PROJECT. The project is a research capacity building project on antibiotic drug use monitoring and evaluation of resistance in Ghana. The project partners include the Department of Microbiology, UGMS, Food and Drugs Board, Ghana National Drugs Programme, Department of Medical Microbiology, SMS, KNUST,

Faculty of Pharmacy, KNUST and Danish partners, Staten Serum Institute and the University of Copenhagen.

A total of six (6) Ghanaian PhD fellows and twelve (12) MPhil/MSc candidates will be trained through this grant in both University of Ghana and Kwame Nkrumah University of Science and Technology. In addition, the project will provide a platform for continued research on antibiotic resistance in Ghana.

The PhD positions will be advertised soon for successful candidates to start in 2010. The positions will be open to all applicants within the partners institutions i.e College of Health Sciences, UG, College of Health Sciences, KNUST and the other partners in Ghana. Plans are underway to have an inception workshop in March this year.

HUMAN RESOURCE FOR HEALTH PROJECT – BILL & MELINDA GATES FOUNDATION

A grant of \$3 million has been received from the Bill and Melinda Gates Foundation for the Human Resource for Health Project. Through this project, the University of Michigan is collaborating with KNUST, University of Ghana and the Ministry of Health to strengthen human resource for health in Ghana. The goal of this project is to design a roadmap for academic and government collaboration to strengthen the training and deployment of health workers in Ghana.

The project is ongoing. Currently, efforts are being made to set up skills laboratory for health science students training. This is being done with assistance from the University of Michigan, U.S.A.

2ND SCIENTIFIC CONFERENCE

The College organized its 2nd Scientific Conference at Miklin hotel, Kumasi from 10th to 11th September, 2009 under the theme ‘Lifestyle and Non-Communicable Diseases: Diabetes, Hypertension, Obesity and Cancers’. Forty-Eight (48) scientific papers were presented at the conference.

MEMORANDUM OF UNDERSTANDING (MOU) BETWEEN KNUST AND KATH

An MOU was signed between KNUST and KATH on 9th March, 2009 aimed at strengthening the relationship between KNUST and KATH in the areas of teaching, research and service provision which will lead to improved healthcare delivery, enhanced recruitment, retention of staff, and greater operational efficiency.

STAFF DEVELOPMENT

Seven (7) PhDs students are undergoing training in institutions of higher learning in USA, Europe and New Zealand. The students are from the Faculty of Pharmacy, Faculty of Allied Health Sciences and the School of Medical Sciences. The College was awarded a PhD scholarship by the Dalian Medical University.

RETREAT

A day’s retreat was organized for Deans and other Principal Officers of the College at Feyiase Forest Gate Lodge on 8th May, 2009. The retreat was aimed at identifying strategies to reposition the College towards attaining its strategic objectives.

CURRICULUM DEVELOPMENT

Plans are being made to harmonize the teaching of Microbiology in the College.

INTRODUCTION OF NEW PROGRAMMES

- MSc degree in Disability, Rehabilitation and Development has been mounted.
- BSc degree in Disability and Rehabilitation is to be mounted.
- Proposals have been submitted to the Planning and Resources Committee for the mounting of Top-up programmes leading to the award of Diploma and BSc degree in Midwifery as well as BSc degree in Emergency Nursing.

A proposal for mounting of the following programmes are being considered by the College Board:

- BSc degree in General Nursing for Registered Nurses
- MSc degree in Audiology, Speech and Language Pathology

GIFTS

The College received a donation of equipment valued at \$200,000 from the University of Michigan. The equipment is to be used for training in simulation of laparoscopic procedures in Obstetrics and Gynaecology and General Surgery. The University of Michigan Dental School also donated some dental equipment, including plastic scoop and mixing pad, to the KNUST Dental School.

TEACHING FACILITIES

Microscopes and Microtomes have been purchased for the School of Veterinary Medicine.

NEW VEHICLE

The School of Veterinary Medicine has taken delivery of a Nissan Pick-Up donated to the School by the Ministry of Food and Agriculture. Contract for the purchase of two (2) new vehicles for Deans has been awarded.

FACULTY OF PHARMACY AND PHARMACEUTICAL SCIENCES

INTRODUCTION

The Faculty of Pharmacy & Pharmaceutical Sciences run two programmes – Bachelor of Pharmacy (BPharm) and Bachelor of Science degree in Herbal Medicine. The Faculty has carried out these primary responsibilities with distinction. According to the recent departmental rankings within the University, the faculty as a whole continues to discharge its responsibilities of teaching, research and extension services creditably.

CAPACITY BUILDING

One Senior Member of the Department of Pharmacology has visited the University of Michigan, USA and conducted research to enhance his skills in some experimental procedures. A second faculty member is in Michigan engaged in research to isolate compounds from marine plants. The Faculty continues to produce graduate students to contribute to the economic development of Ghana.

INFRASTRUCTURE AND TEACHING

The Faculty is continuing to replace old equipment and rehabilitate laboratories. Rehabilitation works in the laboratories of Pharmacology and Pharmaceutical Chemistry have been completed. Funds have been accessed for extension works to the Animal House. Rehabilitation works, being

carried out by three past students of the Faculty, on the Faculty's Conference Room have also been completed. Furniture for the conference room will be delivered soon.

CURRICULUM REVIEW

The Faculty has secured financial support from the World Health Organization's office in Ghana to start stakeholder consultation towards defining competences of pharmacists for the country and review of its BPharm curriculum to the Doctor of Pharmacy programme.

SERVICE TO COMMUNITY

The Faculty has continued to collaborate with the Ministry of Health and its agencies thus providing support in health delivery. Staff of the faculty also continue to serve on many important committees in the University. One staff member has been re-elected Editor in Chief of the West African Pharmaceutical Journal published by the West African Postgraduate College of Pharmacists and another serves on the WHO Expert Committee on National Drug Policies.

INTERNATIONAL COLLABORATION

Two members of the Faculty are currently developing a competency-based curriculum for pharmacy education in Namibia. The Faculty has maintained its links with Universities abroad. Staff of the Faculty continue to actively collaborate with agencies like the West African Postgraduate College of Pharmacists, the West African Health Organization and the International Federation of Pharmacists (FIP) to define the training needs of Institutions of Pharmacy and improve the quality of pharmacy education globally.

CHALLENGES

While the Faculty has made progress in staff development and rehabilitation of facilities, the situation is still below optimum. Adequate lecture room space continues to be a challenge the Faculty faces. Additional sources of income generation are required. Stable power for the equipment is urgently required. Efforts are under way to provide uninterrupted water supply to the Faculty.

DEPARTMENT OF PHARMACOGNOSY

INTRODUCTION

Pharmacognosy is a specialized area of applied science which deals with natural products, especially plants that affect the health of humans and animals. It contributes significantly to the practice of Pharmacy and Herbal Medicine programmes.

TEACHING

The Department offers various courses in Pharmacognosy as part of the 4-year Bachelor of Pharmacy (BPharm) and Bachelor of Science in Herbal Medicine (BSc Herbal Medicine) degree programmes. These courses cover areas in botany and chemistry of medicinal plants, their cultivation, evaluation and their role in promotion and maintenance of health.

At the graduate level, research training in various aspects of medicinal plants continued to be undertaken by MPhil and PhD students. Currently, there are seven postgraduate students (three MPhil and four PhD students).

MAJOR RESEARCH BY STAFF

The Department continued with its research on standardization of Ghanaian medicinal plants, phytochemical evaluation of medicinal plants with respect to essential oil constituents and other

secondary metabolites, and validation of Ghanaian indigenous plant remedies. Particular emphasis is now on indigenous plants with anti-inflammatory and wound healing activities.

PRESENTATIONS AT CONFERENCES AND SEMINARS

Sarkodie J.A., Fleischer. T.C., Sarpong, K.,Annan, K., Dickson, R. A., Komlaga, G., Woode, E. and Kuffour G (2009) A terpenoid, MLP isolated from the petroleum extract of stem bark of *Morinda lucida* shows hypoglycaemic effects in streptozotocin-induced diabetic rats. 2nd Scientific Conference of the College of Health Sciences, KNUST held at Miklin Hotel, Kumasi, Ghana 10th to 11th September 2009.

Fleischer, T.C., Mensah, M.L.K., Annan, K., Sarpong, K.,Dickson, R. A., Komlaga, G., Glah, E.D., Argyropoulou, C. and Skaltsa, H. (2009) Mosquito repellent potential of some essential oils of medicinal plants growing in Ghana. 2nd Scientific Conference of the College of Health Sciences, KNUST held at Miklin Hotel, Kumasi, Ghana 10th to 11th September 2009.

Annan, K., Gbedema, S.Y and Adu, F (2009) In vitro study to assess the antimicrobial activity of toothpaste formulated from *Garcinia kola* stem wood extract. 2nd Scientific Conference of the College of Health Sciences, KNUST held at Miklin Hotel, Kumasi, Ghana 10th to 11th September 2009.

Annan, K Gbedema, S.Y and Adu, F (2009) Antimicrobial activity and phytochemical screening of the leaves of *Duranta plumier* 2nd Scientific Conference of the College of Health Sciences, KNUST held at Miklin Hotel, Kumasi, Ghana 10th to 11th September 2009.

Komlaga, G., Papanko, D.N., Dickson, R. A., Annan, K. and Sarpong, K.(2009) Wound healing activity of *Mallotus oppositifolius* (Euphorbiaceae) Proceedings of the 10th Commonwealth Pharmaceutical Association Conference/ Pharmaceutical Society of Ghana Conferences. Accra, Ghana. August, 2009. Accra, Ghana. p 83.

Donkor, P.O., (2009) Herbal sexual enhancers on the Ghanaian market: Kumasi as a case study 10th Commonwealth Pharmaceutical Association conference held in Accra, Ghana 5th to 9th August 2009

Komlaga, D., Sarpong, K. and Aboah, K.(2009). The effects of some herbal products on urinary calculi Proceedings of the 10th Commonwealth Pharmaceutical Association Conference/Pharmaceutical Society of Ghana Conferences. Accra, Ghana. August, 2009. Accra, Ghana. p 88

Oppong,A. B. Fleischer, T. C Mensah, A. Y Mensah M. L. K, Annan, K Dickson, R. A Komlaga G andK Sarpong. (2009). Antimicrobial and phytochemical evaluation of the leaves of *Clerodendrum splendens*. Proceedings of the 10th Commonwealth Pharmaceutical Association Conference/ Pharmaceutical Society of Ghana Conferences. Accra, Ghana. August, 2009. Accra, Ghana. p 94

Annan, K. (2009) 'Friedelin: a bacterial resistance modulator from *Paullinia pinnata* L. Proceedings of the 10th Commonwealth Pharmaceutical Association Conference/Pharmaceutical Society of Ghana Conferences. Accra, Ghana. August, 2009. Accra, Ghana. p 94

Dickson, R. A.,Sarpong, K., Mensah, M. L. K Fleischer, T. C., Mensah, A. Y., Annan, K. G. Komlaga., Sam, G. H., Houghton, P. J. and. Gibbons, S (2009). Novel antimicrobial, antioxidant and resistance-modifying cassane-type furano diterpenoids from *Caesalpinia benthamiana*.

Proceedings of the 10th Commonwealth Pharmaceutical Association Conference/Pharmaceutical Society of Ghana Conferences. Accra, Ghana. August, 2009. Accra, Ghana. p 91

WORKSHOPS ATTENDED BY SENIOR MEMBERS

Workshop on Good Governance and Quality in Higher Education Management Childa Hotel Abuja, Nigeria (participant) 1st to 6th of November 2009

Development of Training modules for TMP workshop organised by West Africa Health Organization (WAHO) Ouagadougou, Burkina Faso 14th to 19th August 2009 (Annan, K. Participant)

Ghana-Michigan CHARTER Research Proposal Writing Workshop, Golden Tulip, Kumasi, 3rd – 8th August, 2009. (Komlaga, G., Participant)

Workshop on ‘Scholarly publishing for academic/research staff of KNUST’- November, 2009 Commonwealth Africa Symposium on the International Migration of Health Workers,’ Gaborone, Botswana - June, 2009 (Dickson, R. A., Participant)

UNESCO World Conference on Education for Sustainable Development. Bonn Germany 31st March – 2nd April 2009 funded by DAAD (Participant)

Under the leadership of Dr. Kofi Annan and Dr. (Mrs.) Rita Dickson, the Ghana chapter of the West African Network of Natural Products Research Scientists organized a one day symposium entitled “Updates in Natural Products Research” in the conference room of the Faculty of Pharmacy & Pharmaceutical Sciences on the 25th of March 2010. The symposium was supported by contribution from senior members in the faculty and the Vice-Chancellor’s office

MAJOR SERVICE TO THE COMMUNITY

Senior Members continued to offer services to the University in various capacities, serving on the Academic Board and its various Sub-committees, and the Faculty Board sub-committees. Services were also offered to other national and international organizations including the Pharmacy Council, Pharmaceutical Society of Ghana, the West African Postgraduate College of Pharmacists, the Traditional and Alternative Medicine Directorate (TAMD) and the Food and Drugs Board (FDB).

DEPARTMENT OF PHARMACOLOGY

INTRODUCTION

The Department plays a unique role in the University as the only department involved in the teaching of pharmacology and toxicology to almost all the students in the College of Health Sciences and to optometry students in the College of Science. The Department enjoys this special role and ensures that courses are designed to meet the needs of students in the various programmes in the college without compromising on the basic principles and implications of drug action and use in humans and animals.

TEACHING

The Department offers courses in Physiology, Pharmacology, Toxicology and Pharmacy Informatics (Information Technology) to undergraduate students in the Bachelor of Pharmacy (Honours) degree programme. In addition, the Department provides courses in basic and applied pharmacology and toxicology to undergraduate students taking the BSc (Human Biology) degree programme at the School of Medical Sciences and BSc Nursing at the Faculty of Allied Health Sciences. The

Department also provides courses in Pharmacology, Biochemistry and Pharmacy Informatics to the undergraduate students taking the BSc Herbal Medicine programme. The Department also handles Pharmacology for students in the Doctor of Optometry programme.

Courses are also available in the Department for a 2-year Master's and 3-year Doctorate programmes in natural products Pharmacology and Toxicology by research.

STAFF RECRUITMENT AND DEVELOPMENT

A new lecturer, Mrs. Cynthia Amaning Danquah, joined the Department during the year under review. This helped to decrease the work load, albeit not much, of lecturers in the Department. The Department continues to face acute shortage of lecturers in the light of its current commitments to several programmes. These commitments are set to increase in the coming year with the introduction of new health-related courses.

VISIT

Professor Nigel Gooderham of the Molecular Toxicology Unit of Imperial College, London who is a Visiting Professor to the Department visited the Department in August, 2009. During the visit, he delivered several lectures and seminars to graduate students and senior members. Topics included Chemical Carcinogenesis; Grant Writing and Current Research Methods in Molecular Pharmacology and Toxicology.

Prof. Gooderham also discussed possible areas of collaboration in cancer research and reviewed our newly established cell culture laboratory and made suggestions for future improvement.

CONFERENCES AND MEETINGS

During the year under review members of the Department took part in the Continuing Education for Pharmacists organized by the Pharmacy Council and the Pharmaceutical Society of Ghana. In addition, members of the Department participated actively in the Annual General Meeting and Conference organized by the Pharmaceutical Society of Ghana in Accra.

Members of the Department were actively involved in the 10th Commonwealth Pharmacists' Association Conference held in Accra from 5th – 9th August, 2009. Two members of the Department served on the Scientific Committee, Dr. Charles Ansah (Chairperson) and Dr. Eric Woode. Graduate students in the department also actively participated in the Poster Sessions to present their research findings.

A poster from one of our graduate students, Mr. Kwesi Boadu Mensah, entitled *Herbal Medicines: Are they absolutely safe? The case of Cryptolepis sanguinolenta on female fertility in mice*, was adjudged the best poster for the conference.

Dr. Eric Woode attended the 22nd Annual General Meeting and Science in held in Monrovia, Liberia under the theme - *Harmonization of Pharmacy Education and Drug Regulation in the West African Region*. He was one of the thematic speakers and talked on *Competency-Based Pharmacy Education*.

POSTGRADUATE TRAINING

The Department is actively involved in the training of postgraduate students. Currently, there are four PhD students in the Department- two have completed their project works and theses. In addition, there are also thirteen MPhil students at various stages of completion of their project.

RESEARCH AND COLLABORATION

Departmental research involves Pharmacological and Toxicological investigations aimed at elucidating the scientific basis for the therapeutic efficacy and safety of indigenous medicinal plants of Ghana.

The Department has specific interest in the area of medicinal plants with potential anti-inflammatory and analgesic, immunostimulant, anticonvulsant, antidiabetic, antiasthmatic, antioxidant and hepatoprotective actions and those that enhance learning and memory.

The Department has research links with the Departments of Theoretical and Applied Biology, Molecular Medicine, Medical Laboratory Technology of the KNUST and strengthened its links with the Centre for Scientific Research into Plant Medicine over the past year.

Additionally, the department collaborates with the Molecular Toxicology Unit of Imperial College London in the area of possible anticancer agents from plant sources.

CELL/TISSUE CULTURE LABORATORY

Most of the equipment ordered under our TALIF grant for the Department's new laboratory has now arrived. The laboratory is about 70% operational currently. With the new laboratory, we hope to be able to step up our graduate training considerably in the coming years.

SERVICE TO THE COMMUNITY

The Department provides consultancy services to the local pharmaceutical industry, research establishments, clinics, traditional medical practitioners and individuals on the therapeutic potential and toxicity profile of new drugs and medicinal plant products.

Members of the Department continue to provide professional services to various Government Departments such as the Traditional Medicine Directorate of the Ministry of Health, the Pharmaceutical Society of Ghana, the West African Postgraduate College of Pharmacists and the Ghana College of Physicians and Surgeons. A member of the Department serves on the Council of the West African Postgraduate College of Pharmacists.

In addition, some members of the Department have continued to serve as External Examiners and Assessors to Universities and Polytechnics in and outside Ghana and also as assessors' for scientific journals.

Some members of the department also served as resource persons for programmes organized by the Pharmacy Council for Pharmacists.

DEPARTMENT OF PHARMACEUTICAL CHEMISTRY INTRODUCTION

The Department of Pharmaceutical Chemistry teaches and researches in Chemistry as it is applied to drugs and their behavior in and outside of the body. The student is therefore, equipped to apply knowledge in synthesis and formulation of drugs, identification and analysis of drugs and other chemicals and interpretation of drug interactions.

RESEARCH

Since Ghanaian pharmaceutical industries continue to expand their product lines of locally formulated drugs, the department continues to develop novel methods for the analysis of such

drugs. Plants still remain a major source of lead compounds for the development of novel drugs. The department therefore, maintains research in phytochemistry with ongoing work in *Griffonia simplicifolia* and *Xylopia aetheopica*.

The Department has purchased and installed the following equipment under the TALIF project: one uv spectrophotometer, one UR spectrophotometer, a centrifuge, an analytical balance, an electronic melting point apparatus, two pH meters and an hplc chromatograph. These will enhance research activities of the Department.

SERVICE

The Department continues its traditional role in providing analytical services to some hospitals and pharmaceutical companies in the country. Senior Members serve on various University and National Bodies. The Department, in collaboration with Food and Drugs Board and Action Medeor of Germany organized an international training in Quality Control of Drugs for Quality Analysts drawn from all pharmaceutical companies in Ghana.

INCOME GENERATION

The Department earned some income from analytical services rendered to the public. Graduate bench fees have also provided some income that tremendously promoted postgraduate training in the Department.

GRADUATE STUDENTS

The department is currently training ten (13) graduate students (MPhil, MSc) who are working on various research topics.

TEACHING

The Department teaches the following courses, among others, in the BPharm and Herbal Medicine programmes: Basic Pharmaceutical Chemistry, Organic Chemistry, Physical/Analytical Chemistry, Medicinal Chemistry and Spectroscopy. This Department is probably the foremost in the country in the application of high performance liquid chromatography in the analysis of drugs and other chemicals.

CONFERENCES

Members of staff attended the following conferences and presented the accompanying abstracts:

2nd Scientific conference of the College of Health Sciences, KNUST on "Life style and non-communicable diseases.

Abstract: Adosraku R.K. and John A. Addotey, September 2009, Abundant in the Forests, 5-hydroxytryptophan could play a role in the health of Ghanaians.

Symposium on Natural Product Research in Ghana. West African Network of Natural Product Research Scientists (WANNPRES) Ghana chapter.

Updates in Natural Product Research, (March 2010).

Adosraku R.K., Oppong Kyekyeku J., Hplc quantification of xylopic acid in the dried fruits of *Xylopia aetheopica*.

DEPARTMENT OF PHARMACEUTICS

INTRODUCTION

Pharmaceutics is concerned with the scientific and technological aspects of the design and manufacture of dosage forms. It comprises two sections, namely: General Pharmaceutics and Pharmaceutical Microbiology. Pharmaceutics is the main basis of Pharmacy.

TEACHING

The Department offers courses in basic microbiology, orientation and dispensing, physical pharmacy, chemotherapy, sterilization and disinfection, pharmaceutical technology, pharmacy organization and practice in Ghana, industrial pharmacy, biopharmaceutics and pharmacokinetics, and dispensing and microbiology laboratories to undergraduate students in Pharmacy (Bachelor of Pharmacy) and some selected courses to BSc Herbal Medicine students in the Faculty of Pharmacy and Pharmaceutical Sciences.

The Department also runs Master's degree programmes (MSc, MPharm and MPhil) in Pharmaceutical Microbiology, Pharmaceutics and Pharmaceutical Technology.

RESEARCH IN THE DEPARTMENT

The Department continued its research activities in Pharmaceutical Technology, Formulation Science, Medicinal Plant Research and Quality evaluation of pharmaceutical products (both Orthodox and Traditional, Imported and Locally manufactured) on the Ghanaian market. Some of the research topics currently under investigation in the Department are the following:

- Formulation of standard dosage forms of *Alchornea cordifolia* leaf extract
- Availability and quality of artemisinin-based combination therapy (ACT) antimalarials in the Kumasi Metropolis
- Some pharmaceutical applications of *Anacardium occidentale* (Cashew) gum
- Evaluation of the binding properties of coconis leaves
- *In vivo* efficacy of some brands of antibiotics on the Ghanaian market
- Preservation of herbal medicinal products
- The use of natural products, particularly plant extracts as bacteria resistance modifying agents
- Isolation, characterization and antibiotic susceptibility testing of some organisms isolated from the environment and patients
- Preservation of a decoction of Dandelion roots using Plumbago extract
- Evaluation of antifungal activity of tablets made from the stem bark of *Magnifera indica*
- Preparation of wine from pineapple and orange
- Evaluation of antimicrobial activity of tablets made from the roots of *Paulina pinnata*
- Identification of antimicrobial metabolite-producing microorganisms from water bodies in Ghana
- Antibiotic resistance modulators from natural sources
- Identification of commonly encountered nosocomial microorganisms in Ghanaian hospitals and their antibiograms

During the 2008/2009 academic year, four (4) postgraduate students completed their research programmes in the Department and successfully graduated. They are: Mr. Philip Debrah (MPharm

Pharmaceutical Microbiology), Ms Vivian Etsiapa Arhin-Sam (MPharm Pharmaceutical Microbiology), Mrs. Emelia Oppong Bekoe (MPharm Pharmaceutical Microbiology), and Mrs. Grace Frempong (MPharm Pharmaceutics).

CONFERENCES, WORKSHOPS AND SEMINARS

Senior Members in the Department attended and actively participated in local and international conferences, workshops and seminars during the year under review. Senior Members attended and presented papers at the Second Annual Scientific Conference of the College of Health Sciences, KNUST, held at Miklin Hotel, Kumasi, 10 – 11 September, 2009. Dr. Marcel T. Bayor made an oral presentation on ‘The accuracy and quality of household spoons and enclosed devices used in the administration of oral liquid medications in Ghana’ at the conference. Senior Members were also active participants at the 10th Commonwealth Pharmacists Association/74th Pharmaceutical Society of Ghana Conference which was held in Accra from 5 – 9 August, 2009. Senior members, under the auspices of TALIF KNUSTR/2//011/2005, attended a seminar on ‘Enhancement of education of health professionals through strategic leadership and management’ at Eusbett Hotel, Sunyani, from 11 – 16 January, 2009. Dr. K. Ofori-Kwakye attended the IDC/DIES International Dean’s Course Africa, held at Osnabruck and Berlin, Germany, 4 – 14 May, 2009. He presented a paper on ‘Internal Governance Structure of Kwame Nkrumah University of Science & Technology’. Dr. Ofori-Kwakye also attended the Alexander von Humboldt Kolleg and /IDC DIES workshop on ‘Quality and Good Governance in Higher Education Management’, held at Chida International Hotel, Abuja, Nigeria, from 1 – 6 November, 2009. He presented a paper on ‘Development of strategies for enhanced income generation in the Department of Pharmaceutics, KNUST, Kumasi, Ghana’. Dr. Ofori-Kwakye also attended the DIES International Deans’ Course (Part III) on ‘Strategic Issues in Higher Education Management’, at the Hilton Hotel, Addis Ababa, Ethiopia, 1 – 5 March 2010.

CONFERENCE PROCEEDINGS

Kobierski, S., **Ofori-Kwakye, K.**, Müller, R. H. and Keck, C. M. (2009). Optimized production of preserved resveratrol nanosuspensions. 36th Annual Meeting & Exposition of the Controlled Release Society (CRS), July 18 – 22, Copenhagen, Denmark.

Arhin-Sam, V.E., Boakye-Yiadom, K., **Ofori-Kwakye, K.**, **Adu, F.**, **Gbedema, S.Y.** (2009). Groundwater quality in some communities in Kumasi, Ghana, and the effectiveness of ten anti-diarrhoeal agents against isolated organisms. Proceedings of 10th CPA/ 74th PSGH Conference, Accra, Ghana (5 – 9 August) pp. 114.

Annan, K., **Adu, F.**, **Gbedema, S.Y.** (2009). Friedelin: A bacterial resistance modulator from *Paullinia pinnata* L. Proceedings of 10th CPA/74th PSGh Conference, Accra, Ghana (5 – 9 August) pp. 118.

Adu, F., Tuani, G.K., Annan, K., **Gbedema, S.Y.**, Arhin-Sam, V.E. (2009). A comparative study of the antimicrobial activity of the essential oils from some Ghanaian plants. Proceedings of the 2nd Scientific Conference, College of Health Sciences, KNUST, Kumasi, Ghana (10 – 11 September) pp. 58 -59.

Adu, F., Brown, P., **Gbedema, S.Y.**, Annan, K., Abu, M., Arhin-Sam, V.E. (2009). Antimicrobial activity and phytochemical screening of the leaves of *Duranta plumieri*. Proceedings of the 2nd Scientific Conference, College of Health Sciences, KNUST, Kumasi, Ghana (10 – 11 September) pp. 48 - 49.

Gbedema, S.Y., Adu, F., Sawyer, I.K., Arhin-Sam, V.E., Bayor, M.T., Annan, K. (2009). In vitro study to assess the antimicrobial activity of toothpaste formulated from *Garcinia cola* stem wood plant. Proceedings of the 2nd Scientific Conference, College of Health Sciences, KNUST, Kumasi, Ghana (10 – 11 September) pp. 42.

Bayor, M.T., Kipo, S.L., Ofori-Kwakye, K. (2009). The accuracy and quality of household spoons and enclosed devices used in the administration of oral liquid medications in Ghana. Proceedings of the 2nd Scientific Conference, College of Health Sciences, KNUST, Kumasi, Ghana (10 – 11 September) pp. 40 – 41.

SERVICE TO THE COMMUNITY

Senior Members of the Department served on various Boards and Committees of the University and other National Boards/Committees. The Department continued to offer consultancy services in drug formulation, stability studies and quality control of pharmaceutical products to various pharmaceutical companies and hospitals in the country.

INCOME-GENERATING ACTIVITIES

During the year under review, the Department generated some revenue through consultancy services offered to the Food and Drugs Board and other pharmaceutical and herbal product manufacturing companies.

DEPARTMENT OF CLINICAL AND SOCIAL PHARMACY

INTRODUCTION

The Department aims to achieve excellence in teaching and research. Patient-oriented pharmacy and pharmaceutical care, now the primary mission of pharmacy, is our focus. Teaching in the Department therefore seeks to provide students with the core skills and knowledge required for the practice of pharmacy at all levels of health care delivery. The Department has an over-subscribed MSc programme in Clinical Pharmacy that continues to contribute to pharmacy practice and drug policy development.

PROGRAMMES OFFERED

MSc in Clinical Pharmacy (by distance learning)

Clinical and Social Pharmacy courses as part of composite degree in Pharmacy

MAJOR RESEARCH BY STAFF

The Department aims at focusing on improving drug use at community level. Pharmacy Practice research, general practitioner prescribing behaviour and society's attitude and health-seeking behaviours which impact on health outcomes, continue to dominate our research.

Publications in Conference Proceedings

Owusu-Daaku FTK, Marfo AFA, Assasie-Gyimah A (2009) Adherence of Prescribers to the Recommended Artemisinin-Based Combination Therapy (ACT) for the Management of Uncomplicated Malaria. In: proceedings of 10th Commonwealth pharmacists Association Conference, Accra, Ghana 5-9th August, 2009

Owusu-Daaku FTK, Marfo AFA, Tagoe J(2009) Factors Affecting Job and Career. Satisfaction among Ghanaian Hospital Pharmacists In: proceedings of 10th Commonwealth pharmacists Association Conference, Accra, Ghana 5-9th August, 2009

Owusu-Daaku FTK, Marfo AFA, Ahado J,(2009) Medication Errors at Tema General Hospital, Ghana In: proceedings of 10th Commonwealth pharmacists Association Conference, Accra, Ghana 5-9th August, 2009

Owusu-Daaku FTK, Marfo AFA, Boateng EA (2009) The Role of the Pharmacist in Mental Health Care In: proceedings of 10th Commonwealth pharmacists Association Conference, Accra, Ghana 5-9th August, 2009

Duwiejua M, Owusu-Daaku FTK, Marfo AFA, Bedima D (2009) Effectiveness of Counseling on the Use of Antimalarials among Caregivers Attending Health Facilities at Tano District In: proceedings of 10th Commonwealth pharmacists Association Conference, Accra, Ghana 5-9th August, 2009

Duwiejua M, Owusu-Daaku FTK, Marfo AFA, Jambedu HA (2009) Adherence to Anti-Hypertensive Medication Regimen among Patients attending the G.P.H.A Hospital in Takoradi In: proceedings of 10th Commonwealth pharmacists Association Conference, Accra, Ghana 5th-9th August, 2009

Gyapong R.N.K, Duwiejua M, Owusu Daaku FTK, Bio FY, BuabengKO(2009) Characterization of severe malaria and treatment related adverse drug reactions in hospitalized children at the KNUST Hospital, Kumasi, Ghana In: proceedings of 10th Commonwealth pharmacists Association Conference, Accra, Ghana 5-9th August, 2009

Anto B, Barlow D, Whittlesea C (2009) Effect of Drug Issue Frequency and Orthographic Similarity on Drug Specification Confusion Errors. In: proceedings of 10th Commonwealth pharmacists Association Conference, Accra, Ghana 5-9th August, 2009

Service to Community

Senior Members of the Department have been involved in workshops for training of practitioners and revision of drug policy documents for the Ministry. Most practice at the community level.

BENEFACTORS AND INTERNATIONAL AFFILIATIONS

The Department's affiliation with the Department for Practice and Policy, University of London School of Pharmacy continues on a smaller scale after the expiration of Higher Education Link (HEL) grant. Dr. Owusu-Daaku is currently a PhD advisor for a London student working on migration of pharmacists. The link with the School of Pharmacy University of Kuopio (Now University of Eastern Finland) resulted in the exchange of five undergraduate students from Finland to Ghana and one postgraduate student from Ghana to Finland. There has been one reciprocal staff exchange in either direction. The Department has a memorandum of understanding with Ministry of Health, Ghana, through its Drug Policy Unit and continues with the training of Ghana Health Service Pharmacists in Clinical Pharmacy.

DEPARTMENT OF HERBAL MEDICINE

INTRODUCTION

The aim of the Department is to produce healthcare professionals who will provide healthcare using basically locally available plant medicine resources. The ultimate goal is to bring science and technology to bear on the practice of Traditional Medicine in the country, and thereby modernize and improve the quality of the practice, and thus make it more acceptable and accessible.

TEACHING

The Department coordinates the 4-year multidisciplinary BSc Herbal Medicine Programme. It offers various courses related to phytotherapy, disease prevention and health promotion. In the period under reporting, the Department initiated a review of the curriculum of the Programme, since its inception almost a decade ago. It is hoped that the new syllabus will strategically position the graduates to excellently promote herbal medicine practice in the country and beyond.

DEPARTMENT MEMBERS AND THEIR RANKS

The Department has a staff of three full time Senior Members, Prof. T. C. Fleischer (*Head*), Prof. M. L. K. Mensah and Mr. G. H. Sam, and one part-time lecturer Dr. Yaw Bio (Director, KNUST Hospital). The Department also enjoyed the services of Herbalists Kofi Asare Osafo and Madam Abena Seiwa who assisted with the practical orientation of students during their training. During the year under review Prof. M. L. K. Mensah retired from the University's Service, having reached the age for compulsory retirement and was engaged on contract. Dr. T. C. Fleischer was also promoted to the position of Associate Professor of Pharmacognosy.

MAJOR RESEARCH BY STAFF

The Department was engaged in research on various aspects of the Herbal Medicine Industry in Ghana, with emphasis on the quality of the practice of herbal medicine, use, misuse and abuse of herbal medicines. These were carried out in collaboration with other Departments in the Faculty and institutions outside the University. The external collaborators include Ghana Atomic Energy Commission, Global Institute for BioExploration (GIBEX-Africa) and Agribusiness in Sustainable Natural African Plant Products (ASNAPP).

CONFERENCES AND MEETINGS

Senior Members of the Department actively participated in and presented papers and abstracts at the College of Health Sciences's 2nd Scientific Conference 2009, Held at Miklin Hotel, Kumasi, the 3rd Global Summit on HIV/AIDS, Traditional Medicine & Indigenous Knowledge, held at Miklin Hotel, Kumasi and the National Symposium of the Western African Network of Natural Products Research Scientists (WANNPRES) Ghana Chapter, held in March 2010 at KNUST, Kumasi. Some members also attended the Annual General Meeting of the Pharmaceutical Society of Ghana. Prof. T. C. Fleischer participated in the Medicinal Plants Brainstorm Workshop organized by the Plant Resources of Tropical Africa (PROTA) at Safari Club Hotel, Nairobi, Kenya.

Book Chapter

Fleischer T. C., Mensah M. L. K. and Dickson R. (2009) Aromatic Medicinal Plants of Ghana, In African Natural Plant Products: Discoveries and Challenges in Quality Control. Juliani, H. R., Simon, J. E. and Ho, C. T. (eds). American Chemical Society (ACS) Symposium Series Volume 1021. ACS, Washington, D.C. USA, 241-262

Conference Papers and Lectures

Sarkodie J.A, **Fleischer T.C**, Mensah A.Y, **Mensah M.L.K**, Sarpong K. Annan K., Dickson R.A, Komlaga G., Woode E. and Koffour G. (2009) A terpenoid, MLP, isolated from the petroleum extract of stem bark of *Morinda lucida* shows hypoglycaemic effect in streptozotocin-induced diabetic rats. An oral presentation at the College of Health Sciences 2nd Scientific Conference 2009, Held at Miklin Hotel, Kumasi, 10th – 11th September 2009.

T.C Fleischer and **M.L.K Mensah** (2009) *Advances and challenges in training and development of human resources in the field of traditional medicine practice in Ghana*. A presentation made at the

3rd Global Summit on HIV/AIDS, Traditional Medicine & Indigenous Knowledge, held at Miklin Hotel, Kumasi, 31st August to 3rd September 2009.

T.C Fleischer (2009) ‘The bane and blessing of Plant Medicine In Ghana: *Capacity building and human resource training*’ a lecture given at 30th Anniversary Celebration Symposium on 25th October, 2009 at the University of Ghana, Legon.

Posters and Abstracts

Donkor P. O., Mensah A. Y., **Mensah M. L. K.** and **Fleischer T. C.** (2009) “Herbal sexual enhancers on the Ghanaian market: Kumasi as a case study” A **poster** presented at the 10th Commonwealth Pharmaceutical Association Conference on ‘Managing Threats and Crisis: The Vital Role of Pharmacy in an Unstable World’ held at Accra, Ghana, 5th to 9th August 2009

Mensah A. Y., **Mensah M. L. K.** and **Fleischer T. C.**, Komlaga G., Papanko D. N., Dickson R. A., Annan K. and Sarpong K. (2009) “Wound Healing Activity of *Mallotus oppositifolius* (Euphorbiaceae)” A **poster** presented at the 10th Commonwealth Pharmaceutical Association Conference on ‘Managing Threats and Crisis: The Vital Role of Pharmacy in an Unstable World’ held at Accra, Ghana, 5th to 9th August 2009

Amponsah I. K., **Fleischer T. C.**, Mensah A. Y., **Mensah M. L. K.** and Woode E. (2009) “The anti-inflammatory constituents of *Ficus exasperate* (Moraceae)” A **poster** presented at the 10th Commonwealth Pharmaceutical Association Conference on ‘Managing Threats and Crisis: The Vital Role of Pharmacy in an Unstable World’ held at Accra, Ghana, 5th to 9th August 2009

Mensah M. L. K., **Fleischer T. C.**, Mensah A. Y., Opoku-Agyemang K., Komlaga G., Sarpong K. and Aboah K. (2009) “The Effects of some Herbal Products on Urinary Calculi” A **poster** presented at the 10th Commonwealth Pharmaceutical Association Conference on ‘Managing Threats and Crisis: The Vital Role of Pharmacy in an Unstable World’ held at Accra, Ghana, 5th to 9th August 2009

Dickson R. A., Sarpong K., **Mensah M. L. K.**, **Fleischer T. C.**, Mensah A. Y., Annan K., Komlaga G., Sam G. H., Houghton P. J. and Gibbons S. (2009) “Novel Antimicrobial, Antioxidant and Resistance Modifying Causane-Type Furano-Diterpenoids From *Caesalpinia benthamiana*” A **poster** presented at the 10th Commonwealth Pharmaceutical Association Conference on ‘Managing Threats and Crisis: The Vital Role of Pharmacy in an Unstable World’ held at Accra, Ghana, 5th to 9th August 2009

Oppong A. B., **Fleischer T. C.**, Mensah A. Y., **Mensah M. L. K.**, Annan K., Dickson R. A., Komlaga G. and Sarpong K. (2009) “Antimicrobial and Phytochemical Evaluation of the Leaves of *Clerodendron splendens*” A **poster** presented at the 10th Commonwealth Pharmaceutical Association Conference on ‘Managing Threats and Crisis: The Vital Role of Pharmacy in an Unstable World’ held at Accra, Ghana, 5th to 9th August 2009

Sarkodie J. A., **Fleischer T. C.**, Mensah A. Y., **Mensah M. L. K.**, Annan K., Dickson R. A., Komlaga G., Woode E. and Koffour G. (2009) “Hypoglycemic Activity of the Stem Bark of *Morinda lucida* in Streptozotocin-Induced Diabetic Rats” A **poster** presented at the 10th Commonwealth Pharmaceutical Association Conference on ‘Managing Threats and Crisis: The Vital Role of Pharmacy in an Unstable World’ held at Accra, Ghana, 5th to 9th August 2009

Sarpong F. M., **Fleischer T. C.**, Mensah A. Y., **Mensah M. L. K.**, Sarpong K. and Woode E. (2009) “The anti-inflammatory constituents of *Palisota hirsuta* (Commelinaceae)” A

poster presented at the 10th Commonwealth Pharmaceutical Association Conference on ‘Managing Threats and Crisis: The Vital Role of Pharmacy in an Unstable World’ held at Accra, Ghana, 5th to 9th August 2009

T.C Fleischer, M.L.K. Mensah, A.Y Mensah, K. Annan, K. Sarpong, R.A Dickson, G. Komlaga, E. D. Glah, C. Argyropoulou and H. Skaltsa (2009) Mosquito repellent potential of some essential oils of medicinal plants growing in Ghana, A **poster** presented at the College of Health Sciences 2nd Scientific Conference 2009, Held at Miklin Hotel, Kumasi, 10th – 11th September 2009.

Dickson RA, Sarpong K, **Mensah MLK, Fleischer TC**, Mensah AY, Annan K and Houghton PJ (2009) Benthaminin 3, A novel Antibacterial Cassane-Type Diterpenoid from *Caesalpinia benthamiana*, Symposium on Natural Products Research held at the Faculty of pharmacy and Pharmaceutical Sciences, and organised by WANNPRES-Ghana, (*Abstract No. A002*)

Ekuadzi E, Dickson RA, **Fleischer TC** Mensah AY, **Mensah MLK**, Woode E, Sarpong K, Annan K, Komlaga G and Kuffour G (2010) Antibacterial and Antioxidant Effect of *Marigataria discoides*, *Glypheaea brevis* and *Euadenia eminens*. Symposium on Natural Products Research held at the Faculty of pharmacy and Pharmaceutical Sciences, and organized by WANNPRES-Ghana, (*Abstract No. A005*)

Sarkodie JA, **Fleischer TC** Mensah AY, **Mensah MLK**, Woode E, Sarpong K, Annan K, Dickson RA, Komlaga G and Koffour G (2010) Antidiabetic Activity of the Stem of *Adenia lobata* in Streptozotocin-Induced Diabetic Rats. Symposium on Natural Products Research held at the Faculty of pharmacy and Pharmaceutical Sciences, and organised by WANNPRES-Ghana, (*Abstract No. A010*)

Mensah AY, Donkor PO, Sarpong K, **Fleischer TC**, Dickson RA, Annan K and Woode (2010) Anti-inflammatory Activity of the Leaves of *Wissadula amplissima*. Symposium on Natural Products Research held at the Faculty of pharmacy and Pharmaceutical Sciences, and organized by WANNPRES-Ghana, (*Abstract No. A012*)

Oppong AB, **Fleischer TC** Mensah AY, **Mensah MLK**, Annan K, Dickson RA, Sarpong K and Adu F (2010) Antimicrobial and Anti-inflammatory Activities of *Clerodendrum splendens*. Symposium on Natural Products Research held at the Faculty of pharmacy and Pharmaceutical Sciences, and organized by WANNPRES-Ghana, (*Abstract No. A019*)

Amponsah IK, Mensah AY, **Mensah MLK**, Woode E and **Fleischer TC** (2010) Anti-inflammatory, Antioxidant and Antimicrobial Activities of *Ficus exasperata*. Symposium on Natural Products Research held at the Faculty of pharmacy and Pharmaceutical Sciences, and organized by WANNPRES-Ghana, (*Abstract No. A020*)

Acheampong CK, **Fleischer TC** Mensah AY, **Mensah MLK**, Woode E, Sarpong K Annan K, Dickson RA, Komlaga G and Koffour G (2010) Antimicrobial and Anti-inflammatory Activity of *Clerodendrum splendens*. Symposium on Natural Products Research held at the Faculty of Pharmacy and Pharmaceutical Sciences, and organized by WANNPRES-Ghana, (*Abstract No. A022*)

Service to the Community

During the year under review, Senior Members of the University offered services in various capacities to the University and the Nation. At the Faculty level, they all served on the Faculty

Board. Some Members served on the College Board, the Academic Board and some of their sub-committees. Prof. T. C. Fleischer served as the Chairman of the KNUST Basic Schools' Management Committee. Members continued to serve as resource persons or experts on various Technical/Expert Committees of the Traditional and Alternative Medicine Directorate (TAMD), Traditional Medicine Practice Council (TMPC), and the Centre for Scientific Research into Plant Medicine (CSRPM), all under the Ministry of Health, and Ghana Standards Board (GSB).

SCHOOL OF MEDICAL SCIENCES

INTRODUCTION

The School of Medical Sciences was established 35 years ago for the training of medical doctors to improve the health care delivery in the country. During the year under review the School continued to make a lot of strides in her efforts to achieve scholarship and excellence towards her mandate.

ADMINISTRATION

The administrative staff of the Dean's office comprises the following:

Professor K.A. Danso	-	Dean
Professor Y. Adu-Sarkodie	-	Vice-Dean
Mrs. J.S. Andoh	-	School Secretary
Mrs. Patricia Akuffo	-	Chief Administrative Assistant
Mr. Adansi Bona	-	Principal Accounting Assistant
Mrs. Joyce Orhin-Agyen	-	Principal Administrative Assistant
Mr. Joseph Agalik Agalik	-	Medical Demonstrator
Ms. Charlotte Mensah	-	Typist
Mrs. Emelia Nketia	-	Messenger/Cleaner

DEPARTMENTS

The School has 14 Departments teaching courses leading to the award of the BSc (Human Biology) and the MB,ChB degrees. The Heads of Department assist the Dean in the administration and organization of the academic, professional and research work of the School. The following are the Heads of Department for the year under review:

Department of Anaesthesiology & Intensive Care	Dr. G. Boakye
Department of Anatomy	Dr S.C. Osabutey
Department of Behavioural Sciences	Rev. Prof. J. Appiah-Poku
Department of Child Health	Dr. E.O.D. Addo-Yobo
Department of Clinical Microbiology	Professor Y. Adu-Sarkodie
Department of Community Health	Dr. E. Edusei
Department of EENT	Dr. J. Opoku-Buabeng
Department of Medicine	Prof. George Bedu Addo
Department of Molecular Medicine	Dr. F.A. Yeboah
Department of Obstetrics and Gynaecology	Dr. H.S. Opare-Addo
Department of Pathology	Dr. K.A. Boateng
Department of Physiology	Prof. E.T. Agbenyega
Department of Radiology	Dr. A.T. Odoi
Department of Surgery	Prof. F.A. Abantanga

The Department of Pharmacology in the Faculty of Pharmacy and Pharmaceutical Sciences services the School in the training of medical doctors.

ENROLMENT LEVEL

One hundred and eighty-eight students were admitted for the 2009/2010 academic year, the largest class ever to pursue the BSc Human Biology Programme. This is in line with the School's commitment to continue to provide and improve on the number of medical personnel for quality health care delivery in the country. A batch of 139 students would be graduating at the end of 2009/2010 academic year in August 2010. The School now has a student population of one thousand and forty-three for the Human Biology and Clinical Medicine programmes.

HUMAN RESOURCE

During the year, the School worked hard, with the support of the College of Health Sciences and the University, to improve the staffing situation of its distressed departments, namely: Pathology, Radiology and Anaesthesiology and Intensive Care. Three Senior Members were appointed full time, one for each of the three departments. All of them have assumed duty bringing the total number of full time teaching faculty to ninety. However, there is still the need to aggressively scout for lecturers to further improve on the staffing situation and replace retiring ones.

TEACHING /LEARNING FACILITIES

Following the development of a work plan to address, in phases, the teaching and learning needs of the various Departments, the School procured a consignment of facilities comprising LCD projectors, PA systems, SMART Boards, human anatomic demonstration models and some laboratory equipment. About 50 microscopes that were broken down were repaired for effective laboratory work. The School is working towards establishing a clinical skills and simulation laboratory in the premises of the Students Hostel at KATH to teach students basic clinical skills as a means to improve overall clinical training.

TEACHING SITES FOR CLINICAL PROGRAMME

As a means of dealing with the large student numbers, the School is seriously exploring the use of some of the District Hospitals in the Ashanti Region through 'a network of teaching sites' programme. This will ease the congestion of clinical teaching at the Komfo Anokye Teaching Hospital, strengthen our philosophy of community oriented training and enhance service delivery at the participating district hospitals. Contacts have already been made with some of the District Hospitals towards the realization of this strategy.

REVIEW OF CURRICULUM

The School is still pursuing the process of reviewing and synchronizing the curriculum of the Basic Sciences Programme to enhance efficiency in content delivery and meet the changing trends in modern medical education. In this respect, the Department of Anatomy started teaching by the systems approach during the second semester of the academic year.

PHYSICAL DEVELOPMENT

The School undertook several initiatives to improve physical infrastructure. This included expansion and renovation of the Department of Molecular Medicine Teaching Laboratory and the classroom for Human Biology III. A borehole was constructed to provide constant flow of water and promote sanitation on our premises on KNUST campus. A new canteen was built to cater for both students and staff. The School also fixed her broken furniture, painted the entire premises at the KNUST campus and improved the landscape to create a serene environment for effective teaching and learning. The SMS Guesthouse is undergoing some rehabilitation. Also, the frontage of the GETFund Hostel at the Clinical Students' Hostels at KATH is being paved.

TUTORIAL AND MENTORSHIP SYSTEM

The School, realizing the need for ongoing counseling of students, in the face of the increasing academic and socio-economic challenges confronting them, reintroduced the tutorial and mentorship system as a way of helping students deal with some of these challenges and as a means to mentor the students in the course of their training.

NEW PROGRAMMES /POSTGRADUATE PROGRAMME

The MSc in Disability and Rehabilitation Studies Programme under the Department of Community Health was started. Efforts are also far advanced to begin a BSc programme in Disability during the 2010/2011 academic year. The School, as part of a consortium of West African Medical Schools, enrolled 4 Senior Members into the MSc Biomedical Education Distance Learning Programme in collaboration with the University of Ibadan, Nigeria to improve the teaching skills of staff.

RESEARCH AND CONFERENCES/ STAFF DEVELOPMENT

The School continues to maintain a large research portfolio and collaboration with renowned external institutions as manifested by the research and publications output of the various Departments. Members of the School actively participated in international and local scientific conferences, in particular the second scientific conference of the KNUST College of Health Sciences which was held in August 2009. Plans are also underway to organize a workshop to train senior members who currently supervise, or are potential supervisors, in our postgraduate (Master's and Doctorate) programmes.

INCOME GENERATION ACTIVITY

With the emerging competition in the mortuary services in the Kumasi Metropolis, the SMS during the year under review re-strategized the management of its mortuary services in order to stay competitive and to sustain the facility. The School is also exploring other potential areas for income generation such as the setting up of a medical laboratory services to generate further income.

COLLABORATION

The School is collaborating with Doctors Academy in the United Kingdom towards teaching aids for clinical training. A team from the Academy visited the School last September and made some donations including DVD on clinical examination for Medical students. A preliminary Memorandum of Understanding (MOU) has since been signed between the University and the Academy. Secondly, the School is actively participating in the Health Open Educational Resources (H-OER) initiative of Africa to produce teaching and learning materials for open access.

ELECTIVE PROGRAMME

Since the beginning of the academic year in August 2009, the School has hosted 23 foreign students mostly from Europe, Canada and The United States of America for their elective programmes. This affirms our international reputation as one of the most preferred sites for medicine-in-the-tropics by medical students from the advanced countries

DONATION

Palb Pharmacy, a pharmaceutical company based in Kumasi donated five sets of computers to the School. Also, Donyma Company of Kumasi rehabilitated the stretch of the road leading to the Physiology Block as their contribution to the School.

CHALLENGES

The School continues to experience challenges in the following areas:

- Inadequate academic staff and physical facilities in the face of increasing student population

- Inability of the School to admit majority of the qualified applicants
- Unavailability of modern laboratories for postgraduate programmes and research

THE WAY FORWARD

Within the overall policy framework of the University, the School of Medical Sciences is working towards her vision and mission objectives through strategies seeking to:

- Pursue appropriate staff mix and recruitment drive
- Expand, modernize and maximize space requirement for the basic sciences courses
- Pursue synchronized, integrated, modular content delivery in the basic sciences courses
- Utilize technology based, interactive, student centred learning approach
- Introduce clinical simulation and skills training
- Create a network of teaching sites for clinical training
- Improve and expand ICT facilities for teaching, laboratory work and research
- Develop and introduce more Postgraduate programmes

DEPARTMENT OF ANAESTHESIOLOGY AND INTENSIVE CARE

INTRODUCTION

The Department of Anaesthesia and Intensive Care of the School of Medical Sciences doubles as the Directorate of Anaesthesia and Intensive Care at the Komfo Anokye Teaching Hospital.

The department has three main sub specialties:

- Anaesthesia
- Intensive Care
- Pain Relief

AIMS AND OBJECTIVES

- Undergraduate training in basics of anaesthesia, intensive care and acute and chronic pain management. The training include practical training in the anaesthesia clinic, the theatres, post anaesthetic care units (PACU) and intensive care units.
- Postgraduate training of surgeons and obstetricians/gynaecologist in the basics of anaesthesia, intensive care and pain management.
- Postgraduate training of physicians in airway management, artificial ventilation and invasive monitoring.
- Training of medical and non-medical personnel in Basic Life Support and Advanced Cardiac Life Support.
- Training of undergraduate students in anaesthesia and emergency medicine.

ACTIVITIES

- Two (2) separate teams from USA and Germany joined the department to provide anaesthesia and intensive care services for open heart surgeries.
- The Department collaborates with the University of Ulm, Germany to train postgraduate doctors and do joint research.
- There is an affiliation with the University of Utah's Department of Anaesthesia. Professor Jeff Peters with two Assistant Professors came here twice last year and spent two weeks during each visit, working and teaching in the theatres. Donation of medical equipment and items worth about \$100,000.00 were made.

- The Department trains nurse anaesthetist for the Ministry of Health. Last year 52 nurse anaesthetists passed out. Plans are far advanced to start a BSc (Anaesthesia) degree programme in the university next academic year.

RESEARCH

- Post operative pain management and patient's satisfaction.
- Survey on patients' attitude towards epidural analgesia in labour.(ongoing)
- Epidural Analgesia in Labour: Ghanaian obstetrician attitude and knowledge. (ongoing)
- The incidence of Post discharge Nausea and vomiting among day case surgical patients at Komfo Anokye Teaching Hospital.(ongoing)
- Random measurements of endotracheal tube cuff pressure.(ongoing)
- Post operative pain assessment and patients satisfaction at Komfo Anokye Teaching Hospital.(ongoing)
- Patients' knowledge about the operations they are going to have. (ongoing)
- Anaesthesia and post-operative agitation. (ongoing)

POSTGRADUATE TRAINING

The department applied to the Ghana College of Physicians and Surgeons for accreditation to train Doctors in Anaesthesia and Intensive Care. The preliminary assessment has been done and we are waiting for a response from the college.

PROJECTIONS

The Department wishes to pursue the following activities in the ensuing years:

- Recruitment of teaching staff to augment the existing staff strength. Already two Doctors have put in their application and are awaiting the outcome.
- Repackaging of the existing syllabus for Medical students to make the profession more attractive to young doctors.
- Establishment of a multidisciplinary Pain Service for the management of both acute and chronic pain. The main focus will be to provide epidural anaesthesia during labour in order to ensure pain free labour.
- Expand the anaesthesia clinic to enable members of the public to check their levels of fitness in order to reduce the incidence of sudden death in the community.

DEPARTMENT OF ANATOMY

STAFFING

The academic staffing level of the Department is low and this has been our major concern. Out of the five academic staff of the Department, three are on part-time appointment. The Department provides teaching for several Departments of the University; there is therefore an urgent need to recruit more lecturers to strengthen the current situation. The department has been given approval to run an MPhil programme in Human Anatomy and Cell Biology, beginning in 2010-2011 academic year. As a measure to improve the staffing situation, the Department has targeted determined and enthusiastic students of the programme. Such students would be handpicked, supported and bonded. They are expected to serve the department upon completion of their programme. This measure is geared towards achieving staff complement in a couple of years ahead.

Currently, the staffing position is as follows:

Number of staff	Status of staff	Type of appointment
1	Full professor	Part-time
1	Associate professor	Part-time
1	Senior lecturer	Full- time
1	Lecturer	Full-time
1	Lecturer	Part-time
1	Demonstrator	
4	Senior staff	Full- time
7	Junior staff	Full – time
3	Mortuary men	Full-time
3	Security men	Full -time
2	Drivers	Full - time

TEACHING

Despite the staff constraints, we continue to maintain the high standard of teaching. This was evidenced by the 50% increase in the number of students who scored distinction in the final 2008/2009 Human biology examination and a significant reduction in the number of students who failed.

The Department provides teachings at the undergraduate levels to students of Medical Sciences (Human Biology and Dental), Medical Laboratory and Technology, Nursing, Sports and Exercise Science, Optometry and Herbal Medicine. The Department also provides teaching and supervision of researches at MPhil levels to students of Reproductive Biology and Reproductive Health. Furthermore, the Department runs anatomy revision programmes at primaries level for West Africa College of Surgeons and Ghana College of Surgeons and Physicians. The Department provides practical demonstration to Nurse Anaesthetics students of Komfo Anokye Teaching Hospital.

The Department has successfully changed the outmoded system of teaching Anatomy by Region to the modern method of teaching Anatomy by Systems. This change is an important step towards the SMS objective of synchronizing the teaching of preclinical subjects and adoption of modular system of running the curriculum of the school.

Now, anatomy practicals are taught using prosected cadavers as opposed to the old dissection method. Prosection is the method used by many current medical schools for teaching practical anatomy; because it has many advantages over dissection. Prosection makes more efficient use of a cadaver when compared to dissection. For dissection, one cadaver is provided to 10 students; so for the current cohort size we would use 20 cadavers. It is becoming pretty difficult to get such large number of cadavers every year. Prosection on the other hand, allows the use of 4 cadavers for the same student size. The prosected cadavers conformed to the figures in the atlas of anatomy books available in the prosectorium; students therefore can access the cadavers with their atlas books over and over for their revisions.

In addition to the prosected cadavers, the Department organizes Computer –Assisted Learning (CAL) LAB and displays a number of plastic human anatomy models to aid the teaching and learning of human anatomy. At the beginning of this academic year, the Department took delivery

of a number of useful plastic human anatomy models bought by the school to complement the old ones.

The Department has instituted measures to cope with the large student population. The Department has installed video capture computer, connected to LSP projector and linked to three TV monitors. By this connection, students in the two teaching labs can see and listen to a lecturer's presentation. Furthermore, forty broken down light microscopes have been repaired by the school and 10 new ones have been added. We now have 52 functioning microscopes, adequate for the current size of students. The department has also instituted measures to ensure that students attend lectures and practical sessions by checking attendance. These students write their names and append their signatures at the end of the session.

Inadequate histology slices have been our major setback for the teaching of histology. The Department is yet to take delivery of complete tissue processing equipment which has been ordered by the School to enable us produce our own histology slices. We are also waiting keenly for a teaching microscope which has also been ordered by the School. Meanwhile the Department is collaborating with Department of the Pathology, KATH to produce 50 boxes of histology slices to increase the existing number.

ESTABLISHMENT OF MPhil HUMAN ANATOMY AND CELL BIOLOGY PROGRAMME

Approval has been given to a proposal for the establishment of MPhil Human Anatomy and Cell Biology programme in the Department beginning next academic year. All the necessary preparations have been made for the smooth take off of the programme.

RESEARCH AND COLLABORATION

The following researches are ongoing in the Department:

- Morphological variation in umbilical cord and ultra sonography of human placentae
- Morphological aspects of human implantation using a human trophoblastic cell line, human placenta cells and human endometrium
- Ultrasonography of the human endometrium in fertile and infertile women
- Morphology of human endometrium in infertile women
- Luteal phase defect in infertile women
- Anthropological studies on human skeleton
- Studies on Sacroiliac joint injection using surface landmarks
- Development of a new tissue preservation technique for ultrasound imaging at postmortem
- Studies on the pathophysiological changes accompanying human sepsis and multi-organ dysfunction using caecal ligation and puncture in the rat

Collaborative research projects are on-going between the department of anatomy and the following institutions

- Department of Obstetrics and Gynaecology, KNUST/SMS
- Department of Pathology, KNUST/SMS and UGMS
- Department of Biological Sciences (Theoretical and Applied Biology), KNUST
- Department of Pharmacology, KNUST
- Department of Biomedical Sciences, University of Sheffield, U.K
- Department of Physiology and Anatomy, St Georges' University of London. U.K

SERVICE TO THE COMMUNITY

The Department provides valuable extended services to the University community. Between August 2009 and April 2010, we provided free mortuary service to students, pensioners, staff and spouses of staff at a cost of GH¢4,090.00. The Department will continue to render such services to the University community. We also use part of the income generated by the Department to support the procurement and preservation of cadavers for academic purpose.

At the national level, staffs of the Department serve as external examiners to sister Universities. We also render consultancy services to the Ghana Police Service.

INCOME GENERATION

The Department generates revenue through embalming and storage of dead bodies brought in by the public. Our revenue generation capacity fell during the last quarter of the last academic year- 2008-2009. The Department was indebted to the tune of GH¢9,300.00 as at August 2009. However, following the reorganization of the mortuary services and the adoption of the recommendations made by the committee established by the Dean of SMS, revenue generation has improved and the debt paid off. Following “non performance” report submitted by External Auditors, Prof. K Danso, the Dean of SMS, established a committee, under the chairmanship of Prof. Adu Sarkodee. The committee looked into the income generating activities of the Department and submitted their report and recommendations. Currently, the Department is operating strictly by the recommendations.

Another source of revenue is the provision of a 24 hour hearse services to the university staff and the general public.

PROJECTIONS

The Department wishes to pursue the following activities in the coming years

- Recruitment of teaching staff. This will start as soon as the MPhil programme takes off.
- Establishment of tissue preparation room. With this we can prepare our own histology slice for teaching. It is also an important infrastructure for research work. We have Microtome; we are waiting for embedding and staining equipments.
- Procurement of standby electric generator for the mortuary refrigerator. For economic and technical reasons, we cannot rely on the SMS mega generator for power during power outage, particularly, during holidays
- Relocate the changing room for mortuary staff and refurbishment of students’ toilet/urinals. Survey work and the cost estimates have already been done.

DEPARTMENT OF CLINICAL MICROBIOLOGY

The Department of Clinical Microbiology has a staff strength of 10 full- time Academic and Technical staff, supported by a secretariat comprising a Senior Clerk and a General Office Assistant. Two national service staff support the practical lessons in the Department.

Apart from the teaching of undergraduate medical students in the School of Medical Sciences, the Department services the undergraduate teaching of Medical Microbiology in the School of Dentistry, and the Faculty of Allied Health Sciences, where it teaches students of Nursing and Medical Laboratory Technology.

The focus of undergraduate medical and dental students' teaching is the foundation of Infectious Diseases where micro-organisms and their disease/infection causing mechanisms are introduced. The antimicrobial treatment of these infections, and prevention and control of these infections is emphasized, especially those with epidemic potential in Ghana and the sub-region. Host response to infections is also addressed. Courses taught include Bacteriology, Parasitology, Mycology, Virology and Immunology. This year we have had 147 Medical and 12 Dental students.

Medical Laboratory Technology students are tutored mainly in the identification of microbial pathogens from various clinical specimens. Emphasis is placed on practical bench work microbiology. Students of nursing undertake basic clinical microbiology with emphasis on infection control procedures in clinical settings.

The Department also runs PhD, MPhil and MSc programmes in Clinical Microbiology. Currently there are 3 PhD students, 10 MPhil students, and 12 Msc students enrolled.

Postgraduate Clinical teaching for the Ghana College of Physicians and Surgeons and the West Africa Postgraduate Medical College forms part of our responsibilities.

Apart from teaching in the University, the Senior Clinical Staff also serve as Specialist Clinical Microbiologists/Senior Technical Staff at the Komfo Anokye Teaching Hospital.

RESEARCH COLLABORATIONS AND ACTIVITIES

The Department is currently involved in a number of researches with collaborators Nationally and Internationally. Researches include Mosquito ecology and malaria control, lymphatic filariasis, Effect of parasitic infections on pregnancy, Malaria, Environmental Health, Investigation of the Links Between impact of Climate variability on malaria incidence in the Forest Zones of Ghana, Opportunistic parasitic infections in HIV/AIDS patients, neglected parasitic diseases, anti-malaria plant medicines for the treatment of malaria, zoonotic diseases, climate change and its impact on Human and Animal health, control of reproductive tract infections including those sexually transmitted, interventions for HIV control including HSV-2 therapy, microbicides and circumcision, and antimicrobial susceptibilities of clinical isolates including extended β -lactamase production at the Komfo Anokye Teaching Hospital. Also being researched are efficacies of medicinal plants as anti-retroviral therapy, virological and immunological parameters that are altered in HIV infected patients undergoing Highly Active Antiretroviral Therapy (HAART) or herbal treatment, mechanism(s) underlying HIV infection in HIV-infected discordant couples, effect of HIV-2 co-infection on HIV-1-infected patients' response to the HAART, detection and characterization of Human Metapneumovirus in Children admitted at the Komfo Anokye Teaching Hospital, comparison of direct fluorescence assay, and viral isolation and molecular techniques in the diagnosis of respiratory infections. At the Agogo Hospital in the Asante Akyem North District, the Department is also involved in studying neglected infectious diseases in children. We have also recently with the collaboration of the National AIDS Control Programme and the Family Health Directorate of the Ghana Health Service embarked on a "Syphilis in Ghana" study. This is partly being sponsored by DFID-UK and the Bill and Melinda Gates Foundation.

Our research collaborators include the Noguchi Institute for Medical Research, Ghana AIDS Commission, Navrongo Health Research Centre, International Vaccine Institute, Seoul, London School of Hygiene and Tropical Medicine, Reproductive Health Research Unit of the University of Witwatersrand, Johannesburg, and the National Institute for Medical Research, Tanzania, Bernhardt Nocht Institute, Hamburg.

MEMBERSHIP OF EXTERNAL BOARDS AND CONSULTANCIES

Prof. Yaw Adu-Sarkodie;

- Executive Committee Member, International Union Against Sexually Transmitted infections (in consultative status with the UN), Geneva
- WHO, Geneva ; Member, Expert Advisory Panel on Sexually Transmitted Infections
- WHO, Geneva ; Member, Human Papilloma Virus Vaccine Expert Advisory Group
- Board Member (representing West Africa), International Union Against Sexually Transmitted Infections
- Ghana AIDS Commission; Member, Proposal Review and Appraisal committee, Conference Planning Committee.
- National AIDS/STI Control Programme: Member, National Expert Committee on HIV Drug Resistance

Prof Ohene Adjei

Member National Buruli Ulcer Advisory Board

Dr SCK Tay

Executive Member (representing Anglophone West Africa), Africa Monsoon Multidisciplinary Analyses (AMMA) of Health Impact of Climate Change

CONFERENCE PRESENTATIONS

Adu-Sarkodie Y, Burris H, Parkhurst J, Baafuor KO, Mayaud P. Getting Research into Policy – Herpes Simplex Virus Type-2 (HSV-2) Treatment and HIV Infection: International Guidelines Formulation and the Case of Ghana. Cross RPC Meeting, Liverpool, May 2009.

Adu-Sarkodie Y, Britwum-Nyarko A, Baafuor KO. Testing for Syphilis in Pregnancy – Policy vs. Practice. Cross RPC Meeting, Liverpool, May 2009.

Yaw Adu-Sarkodie, Florian Marks, Nimako Sarpong, Frank Hüniger, Wibke Loag, Christian G. Meyer, Michael O. Favorov, Zhi-Yi Xu, Jürgen May. Hospital-based febrile illnesses surveillance and the role of *Salmonella* infections in Agogo, Ghana, West Africa. 7th International Conference on Invasive Salmonellosis, Mombasa, Kenya. January 2009.

ONGOING RESEARCH ACTIVITIES

Prof Adu-Sarkodie

- Typhoid Fever Surveillance in Agogo. Funded by the International Vaccine Institute, South Korea.
- Research Programme Consortium for Reproductive Sexual Health and HIV in Africa. Other members of Consortium are the London School of Hygiene and Tropical Medicine, National Institute of Medical Research, Tanzania, Reproductive health and HIV Research Unit, University of Witwatersrand, Johannesburg. Funded by the UK Department for International Development.
- Neglected infections in African Children. Funded by the Optimus Foundation of Switzerland.
- Testing for syphilis in pregnancy in the Ashanti Region – Policy vrs Practice. Funded by the UK Department for International Development.

- Burden of syphilis in women attending antenatal clinics in Kumasi. Funded by the UK Department for International Development
- Extended spectrum β -lactamase production at the KATH
- An audit of antimicrobial susceptibility testing at KATH

Prof Ohene Adjei

- Anti –symbiotic treatment of filariasis
- Genetics of Lymphoedema and Hydrocele in filariasis
- Wolbachia Endobacteria in filarial nematodes as target for a novel chemotherapeutic approach against human filariasis
- Buruli ulcer: multidisciplinary research for improvement of control in Africa.
- Sustainable control of onchocerciasis: Today and Tomorrow.

Dr. SCK Tay

- Accuracy of Diagnosis of Intestinal Parasites and Epidemiology of Necator Americanus and Ancylostoma Duodenale Infections at Komfo Anokye Teaching Hospital (KATH).
- Epidemiological Survey of Soil Transmitted Helminths in people other than School Children in the Kintampo North District of the Brong Ahafo Region of Ghana.
- Intestinal Parasites Involving the Urinary and Gastrointestinal Tract in HIV/AIDS patient at Komfo Anokye Teaching Hospital.
- Evaluation of Anti- malaria Activity of Herbal drugs (4) Cryptolepis sanguinlepis based Herbal Preparations on Plasmodium Berghei in Mice.
- Multi- Resistant Salmonella strains isolated from patients in Kumasi, Ghana.

Dr. TB Kwofie

- Evaluation of some herbal medicines as anti-retroviral therapy
- Immunological and virological parameters that are altered in HIV-infected patients using herbal preparations as antiretroviral therapy
- Cytokine profile in HIV-infected people using herbal preparations as anti-retroviral therapy
- Detection of respiratory viruses in hospitalized patients with respiratory tract infections using immunofluorescence assay and real time PCR techniques
- Involvement of respiratory syncytial virus, parainfluenza virus, adenovirus and Influenza virus in lower acute respiratory infections in children admitted to KATH
- Prevalence of HIV and hepatitis B virus in blood donors, pregnant women and STI patients reporting to the Mampong District Hospital, Ashanti Mampong.

PK Feglo

- Molecular Epidemiology of Extended Spectrum β -lactamase producing Enterobacteriaceae at the Komfo Anokye Teaching Hospital (KATH), Kumasi
- Prevalence of respiratory tract infections among HIV-seropositive patients at KATH
- Bacterial contamination of Ghanaian currency notes
- Bacterial contamination of donor blood at the Regional Hospital, Sunyani, Ghana.
- Bacterial contamination of ready-to-eat street foods at bus terminals in Kumasi.
- Prevalence and antimicrobial susceptibility *Streptococcus pneumoniae* isolates at KATH

RC Brenyah (Mrs)

- Preliminary studies of Entomological parameters and perception on malaria transmission on KNUST campus
- The role of house designs in malaria control in three selected communities in the Ashanti Region.
- Investigation of human skin lesions and infection caused by parasites in the Ashanti Region.
- Vector control in the management of malaria at KNUST.
- Prevalence of vaginal candidiasis presenting to KATH
- The pattern, knowledge and attitude of residents living in slums in Kumasi to malaria.
- Prevalence of kidney disease in the general population of Kumasi using urinalysis as an early detector.

DEPARTMENT OF COMMUNITY HEALTH

The Department of Community Health at the School of Medical Sciences, College of Health Sciences in 2008 was granted funds by the Netherlands Government through NUFFIC to run a four-year (2008-2011) Project under the Netherlands Programme for the Institutional Strengthening of Post Secondary Education and Training Capacity (NPT). The title of the project is “Capacity Building in Community Health for the Prevention and Response to Disability”, known as SMS/NPT Disability Project. The Dutch Partners in this project is the Hogeschool Leiden, a University of Applied Sciences in Leiden in the Royal Netherlands.

The said project basically has three components namely;

- Capacity building in the form of BSc Programme in Disability and Rehabilitation and MSc Programme in Disability, Rehabilitation and Development as well as other short courses.
- Research in Disability, rehabilitation and related issues.
- The Establishment of a credible data base and information with the data generated from research activities at the center to be established under the same project.

In the area of Capacity building, the curricula for both the BSc Programme and MSc Programme are at various stages in the process of meeting the approval of the University and the National Accreditation Board. Meanwhile, with the administrative approval of the Vice-Chancellor the MSc Programme took off in the 2009/2010 academic year with 20 students including five (5) Persons with Disabilities (PWDs).

In order to establish the needed core faculty to teach in these programmes, the project has a provision for 10 Fellowships (5PhDs and 5MScs) in various disability areas. Some of the beneficiaries have already started their training programmes but others are yet to begin. However, various professionals with relevant knowledge and competencies in the School of Medical Sciences, other Departments within KNUST, sister Universities in Ghana (especially UEW) and outside the Universities have been identified to teach on these programmes.

The SMS/NPT Disability Project is unique with respect to the link it provides with the beneficiary community through collaboration with an NGO called FAND (Foundation Africa Next Door).

As part of the project activities, the First National Disability conference was organized at KNUST in August 2009 to bring all Stakeholders to a national forum to dispassionately discuss pertinent and key issues affecting Persons with Disability (PWDs) and to consolidate views for the way forward towards formulating a common national action plan.

The conference brought together about 200 Persons with Disability, Representatives of the Vice President of Ghana and the Asantehene; Otumfuo Osei Tutu II. The participants included people from the Academia, Politicians, Traditional Leaders, Government Agencies, the National Disability Council, Ghana Federation of the Disabled and individuals with and without Disabilities as well as Northern Partners of the Project from Hogeschool Leiden and University of Stellenbosch, South Africa.

As part of the SMS/NPT Disability Project, the Department of Community Health organized a Research Seminar with the full participation of all the students within the Disability programme to identify research areas that are of relevance to the needs and appreciations of PWDs and the developmental agenda of the country. An interesting part of the Research Seminar is the five-year Research Plan for the MSc Disability Programme. This activity was an innovation which could be replicated in other Departments in the University, since it is likely to produce development and action oriented research.

The construction of the Centre for Disability and Rehabilitation Studies (CEDRES) took off in January 2010 in fulfillment of the third component of the Project which is the establishment of the Centre at KNUST. This Centre will consist of two (2) forty-seater classrooms, a hundred (100) – seater conference room, 6-shared offices for lecturers, office space for the Director of the Centre and the Senior Administrative Assistant, library, demonstration room as well as Disability Network and Data-base centre. We are looking forward to the completion of the construction of the building by the end of August 2010.

Another project currently being run under the Department of Community Health is The Malaria Capacity Development Consortium (MCDC). This Project is a partnership of four European and five African partners launched in 2008.

The four European partners are:

- Center for Medical Parasitology, University of Copenhagen (CMP)
- DBL - Centre for Health Research and Development, University of Copenhagen (DBL)
- Liverpool School of Tropical Medicine (LSTM)
- London School of Hygiene & Tropical Medicine (LSHTM)

The five African universities (and supporting partners) are:

- College of Medicine, University of Malawi (CoM), and the Wellcome Trust Clinical Research Programme, Blantyre, Malawi.
- Kilimanjaro Christian Medical College, Moshi (KCMC), and the Joint Malaria Programme (JMP) Tanzania.
- Kwame Nkrumah University of Science and Technology, Kumasi, Ghana.
- Faculty of Medicine and School of Public Health, Makerere University, Kampala, Uganda, and the Ministry of Health, Uganda.
- Faculty of Medicine, Université Cheikh Anta Diop (University of Dakar), Senegal and the Ministry of Health, Senegal.

It is supported by the Wellcome Trust and the Bill and Melinda Gates Foundation.

It aims to improve the ability of African scientists to undertake high quality research relevant to the treatment or prevention of malaria and to provide qualified graduates with new technical skills, develop their critical abilities through a well supervised doctoral programme, expose them to a group of critical but supportive scientists and provide them with continuing support after graduation.

The project currently has three PhD Fellows at initial stages of their doctoral research. The Department is preparing to implement some recommendations made from the Baseline Needs Assessment conducted by a team of consultants from the University of Liverpool from the 9th to 13th October 2009. The objectives of the assessment were to:

- Document the existing resources available to support PhD programmes in the University and
- Identify and prioritize opportunities for strengthening the programme to enable MCDC to plan targeted support to meet the needs of individual institutions.

The PhD Fellows have undertaken a 6-week orientation course in Research Methodology in Malawi and preparing to commence their own research.

Preparations are underway for a PhD supervisors' training workshop at the end of May 2010. The workshop is being organized for university lecturers who wish to gain a clear overview of the role and experienced supervisors who would like to review their practice.

In the same Department, the Malaria Research Team in the Department of Community Health has been involved in WHO/TDR funded projects on home management of malaria in rural and urban communities in Ghana. The Home Management of Malaria Project started in two phases with phase I which was the baseline from 2005 to 2006 and then phase II which was the intervention from 2008 to 2009. The aim of the project was to assess the feasibility, acceptability, costs and policy contextual issue in home management of malaria in children aged 6-59 months in the city of Kumasi in the Asokwa Sub-Metropolitan Area. In May 2010, the funders of the Project, WHO/TDR will be organizing a data analysis workshop for investigators of the project to prepare scientific papers for publication in peer review journals.

DEPARTMENT OF EYE, EAR, NOSE AND THROAT INTRODUCTION

The Department of Eye, Ear, Nose and Throat (EENT) was established by the Academic Board on 1st October 1982 with Professor Sir George Wireko Brobby, then a Senior Lecturer, as the Foundation Head. It was established as a composite academic unit made up of two distinct Microsurgery Units Ophthalmology and Otorhinolaryngology and given the name EENT.

Since its inception in 1982, the academic programme has so been streamlined as to portray the interdisciplinary nature of the two specialities. The prevalence of Eye, Ear, Nose and Throat diseases in Ghana is very high. Indeed; Professor Peter D. Bull, a visiting Professor and a Consultant of ENT confessed to have seen more hearing-impaired children in Ghana during his three weeks visit than he sees three years in Britain. This being so, a newly qualified medical practitioner should be equipped with skills and in-depth knowledge to be able to manage common Eye, Ear, Nose and Throat disorders at the community and district levels. The performance of our graduates in these areas has been praised by many health workers and patients who come into contact with them. The Department can boast of a well-furnished lecture theatre, consulting rooms, and Audiology centre, the first of its kind, south of the Sahara. Although, the Eye Unit is physically separated from the ENT section, our programmes are fully coordinated with other special subjects like Anaesthesia, Dermatology, Radiology and Psychiatry etc.

VISION AND MISSION

The Vision of the Department is in Consonance with that of the School of Medical Sciences (SMS) which conceptualises its Mission as an internationally recognised school offering undergraduate,

postgraduate and professional programmes of exceptionally high quality. This Vision has motivated and encouraged the Department of EENT to become a centre of excellence both locally and internationally through the indefatigable efforts of the Founding Head.

AIMS/ OBJECTIVES

The Department aims to:

- Fulfil the general purpose of SMS through the pursuit of excellence in teaching, service, ethical and character training.
- Provide basic clinical training in Eye, Ear, Nose and Throat through lectures, practical and clinical demonstrations through tutorials, seminars etc.
- Promote and conduct research into the various facets of Ophthalmology, Otorhinolaryngology and Clinical Audiology and Speech Pathology.
- Provide postgraduate training for the Membership/Fellowship of Ghana College of Surgeons and Fellowship of West African College of Surgeons to Medical Officers not only from Ghana but also from other Countries eg. Nigeria through advanced instructions, Practical and Clinical demonstrations and training in advanced Eye, Ear, Nose and Throat surgical skills.
- Provide the requisite health care service to the general public and to offer advise on good ear care practices.
- Lead the crusade against the invisible handicap of “Deafness” through outreach activities, publications in print media, research, seminars etc.

SPECIFIC OBJECTIVES OF EAR, NOSE AND THROAT UNIT

At the end of rotation in ENT, the student should be able to:

Master the care of patients with a tracheostomy; identify signs of danger and act to correct these.

- Describe which patients need specialist care, refer them to a special unit and describe in detail the clinical features and any treatment given.
- Practice the following skills
 - (i) Use head mirror to examine the upper respiratory tract and ear
 - (ii) Tuning fork testing-Schwabach, Rinne, Weber
 - Otoscopy
 - (iii) Learn the technique and identify the application direct and indirect laryngoscopy, anterior and posterior rhinoscopy
- a. Treat common Ear, Nose and Throat disorders
- b. Identify basic equipment used in hearing evaluation and different types of hearing aids.
- c. Identify hearing-impaired children and to instruct their parents.

POST-GRADUATE TRAINING

A post-graduate Course – DLO (Diploma in Otolaryngology) was started for the whole of the West African sub-region in 1997. Kumasi and Ibadan are the only two centres of excellence accredited by the West African Post-graduate Medical College for the Course. Since then, several students from Ghana and Nigeria graduated from the Department and holding key positions in various hospitals in Ghana and Nigeria.

Additionally, the Department was accredited by the West African College of Surgeons to train Consultants for West Africa. At the moment, there are 18 residents at various levels of training in

the Department. These include 10 candidates at the Ear, Nose and Throat Unit and 8 at the Eye Unit. They are preparing for the primaries and various levels of the FWACS and FGCS Examinations.

FUTURE POSTGRADUATE TRAINING

The Department is currently preparing proposals to be sent to Academic Board for the commencement of training in Masters programme/Post-graduate Diploma in Audiology and Speech and Language Therapy.

Again, the Eye Unit takes part in the teaching of clinical Ophthalmology course to the Postgraduate Students of Optometry. The ENT Unit has also got a five-year accreditation from the Ghana Post-graduate College of Physicians and Surgeons to train ENT Specialists.

In addition to the above, the members of staff are also actively involved in teaching the Post Basic Diploma Course for Nurses at the Komfo Anokye Teaching Hospital. This is a national programme and Kumasi is the only centre of excellence accredited by the Ghana Health Service and the Nurses and Midwives Council for Ghana.

COLLABORATIVE LINKS WITH OTHER INSTITUTIONS OF HIGHER LEARNING/ORGANISATIONS

- Research link with the University of Sheffield, UK since 1992 on Bacteriology of Otitis Media.
- Research link with WHO as a collaborative centre for Hearing Assessment.
- Research link with Benhard Notch Institute Hamburg, Germany. (Prof Horstmann C.) Culminating in the establishment of Kumasi centre for collaborative Research into Tropical Medicine (KCCR), Kumasi.
- University of Utah John Moran Eye Hospital, Salt Lake City Utah, USA.
- University of Abidjan, ENT department (in process) Cote D'Ivoire.

RESEARCH INTERESTS

Prof Sir Dr Dr Brobby and Prof GK Amedofu

- The Causes and Prevalence of Acquired Childhood Deafness and Adult
- Hearing-Impairment in Ghana.
- Molecular Genetics of Congenital Deafness
- Distribution of Connexin 26 R143W, a Gene Mutation for the cause of Non Syndromic Deafness in Ghana.
- Occupational Hearing Loss
- Identification Audiometry
- Aural Rehabilitation
- Brainstem Evoked Responses (ABRs).

Dr Joseph Opoku-Buabeng

Ear, Nose and Throat diseases in children

Dr Peter Awuah

- Mastoidectomy
- Diseases of the Middle Ear

Mr Osei Bagyina

- Articulation and Phonological Disorders
- Speech-language Disorders in aphasic Children and Adults.
- Speech-language Management for Cleft Palate patients
- Voice Management in tracheotomy and laryngectomy patients
- Assessment and management of Stuttering in Children and Adults
- Alternative and Augmentative Communication (AAC) Systems

Dr M Adu-Darko

- Congenital Glaucoma
- Lid Reconstruction
- Orbital Tumours

Dr Seth Lartey

- Diabetic Retinopathy
- Ocular Trauma
- Childhood Blindness

ONGOING RESEARCH ACTIVITIES**EYE Unit**

- Retinoblastoma and its management in Komfo Anokye Teaching Hospital – can it be modified?
- The Causative Organisms in Ocular Corneal Ulcers
- Causes of Ocular Trauma in Kumasi
- Intra-Ocular pressures in 5-year period after trabeculectomy in Congenital Glaucoma.

ENT

- Bacteriology in Otitis Media
- Patterns of hearing loss in Diabetic patients
- Hearing Sensitivity and related Acoustic Impedance Findings
- Characteristics of hearing loss among patients at Komfo Anokye Teaching Hospital, Kumasi
- Ear, Nose and Throat manifestations in HIV/AIDS patients
- Assessment and therapy to Articulation and Phonological Disordered in Ghana
- Articulation Test for the Twi language in Ghana

DEPARTMENT OF MEDICINE**INTRODUCTION**

The Department of Medicine is manned by 10 full-time academic staff, one part-time lecturer, a clerk II secretary and a messenger. The academic staff is supported by Resident medical trainees who assist with teaching of clinical methods to first year clinical students. The undergraduate programme aims to promote proficiency and commitment in care of the sick. The undergraduate programme takes eighty percent of lecture time while the postgraduate programme takes twenty percent of our time.

ACTIVITIES

The Department of Medicine curriculum for first and third year clinical students is aimed at producing a doctor who is capable of developing along a variety of medical career options with further postgraduate training. The emphasis of teaching is the acquisition of technical skills as the basis of solving medical problems, and the ability to interpret data from a variety of modern investigative techniques.

The Department of Medicine organized the Bachelor of Dental Surgery Professional Examinations Part 1 for the Dental School in April.

The increase in student numbers continues to outstrip staff. This is of great concern as the student-exposure time to patients and opportunity for skills training at the bed-side continues to decline.

Postgraduate training is a student-centred approach which encourages active learning through guided self-study. Two Physician Specialists were trained in the year under review. The postgraduate and undergraduate programmes are supported by academics from UK, US and other parts of EU. Open Educational Resources material production has started.

RESEARCH

Current Research activities in the Department include the following:

- A prospective study investigating the pharmacokinetic interaction between efavirenz and artemisinin-based antimalarial drugs in Ghanaian HIV infected patients.
- Prospective cohort studies on HIV/HBV coinfecting patients in Kumasi in relation to HIV status and antiretroviral exposure, with focus on diagnosis, development of drug resistance and HBV surface antigen mutations and efficacy/tolerability of antiretroviral therapy in collaboration with Dr Geretti (UCL) and Dr Chadwick (Middlesbrough)
- Prospective cohort studies on HIV 1, HIV2 and dual HIV1/HIV2 infected patients with focus on response to ART and development of drug resistance, in collaboration with
- Cerebrovascular Accident and metabolic study a pilot study of rapid, point-of-care HIV testing in the VCT and TB clinics at KATH.
- Development of an oral regimen for treatment of Mycobacterium ulcerans disease (Buruli ulcer): a randomized trial of standardized treatment of Buruli ulcer with non streptomycin based combination therapy.

COMMUNITY SERVICE TO SOCIETY

The academic staff is responsible for specialist clinics in the Directorate of Medicine KATH. The clinics include:

- Oncology
- Haematology
- Renal/Hypertension
- Asthma
- Diabetes mellitus
- Cardiology
- HIV/AIDS
- Dermatology

CONFERENCES/SEMINARS/HONORS

- Workshops were organized for all doctors and nurses on management and care of the patient with Diabetes mellitus.
- Lymphoma Forum for Excellence in Stockholm, 2009 Sweden.
- College of Health sciences KNUST 2nd Annual Scientific conference on Lifestyle and non Communicable diseases (diabetes, Obesity, Hypertension and Cancers) 2009 Kumasi
- Neglected Tropical Diseases on hidden successes and emerging opportunities organised in Lisbon Portugal 8-10 February 2010
- Annual International Conference (CME) on Advances in Medicine held at Golden Tulip Kumasi 21st-24th September 2009
- Open Educational Resources (OER) production workshop held on 23-24th February 2009 Kumasi
- 3-day training workshop on modern wound care and Lymphoedema management organised jointly by the Ghana health service, KATH and American Association for advancement of wound care 23-25th February 2009 Kumasi
- Participated in a conference on Neglected Tropical Diseases organised in Mali organised by the European Foundation Initiative 25th-27th September 2008
- Participated in the leadership meeting on Buruli ulcer and the Annual meeting of the Global Buruli ulcer Initiative organised in Cotonou Benin 30th-3rd April 2009

INTERNATIONAL AFFILIATIONS

The Department of Medicine has links with the University of Utah, School of Tropical Medicine, Liverpool, St Georges Hospital, London, James Cook University Hospital, Middlesbrough, Newcastle –Upon-Tyne Medical School and THET, UK.

CONCLUSION

Our aim is to provide commitment to quality medical training to assure the availability of proficient health care interventions including research to the benefit of the future and larger society in a world with rapid technological advancement.

DEPARTMENT OF MOLECULAR MEDICINE

INTRODUCTION

The Department consists of 6 senior members (2 Senior Lecturers and 4 Lecturers) and 4 Senior/Junior Staff, 4 demonstrators (for both basic and Clinical students). The Department is one of the few Departments that offers teaching to both the basic and Clinical Students at the School of Medical Sciences and the Faculty of Allied Health Sciences and Faculty of Pharmacy and Pharmaceutical Sciences, all under the College of Health Sciences. Besides, the Department also carry out postgraduate research leading to MSc/MPhil/PhD in Chemical Pathology/Clinical Biochemistry and Clinical Immunology. Currently, we have a total of 34 postgraduate students with 9 students pursuing programmes leading to Ph., and 25 pursuing MPhil/MSc degrees. All are regular postgraduate students.

ON-GOING RESEARCH IN THE DEPARTMENT OF MOLECULAR MEDICINE

- Biochemical Indices of Burkitt's Lymphoma: Clinical Relevance in Prognosis and Management -**Dr. F. A. Yeboah**

- Predicting disease incidence with Climate Change. - **Dr. F. A. Yeboah**
- Obesity and Dyslipidaemia as Predictive risk factors to coronary heart disease among a cross-section of the Ghanaian population - **Dr. F. A. Yeboah**
- Genetic Mutational Patterns of Breast Carcinomas: Basis of Tumour Molecular Characterization and Clinical response outcomes. - **Dr. F. A. Yeboah**
- Iron deficiency, cognitive function and polymorphism among School Children at the Atwima-Bosomtwe Kwanwoma District in Ashanti Region - **Dr. F. A. Yeboah**
- Heavy Metal toxicity as an occupational hazard among artisan mechanics of the Suame Magazine - **Dr. F. A. Yeboah**
- Characterization of the Molecular and Biochemical risk factors of cataracts in Komfo Anokye teaching hospital KATH. 2008 – 2009 - **Dr. F. A. Yeboah**
- The Use of PSA, Free PSA/Total PSA ratio and Biopsy for the diagnosis of Prostate Cancer - **Dr. (Mrs.) M. T. Frempong.**
- The role of CCR2 and CCR5 Chemokine receptors in the Transmission of HIV infection and later disease progression - **Dr. (Mrs.) M.T. Frempong.**
- Oxidative stress and effects of anti-oxidant vitamins in type II Diabetes Mellitus - **Dr. E. F. Laing** (2007-2009)
- The use of glycosylated haemoglobin in the differentiation of normoglycaemia and impaired glucose tolerance- **Dr. E. F. Laing** (2007-2009)
- Anti-oxidant properties of *Moringa Oleifera* in type II diabetes mellitus - **Dr. E. F. Laing** (2008-2010)
- The correlation between Renal Dysfunction and Cardiovascular Disease - **Dr. W.K.B.A. Owiredo** (2007-2009)
- The Putative Risk Factors among Ghanaian Women presenting with Pregnancy Induced Hypertension - **Dr. W.K.B.A. Owiredo** (2006-2009).
- The estimation of Renal Function and Electrolyte homeostasis among Ghanaian women presenting with Pregnancy Induced Hypertension - **Dr. W.K.B.A. Owiredo** (2006-2009)
- The correlation between Anthropometry and Fertility indices in men and women- **Dr. W.K.B.A. Owiredo**
- The correlation between indices of obesity, cardiovascular risk factors and religious denominations and sects - **Dr. W.K.B.A. Owiredo** (2008-2010)
- Comparison between the BT 3000 Chemistry Autoanalyzer and the WHO recommended (o-cresolphthalein complexone) method for estimating serum calcium - **Dr. W.K.B.A. Owiredo** (2009-2010)
- The effect of tube quality and bench time on blood glucose estimation - **Dr. W.K.B.A. Owiredo** (2009-2010)
- Correlation between Anthropometry, serum uric acid concentration and blood pressure in the Kumasi metropolis - **Dr. W.K.B.A. Owiredo** (2009-2010)
- Determination of reference ranges for plasma glucose, serum urea and creatinine in the Kumasi metropolis (2009-2010) - **Dr. W.K.B.A. Owiredo**
- Comparison of creatinine clearance with the predictive equations for estimating renal function - **Dr. W.K.B.A. Owiredo**, (2009-2010).

- Estimation of the effect of lead on erythropoiesis among mechanics in the automobile industry in Kumasi - **Dr. W.K.B.A. Owiredo**, (2009-2010).
- Evaluation of the correlation between markers of cardiovascular risk and severity of erectile dysfunction among Ghanaian diabetics - **Dr. W.K.B.A. Owiredo** (2008-2010)
- The role of Hormonal and Metabolic Imbalances in the manifestation of Psychiatric presentations - **Dr. W.K.B.A. Owiredo**, (2009 -2011).

CONFERENCES/SEMINARS/MEMBERSHIPS

Some members of the department had the opportunity to participate in the following

Conferences/seminars/workshops:

Attended the 2nd Annual Scientific Conference on Life Style and Non-Communicable Diseases(organised by the College of Health Sciences, at Noda Hotel, August 2009 - **Dr. F. A. Yeboah**

Attended 4TH International Conference of ESES on Impacts of Climate Change on Natural Resources Suez Canal University Ismailia, Egypt, from 10th – 12th November, 2009- Presented a paper a paper titled: *Predicting disease incidence with Climate Change: A case study in Ghana*- **Dr. F. A. Yeboah**

Attended theAnnual International Conference on Advances in Medicine organised by the Komfo Anokye Teaching Hospital, Ghana College of Physician and Surgeons and Africa Partners Medical at the Golden Tulip Hotel, Kumasi, Ghana from 21st-24th September 2009 - **Dr. F. A. Yeboah**

Attended the 6th R.P. Baffour Memorial Lectures. Theme: African Freedom in the Caribbean Diaspora organised by KNUST from 23rd November to 27th November, 2009- **Dr. F. A. Yeboah**

Attended an International Conference on Frontiers in Laboratory Medicine from the 26th -27th January, 2010 at the Austin Court Birmingham, UK- **Dr. F. A. Yeboah**

November, 2009 obtained membership renewal of the International Aids Society (IAS) Membership No.1323. **Dr. F. A. Yeboah**

Biochemical effect in rats of *moringer oleifera* leaf powder in the diet investigation of dyslipidaemia in diabetics at the KATH, Kumasi, Ghana-**Dr. E.F. Laing**

Biochemical effect in rats of *moringer oleifera* leaf powder in the diet investigation of dyslipidaemia in diabetics at the KATH, Kumasi, Ghana-**Dr. E.F. Laing**

Second Annual Scientific Conference of the College of Health Sciences, KNUST, Kumasi, Ghana. Theme: Life Style and Non-Communicable Diseases (Diabetes, Obesity, Hypertension and Cancers) 10-11th September 2009 at the Miklin Hotel, Kumasi.

IDF , 20th World Diabetes congress Montreal 18-22 October 2009- **Dr. R.A. Ngala**

College of Health Science. 2nd Annual Scientific conference 10-11 Sept 2009 Current Research- **Dr. R.A. Ngala**

Prevalence of type II diabetes associated with obesity in the Kumasi Metropolis- **Dr. R.A.Ngala**

Prevalence of cardiovascular risk factors and type II diabetes among HIV/AIDS patients on Highly active antiretroviral therapy. –**Dr. R.A. Ngala**

Co-ordinating collaborative research in Diabetes and Obesity between Dept. of Molecular Medicine-KNUST and University of Buckingham.- **Dr R.A. Ngala**

MAJOR SERVICE TO THE COMMUNITY

Members of the Department continue to supervise and validate the results of the routine diagnostic Chemical Pathological analyses being turned out at the Clinical Biochemistry Department of the Komfo Anokye Teaching Hospital.

In addition, members served in various capacities in and outside the University as follows:

- **Dr. F. A. Yeboah** is the current Head of Department. Member: University Academic Board; SMS Board; Postgraduate Board; Dean of students
- **Dr F.A Yeboah** acted as External Examiner for the University of Ghana School of Research and Graduate Studies(2010)
- **Dr F. A. Yeboah** served as a member of the Research and Publication Committee of THE College of Health Sciences, KNUST and the Komfo Anokye Teaching Hospital (2009-2010)
- Community based disease screening in the following areas;

Dr. F. A. Yeboah, Dr. (Mrs.) M. T. Frempong

- Baptist Church, (mainly Pastors & wives)
- Pentecost Church and affiliates, Kwadaso, Kumasi
- Kumasi Town Christian Fellowship Group

Dr. (Mrs.) M. T. Frempong serves as:

- Hall Council Member, Africa Hall, 1986 to date.
- Member, Board of Governors of Technology Secondary School, Kumasi, 2002 to date
- Supervisor: Routine diagnostic Investigations at KATH
- appointed Hall Warden for African Hall with effect from Nov. 2007 to date.
- Serves as a member of the Committee for Human Research, Publications and Ethics of the school of Medical Sciences/Komfo Anokye Teaching Hospital
- Member of the School Board, SMS

Dr. E. F. Laing serves as:

- Consulting Medical Officer at the Komfo Anokye Teaching Hospital, Diabetic Clinic
- Board of the Faculty of Laboratory Medicine of the Ghana College of Physicians and Surgeons
- Member of School Board
- Tutor: Final Year Mb ChB class
- Departmental Examinations Officer
- Member, Pastoral Team: Universal Prayer Group Ministries International:

Dr. W.K.B.A. Owiredo serves as:

- School Examinations Officer, SMS, since 2001
- Member of the Educational Committee of the School Board, SMS

- External Examiner, School of Laboratory Technology, University of Cape Coast
- External Examiner, Department of Medical Biochemistry, University of Development studies, Tamale.
- Visiting Lecturer, Department of Chemical Pathology, School of Medicine and Health Sciences, University of Development Studies, Tamale
- Coordinator of the Applied Basic Sciences Course of the College of Physicians and Surgeons, KATH Chapter
- Cognate Member, Faculty of Allied Health Sciences Board.
- Executive Member, St Monica's Senior High School PTA
- Secretary, Calvary Temple Assembly of God Church Board-
- Member, School Management Board, Calvary Temple Assembly of God School
- Community based disease screening in the following areas:
 - i. Assembly of God church, Meduma
 - ii. Wesley Cathedral, Adum
 - iii. Mount Sinai Methodist church, Atonsu
 - iv. Dominion World Christian Assembly, Meduma
 - v. Automobile Workshops at Abrepo Junction, Kumasi
 - vi. Automobile Workshops at Sofo-Line, Kumasi
- Hall Fellow, University Hall

Dr. R. A. Ngala serves as Member of SMS Board

CONFERENCE

Abstract of paper presented: Paul Nsiah, B.A. Eghan, 2009:

Absolute total body fat (Body mass index) is more associated with cardiovascular risk than central adiposity (Waist circumference) in Sub-Saharan subjects

THE DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY INTRODUCTION

The Department of Obstetrics and Gynaecology of the School of Medical Sciences, College of Health Sciences, also serves as a Clinical Directorate at the Komfo Anokye Teaching Hospital (KATH). The organizational structure of the Department/Directorate is therefore a combination of the University and Teaching Hospital systems with administrative staff from KNUST and KATH.

SENIOR ACADEMIC AND SERVICE STAFF

There are at present 18 senior members/senior specialists and consultants in the department. Ten are full time whiles 3 are on contract employment with the university. Five are full time staff of KATH:

ACADEMIC AND PROFESSIONAL PROGRAMMES IN THE DEPARTMENT

The following programmes are currently running in the Department

- Undergraduate Obstetrics and Gynaecology course towards the MB ChB degree programme of the University of Science and Technology. *There are 119 students now in the department for the 2009-10 academic year.*
- MPH/MSc programme in Population and Reproductive Health, in conjunction with the Department of Community Health, under the KNUST-Gates Linkage.

- Postgraduate Obstetrics and Gynaecology programmes for the Fellowship of the West African College of Surgeons (FWACS) and the Membership of the Ghana College of Physicians and Surgeons (MGCS). *There are 48 residents at various stages of training for the two colleges.*
- International family planning fellowship programme (IFPPF), in conjunction with the Ghana College of Physicians and Surgeons and the University of Michigan Department of Obstetrics and Gynaecology. *There are two fellows in the programme.*
- Internship for House Officers and In-service medical training for doctors.
- Reproductive Health and Family Planning update for district level health personnel, in conjunction with Engender Health and Quality Health Partners.
- Practical training for nurses and midwifery students.

RESEARCH

There are a number of ongoing international and individual research activities in the Department, including:

- *Ghana Couples Family Planning Study*
- *Mainstreaming Emergency Contraception in Ghana.*

These two are collaborative reproductive health studies with the Johns Hopkins University Bloomberg School of Public Health (USA) under the linkage between KNUST SMS and the Bill and Melinda Gates Institute.

- *International Caesarean Section Techniques Trial.* This is an international study in Caesarean section techniques with the National Perinatal Epidemiology Unit of University of Oxford.
- *African women and cervical cancer.* This is a multicentre study to determine Human Papilloma virus distribution in cervical cancers in Africa. It is sponsored by Glaxo SmithKline Pharmaceutical Company.
- *Complications of pregnancy study.* This is a collaborative study with the Department of Obstetrics and Gynaecology of the University of Michigan Medical School, Ann Arbor, USA.
- *WOMAN TRIAL (World Maternal Antifibrinolytic trial).* Multicentred, randomized, placebo controlled trial collaborated by the London School of hygiene & Tropical medicine.

In addition to the listed international collaborative research, individual members of the Department are undertaking research in several areas including:

- Unsafe abortion and the law.
- Obstetric fistula.
- Medical Education
- Pregnancy and transmission of HIV/AIDS, STIs and rare viruses
- Imaging in obstetrics and gynaecology
- Rhesus isoimmunization in pregnancy
- Vacuum deliveries at KATH
- Prevalence of pre-malignant cervical cell changes in asymptomatic women at the Family Planning Clinic at KATH
- Female sexuality after hysterectomy
- Audit of third stage labour management and primary postpartum haemorrhage
- The quality of antenatal care of women delivering in KATH.

- Study on the gaps in the child welfare and family planning clinics in KATH.
- 5 years of Visual Inspection of Cervix with Acetic Acid as Cervical Cancer Screening Method at Komfo Anokye Teaching Hospital-- Kumasi. A Retrospective Analysis of client patronage and results.
- Screening for HBsAg in serum in pregnant women during ANC in Ashanti Region. Attitude of service providers
- Knowledge, Attitudes and Practices of Emergency Contraception among females in the Kumasi metropolis
- Practices of Induction of Labour at Komfo Anokye Teaching Hospital, Kumasi
- Knowledge and Perception of Induced Abortion among health workers in Ghana

Conference presentations

Turpin C.A. (2010). Passive and Active Management of the third stage of labour. Annual general congress of the Society of Obstetricians and Gynaecologists of Ghana (SOGOG). Theme: Achieving the 5th Millennium Development Goal. Coconut Grove Regency, Accra. 26th February 2010.

K.A. Danso. (2009). Paper: Violence against women. What can the society do? Presented at 36th Scientific Conference of the Ghana Surgical Research Society. Kumasi. 6th June, 2009.

K.A. Danso (2009). Video on 'Examination of the pregnant woman.' Presented at the West African College of Surgeons. Training of examiners workshop at University of Ibadan, Nigeria. 13th October 2009.

Hilary Megan Schwandt, Andreea Creanga, Richard Adanu, **Kwabena Danso**, Tsiri Agbenyega, Michelle Hindin. (2009). Paper: A comparison of induced abortion, spontaneous abortion and ectopic pregnancy gynaecologic patients in Ghana. Presented at the International conference of family planning: research and best practices. Munyonyo, Uganda. 15 – 18 November, 2009.

Hilary Megan Schwandt, Andreea Creanga, **Kwabena Antwi Danso**, Frank Ankobea-Kokroe, Cornelius Archer Turpin, Michelle Hindin. (2009). Paper: Contraceptive practice prior to female sterilization in Ghana: 1996-2005. Presented at the International conference of family planning: research and best practices. Munyonyo, Uganda. 15 – 18 November, 2009.

K. A. Danso (2010). Paper: The International Family Planning Fellowship Programme: training experts in family planning and comprehensive abortion care for maternal health improvement in Ghana. Presented at the Annual scientific and general meeting of the Society of Obstetricians and Gynaecologists of Ghana. Accra. 26th February, 2010.

Opoku Baafuor K. (2009). Contraceptive Use Among At-Risk Women in the Kumasi Metropolis. International Conference on Family Planning: Research and Best Practices, Munyonyo, Uganda, November 2009

Opoku Baafuor K. (2009). Adu-Sarkodie Y. Prevalence of Genital Chlamydia and Gonococcal infections among at-risk Women in Kumasi Metropolis. 2nd Annual Scientific Conference, College of Health Sciences, KNUST, Kumasi, September 2009

Opoku Baafuor K. (2009). Provider Knowledge and Attitudes on Abortion Care Services in Ghana. 2nd Annual Scientific Conference, College of Health Sciences, KNUST, Kumasi, September 2009.

Britwum-Nyarko A, Adu Sarkodie Y, **Opoku Baafuor K.** (2009). Testing for Syphilis in Pregnancy: Policy versus practice. ISSTD 2009, London

Mayaud P, Adu-Sarkodie Y, **Opoku Baafuor K.** (2009). Getting Research into Policy: HSV-2 Treatment and HIV Infection; International Guidelines Formulation and the Case of Ghana. ISSTD 2009, London

Turpin C.A (2009). Rational use of medicine: Facilitator: Prescribing Habits. Continuous Professional Development of the GMA National symposium on rational use of medicine. Ghana Medical Association. National Secretariat Conference Hall, Korle Bu, Accra. July 10, 2009

Turpin C.A. (2009). Rational use of Medicines: Facilitator: Prescribing Habits. Continuous Professional development of the Ghana Medical Association. National Symposium on Rational Use of Medicines. Golden Tulip Hotel, Kumasi. July 17, 2009

H.S.Opare-Addo, W.K.B.A Owiredo, T. Dapilah. Anthropometric and Fibroid risk among Ghanaian women. 2nd Annual Scientific Conference, College of Health Sciences, KNUST, Kumasi, September 2009.

Turpin C.A.(2009). Rational use of Medicines: Facilitator: Overview. Prescribing Habits. Continuous Professional development of the Ghana Medical Association. National Symposium on Rational Use of Medicines. Auditorium of School of Medicine and Health Sciences, University of Development Studies Campus, Tamale. July 24, 2009.

Larsen-Reindorf R E, Otupiri E. (2009). Factors associated with induced abortion among women in Hohoe, Ghana at the International Conference on Family Planning in Kampala, Uganda on November, 2009.

Larsen-Reindorf R E, (2009). Decision to Incision Time in Caesarean Section in Komfo Anokye Teaching Hospital at the Ghana Surgical Society Meeting held on May 2009 in KATH.

Larsen-Reindorf R E, **Odoi AT**(2009). The Challenges on Obesity in Obstetric and Gynaecologic Practice at the 2nd Annual College of Health Sciences Conference on August 2009 at Miklin Hotel, Kumasi.

V.N. Addo (2009). *Prevention of ovarian cancer – what is the current state of affairs?* Ghana College of physicians and surgeons 4th March, 2009.

Conference and Workshops Attended

Danso KA. Attended the Ghana Maternal Health Survey dissemination seminar. Accra 14th May, 2009

Danso KA, GMA Continuing Professional Development on “Rational use of medicines.” Kumasi. 17th July, 2009.

Danso KA, Opare-Addo HS, Addo VN. Seminar on “Towards safe practice in instrumental vaginal delivery by the Faculty of Obstetrics and Gynaecology West African College of Surgeons and Department of Obstetrics and Gynaecology, University College Hospital, Ibadan in Ibadan, Nigeria. 12th October, 2009

Danso KA, Ghana-Michigan CHARTER meeting and workshop. 7-14 November, 2009. Ann Arbor, Michigan; including an international symposium on 'strengthening health systems to improve global population health (13th Nov. 2009).

Danso KA, V. N. Addo. 50th Annual Conference and scientific meeting of the West African College of Surgeons' in Calabar, Nigeria. 6-13th February, 2010.

Larsen-Reindorf R E XIX FIGO world congress of gynecology and obstetrics, cape town, South Africa, October 4-9, 2009.

Larsen-Reindorf R E 51st AGC of Ghana Medical Association on the theme: Towards a better healthcare in Ghana: the human resource challenge in the Northern Sector of Ghana Nov 4- 8, 2009.

Larsen-Reindorf R E International Conference on Family Planning: Research and Best Practices, Nov 15-18, 2009, Muyonyo, Kampala, Uganda.

Danso KA, Opare-Addo HS, Addo VN. Odoi AT. Larsen-Reindorf R E attended the 36TH scientific meeting of the GSRs/WACS .Kumasi, 6TH JUNE, 2009.

Danso KA, Opare-Addo HS, Addo VN. Attended WACS 2nd training of examiners workshop, University of Ibadan conference centre, Ibadan 13th October, 2009.

Addo VN.attended 2nd annual scientific conference, College of Health Sciences, KNUST

V. N. Addo (2009). *Coronis (international study of caesarean section surgical techniques)*- 36TH Scientific meeting of the GSRs/WACS .Kumasi, 6TH June, 2009.

Opare-Addo HS.Attended training of trainers workshop on Evidenced-based medicine for reduction of maternal mortality at the Institute of Tropical Disease Research and Prevention of the University of Calabar Teaching Hospital, Calabar, Nigeria on 7th September 2009 to 10th of September 2009.

Danso KA, Opare-Addo HS , Odoi AT. Razak A-Mumin. Attended the annual general congress of the Society of Obstetricians and Gynaecologists of Ghana (SOGOG). Theme: Achieving the 5th Millennium Development Goal. Coconut Grove Regency, Accra. 26th February 2010.

SERVICE

- The Department provides specialist level women's health care (general obstetrics and gynaecology service) at KATH. The clinical services are rendered under mainstream obstetrics, gynaecology and family planning. However, there are ongoing plans to develop into subspecialty services in the following areas:
- Maternal Fetal Medicine: (the recently started special clinics in diabetes mellitus and sickle cell disease, the creation of the high dependency unit for hypertensive pregnancies in Ward A1 and the two newly acquired sophisticated ultrasound machines by the hospital for the department are developments in this direction)
- Urogynaecology: (an obstetric fistula treatment service is available and developing towards a full urogynaecology service)
- Gynaecologic oncology: (there is ongoing combined clinic run with the radiation oncologist; cervical cancer screening with VIA and Pap smear on request is available)

- Endocrinology and assisted conception.
- Family Planning and Reproductive Health: (the Family Planning Centre offers services and training in a wide range of products; sexual and reproductive health counseling has been integrated into post abortion care; the provision of facilities and training are on going for comprehensive abortion care services in the department; and the IFPPF programme took off in August)

The key challenge in service provision is the overwhelming congestion of patients on the maternity and gynaecology wards. It is our hope that the maternity block under construction would be completed by the end of 2011 and thus make more space available for teaching and subspecialised units

Departmental representatives on KATH committees

- Procurement Committee - Dr. G. O. Asubonteng
- Quality Assurance Committee - Dr Razak A-Mumin

The Department provides resource persons for several national and international assignments such as Faculty Board members and examiners to the following organizations.

- The Academic Board of Garden City University
- The Ghana Nurses and Midwives Council.
- The West African College of Surgeons
- The Medical and Dental Council of Ghana.
- The University of Ghana Medical School.
- The Ghana College of Physicians and Surgeon

DEPARTMENT OF PATHOLOGY

INTRODUCTION

The Department of Pathology was the first to be established in the School as the founding Dean, Late Prof. W. N. Laing was himself a pathologist. The Department is a composite discipline comprising;

- The Department of Morbid Anatomy and Histopathology
- The Department of Forensic Medicine or legal Medicine
- The Department of Hematology

TEACHING

The Department continues to offer courses in General Pathology to undergraduate students pursuing the 3- year BSc. Human Biology Programme. It also offers courses in the Pathology leading to MB ChB. Part 1A Examinations. The Department also services the following Departments

- BSc Nursing
- BSc Optometry
- MB Herbal Medicine
- Residents for fellowship training in Pathology
- DLO Students for WACP/S

RESEARCH

The on-going project includes;

- Cardiovascular disease as a cause of Death in Ghana, by K. A. Boateng
- Suicides in Ghana, By Dr. K. A. Boateng

- An approach to disputed paternity management in Ashanti

SERVICE TO THE COMMUNITY

The Department provides Diagnostic histopathology, cytology, Hematological and autopsy services at Komfo Anokye Teaching Hospital. It also offers forensic services to the State.

CONCLUSION

The Department of Pathology continues to work in line with its own objectives which are also in line with those of the School of Medical Sciences and the Kwame Nkrumah University of Science and Technology.

DEPARTMENT OF PHYSIOLOGY

The Department teaches the Human Biology I and Human Biology II students and the Allied Health Sciences which comprises Nursing, Herbal Medicine, Medical Laboratory Technology and Sports & Exercise Sciences.

There are seven (7) Postgraduate (MPhil) students in the Department. Six students are in their first year and one will be completing the programme this year.

PROJECTS CURRENTLY UNDERTAKING BY MEMBERS IN THE DEPARTMENT

- Modeling the Epidemiology Transition: Energy Expenditure, Obesity and Diabetes (METS). The project started last year 2009 and will run for Three (3) years.
- A phase III, double blind (observer-blind), randomized, controlled multi-center study to evaluate, in infants and children, the efficacy of the RTS,S/AS01E candidate vaccine against malaria disease caused by *P. falciparum* infection, across diverse malaria transmission settings in Africa
- Re-defining Cerebral Malaria. The Severe Malaria in African Children (SMAC) network Study
- Efficacy and safety of rectal artesunate in paediatric patients a randomised-controlled study

DEPARTMENT OF SURGERY

INTRODUCTION

The Department of Surgery, School of Medical Sciences, which also doubles as the Directorate of Surgery at the Komfo Anokye Teaching Hospital, comprises the following subspecialties:

- General Surgery
- Paediatric Surgery
- Trauma and Orthopaedic Surgery
- Urology
- Maxillofacial Surgery
- Plastic and Reconstructive Surgery
- Neurosurgery

AIMS/OBJECTIVES

The Department of Surgery has over the years aimed to:

- Fulfil the general vision of the School of Medical Sciences through the pursuit of excellence in teaching, research and high quality service to the community. The training of doctors with high ethical, moral and social standards remains our goal.
- Provide basic clinical training in all the subspecialties currently available in the department and expand training into other subspecialties such as Cardio-thoracic Surgery, Vascular Surgery, Endocrine Surgery and Laparoscopic Surgery.
- Provide postgraduate training in surgery through the fellowship of the West African College of Surgeons and the Ghana College of Physicians and Surgeons as well as provide advanced training to doctors throughout Ghana through short term courses i.e. Continuing Medical Education (CME) and Continuing Professional Development (CPD) Courses.
- Promote the conduct of research for improving the quality of teaching and service.

ACTIVITIES

Specialists in the Department

- organized basic surgical skills courses for district and mission hospitals and residents of Komfo Anokye Teaching Hospital every year.
- treated children with cleft deformities together with a team of surgeons from Children's Surgery International.
- performed reconstructive surgeries in genito-urinary system with surgeons from International Volunteers in Urology.
- organized a workshop in 2009 on wound management.
- attended various conferences (both locally and internationally) to upgrade their knowledge and skills in surgery.

There were three visiting teams in 2009 - two from USA and one from UK who performed various open-heart surgeries on children and adults with participation of residents in the Department.

TEACHING

Teaching continues to be of very high standards in the Department. Lecturers are encouraged to update their lectures to reflect the present state of affairs in medicine. Both undergraduate and postgraduate teaching has been intensified with the introduction of new concepts. All lecturers now use PowerPoint presentations. Handouts are made available to students.

The large increase in student numbers has necessitated a reorganization of our teaching programme. The quality of teaching, however, remains high. Our undergraduates performed well in the final examinations last year, ending up with about 42 credits. The problem of two classes being combined together for teaching needs to be looked into seriously. This is of great disadvantage to the students.

Two of our residents: Dr.O. Owusu Danso and Dr. A. Lamina are pursuing various postgraduate courses abroad and will join the Department on completion.

Dr. Peter Konadu successfully completed his postgraduate studies as a trauma and orthopaedic surgeon and has returned to join the Ministry of Health staff at Komfo Anokye Teaching Hospital. The locally trained residents continue to perform creditably in the exit examinations. Four residents (Drs. Samuel Osei-Nketiah, Dominic Konadu Yeboah, Kwadwo Poku Yankey and Edwin Yenli) passed out last year

as members of the Ghana College of Surgeons and are serving in various hospitals of the country as surgical specialists.

RESEARCH

Research continues to be a major focus of the Department and all consultants have research programmes. New and ongoing research programmes include:

- Breast cancer (ongoing).
- Aetiology of gastric outlet obstruction (ongoing).
- Gastric malignancies (ongoing).
- Prospective study in typhoid perforations (ongoing).
- Buruli Ulcer (ongoing).
- Epidemiology of trauma and violence in Ghana (ongoing).
- Colonic cancers (ongoing).
- Sigmoid volvulus (ongoing).
- Prospective study into the causes of acute abdomen in sub-Saharan Africa Hospital (ongoing).
- Neonatal malformations (ongoing).
- Malformations in children (ongoing).
- Hirschsprung's disease management (ongoing).
- Prostate cancer (ongoing).
- Male Infertility (ongoing).
- Priapism (ongoing).
- Cleft lip and palate deformity (ongoing).
- Oral squamous cell carcinoma (ongoing)
- Autogenous tissue for reconstruction in the maxillofacial region (ongoing)
- CNS abnormalities (ongoing)
- Aetiology of road traffic accidents at Komfo Anokye Teaching Hospital (ongoing)
- Management of complicated leg injuries at Komfo Anokye Teaching Hospital (ongoing)
- Buccal mucosa use in urethroplasty
- The incidence of chest injuries in the ICU from 2003 in Komfo Anokye Teaching Hospital (ongoing)
- Pneumatic reduction of intussusceptions at Komfo Anokye Teaching Hospital (ongoing)
- Use of CT scan to diagnose unconfirmed cases of typhoid perforation

COMMUNITY SERVICE/CONTRIBUTION TO SOCIETY

During the year under review the Department of Surgery continued to give high quality specialized services to the community. We organized Continuing Medical Education courses in Trauma and Basic Skills in Surgery for doctors in district hospitals from September 12 - 23, 2005 and in September 2006.

Prof. P. Donkor is the provost of the College of Health Sciences. Prof. F.A. Abantanga is a member of the editorial board of the peer-reviewed journal - African Journal of Paediatric Surgery and also a reviewer of the Indian Journal of Surgery.

PUBLIC EDUCATION

Late presentation, ignorance and superstition continue to account for the poor prognosis in most patients. The Department intensified its public education programme during the year under review. The Department participated in public lectures, radio and television programmes. Patients attending outpatient clinics were educated particularly on the advantages of early attendance to hospital.

LINKS/INTERNATIONAL RELATIONS

At the undergraduate level, the department enjoys linkages with the various Universities that have linkages with the School of Medical Sciences. Students from the U.S.A., Germany, Sweden, Denmark and UK came for their elective training in our Department.

At the postgraduate level our linkages with the University of Ulm, Germany and the University of Washington U.S.A. continue to be strong. We have some of our residents at various levels of training in University Hospitals in Germany.

AWARDS

Prof. J.W. Hiadzi and Prof. Kurt Lennert awards were not given to students this time round because of below par performance.

CONCLUSION

The Department is making progress in the areas of teaching, research and service. We diligently prepare our students to make them understand the rudiments of surgery to be able to stand on their own when they become house officers. The challenge is getting the requisite number of surgeons to teach the increasing numbers of medical students in the University. An effort should be made by the authorities of the University to employ more lecturers in surgery. At the moment, we have five or so applicants who are still waiting to be interviewed and employed by the University to enable us beef up our staff numbers.

FACULTY OF ALLIED HEALTH SCIENCES

The Faculty of Allied Health Sciences is one of the faculties in the College of Health Sciences, and comprises the following Departments:

- Department of Medical Laboratory Technology
- Department of Nursing
- Department of Sports and Exercise Sciences
- Department of Sonography

The Department of Medical Laboratory Technology is in the 12th year and has 156 students; Nursing is in the 7th year of establishment with 198 students, and Sports and Exercise Sciences in the 6th year with 89 students, which has already graduated its first batch of students and the Department of Sonography is in the 1st year with 3 students.

DEANSHIP

Dean of the Faculty
Vice- Dean

Rev. Fr. Prof. John Appiah-Poku
Dr James A. Adjei

STAFF

The biggest challenge still remains the low staffing level. Efforts are beginning to pay off with the recruitment of two more senior members.

FACULTY BUILDINGS AND OFFICES

The faculty has no buildings and offices of its own. The Faculty is currently housed in the School of Medical Sciences' buildings, and continues to share lecture rooms, laboratory and internet resources. School of Medical Sciences has been very supportive. We are grateful. The faculty's small office building is scheduled to be completed by the end of the academic year.

DEPARTMENT OF MEDICAL LABORATORY TECHNOLOGY

STAFFING

Lecturers:	4
Service lecturers	10
Administrative Assistant	1

TEACHING

The Department runs the BSc Medical Laboratory Technology programme, started some 10 years ago, and produces professional Biomedical Science graduates, through regular lectures, an extensive bench based laboratory training, tutorials and seminars.

Six batches of graduates have passed out; some are contributing their quota to the health delivery system, and others are pursuing professional Biomedical Sciences graduates programmes.

ACADEMIC STAFF MEMBER

Dr Alexander Yaw Debrah is the Head of Department, Mr. Clement Opoku-Okrah, Dr Addai Mensah Otchere and Dr. Nafiu Amidu are the other academic staff. The rest of the courses are handled by lecturers from the Departments of Anatomy, Physiology, Pathology, Microbiology, and Molecular Medicine of the School of Medical Sciences.

LINK WITH OTHER INSTITUTIONS OF HIGHER LEARNING

The Department is currently developing links with the Department of Medical Laboratory Science of the College of Health Science of the University of Ghana and the School of Biomedical Science of the University of Westminster. UK

ON-GOING RESEARCH ACTIVITIES

Clement Opoku-Okrah

- Microcytic hypochromic red blood cells confer protection from severe *Plasmodium falciparum* malarial parasitaemia in both α + thalassaemias and non thalassaemia individuals
- Microcytic hypochromic anaemia amongst pregnant women attending antenatal clinic at Bolgatanga Regional Hospital.
- Iron deficiency anaemia amongst sickle cell disease patients attending Komfo Anokye Teaching Hospital.

Dr Alex Debrah

- Effect of azithromycin treatment on the *Wolbachia* endobacteria of *Onchocerca volvulus*.
- Plasma vascular endothelial growth factor-A (VEGF-A) and VEGF-A gene polymorphism association with hydrocele development in lymphatic filariasis

VISIT

Dr. Caroline Smith and Dr Martin Parry of the University of Westminster visited the Department as a follow-up to an earlier visit to the UK by Mr. Clement Opoku-Okrah to establish a link between the

Departments of Biomedical Science, University of Westminster. (UK) and the Department of Medical Laboratory Technology (KNUST)

WORKSHOP/CONFERENCES AND SEMINARS

Clement Opoku-Okrah

Global Collaborative Research in Sickle Cell Disease Network. Ghana International Research Consortium in Sickle Cell Disease Concept Meeting: 22nd January 2009-KCCR. Kumasi. Ghana

Dr Alex Debrah

18th -22nd Nov. 2009

58th Annual meeting of American Society of Tropical Medicine and Hygiene (ASTMH), Washington, **USA**

Paper presented

Doxycycline is effective in clearing microfilariae in the skin of onchocerciasis patients in whom repeated ivermectin treatment has failed to clear

18th -22nd Nov. 2009

58th Annual meeting of American Society of Tropical Medicine and Hygiene (ASTMH), Washington, **USA**

Paper presented

Doxycycline improves filarial lymphoedema independent from its action on *Wolbachia*

Dr Addai-Mensah Otchere

Workshop on Open Educational Resources organized by the University of Michigan in Consultation with the College of Health Sciences, KNUST and the Hewlett Foundation 23-24th February, 2009.

DEPARTMENT OF NURSING

STAFFING

Lecturers: full time – 2

Part time – 5

Visiting professor – 1

Administrative staff – 1

TEACHING

The Department provides intensive theoretical and clinical teaching in nursing, building on knowledge in the basic sciences. This prepares students to become professional nurses capable of effectively delivering nursing care to their clients and significant others. The course also prepares the students to identify pertinent health problems in health institutions and communities and to effectively design programme that can address these. The teaching methods imparted equip students to deliver health information to various groups in order to meet their particular needs.

The Department's skills laboratory has been equipped with resources to provide pre-clinical demonstration of nursing procedures to students and for students to practice on their own.

ACTIVITIES

Research

A study on Control of pregnancy-associated malaria through community involvement in the Afigya Sekyere District is in its completion phase.

SERVICE TO THE COMMUNITY

The department provides technical support to the Ministry of Health and Ghana Health Service. The senior members serve on some college boards of the University. Senior members serve as foreign mentors in research for students from School of Nursing, University of New Hampshire, USA. A senior member serves as external examiner for the Narh-Bita School of Nursing, Tema.

LINKS WITH INSTITUTIONS OF HIGHER LEARNING

The department has links with the University of Ghana, Legon, University of Massachusetts, USA, Minnesota State University, School of Nursing, USA and College of Nursing, University of Michigan, USA, CHRD-DBL, University of Copenhagen, Denmark.

STUDENTS EXCHANGE PROGRAMME

As a result of the fruitful relation with the University of Massachusetts, an Exchange Programme has been instituted and running for two (2) years now. Under this programme, Four (4) students travel to Massachusetts for a period of eleven (11) weeks each year. The main objective is to expose and enhance their practical skills.

PARTICIPATION IN WORKSHOPS/CONFERENCES/SEMINARS

Workshop on Open Educational Resources (OER) organized by OER Africa and Hewlett Foundation at Golden Tulip Hotel, Kumasi from 23rd -24th February, 2009.

Strategic Leadership and Management course for the Enhancement of Education of Health professionals from 5th -10th January, 2009 at Eusbelt Hotel, Sunyani. This was organized by the College of Health Sciences, KNUST.

PROFESSIONAL LICENSURE EXAMINATION

The Department registered twenty-four (24) candidates for the professional nursing examination organized by the Nurses and Midwives Council for Ghana. Twenty (20) of the candidates were successful in all the examined areas.

DEPARTMENT OF SPORTS AND EXERCISE SCIENCE

STAFFING

Senior Lecturer	-	1
Lecturers: Full time	-	1
Part time	-	9
Typist Grade I -		1

The Head of Department is Dr. James A. Adjei.

TEACHING

The Department of Sports and Exercise Science is the youngest in the faculty. It offers and prepares students for a four-year degree in Sports and Exercise Science. It also provides science-based sport electives to other students and professionals.

In addition to Dr. James A. Adjei, the Head of Department, Mr. C.K. Yeboah, Dr. Bedu Addo and Mr. Mathew Domfeh, Part-time Swimming Instructors, Mr. Joseph Acquah, Tennis Instructor, Mr. Ibrahim Osmanu Orlando, Men/Women Soccer Instructor, Mr Asare Vandyke, Mr. Jonathan Quartey, Dr. Yaw Bio, Dr. Patricia Brown and Mr. S. Kwasi Acheampong joined the staff as Lecturers.

The Department further inculcates in students the essential capacities for total fitness, leadership and professional growth. Additionally, the Department seeks to use the exercise science platform as a professional tool in promoting fitness for faculty students, athletes and the community at large.

The Department of Sports and Exercise Science represents an amalgamation of scientists from academic disciplines of Anatomy, Physiology, Kinesiology, and Biomechanics.

COURSES OFFERED INCLUDE

Exercise Physiology, Biomechanics of Human Motion, Biomechanics of jumps, Throws and Track, Care and Prevention of Athletic Injuries, Scientific Principles of Sports, Tests and Measurements in Sports, Kinesiology, Energy and Performance, Safety of Facilities and Equipment.

Final year students are required to specialize in one of the following three areas:

- Sports Biomechanics
- Recreation and Sports Administration
- And Physiotherapy.

The Department provides a science-based education in Sports and Exercise Science to other students and professionals.

PROJECTIONS

The Department hopes to increase its intake substantially in the next academic year despite numerous problems it is currently facing. The staff at post and any new employees would be expected to work harder to meet challenges and demands of the Department.

CAREER PROSPECTS

Sports and Exercise Science graduates could be employed in both private and governmental settings as physician assistant consultant, sports management consultant, sports nutritionist, fitness director, biomechanics and as fitness or exercise leader.

STUDENT NUMBERS eight-nine (89)

RESEARCH

- Adjei James A. - Teaching Manual for Kinesiology
- Adjei James A. - Teaching Manual for Exercise Physiology
- Adjei James A. - Teaching Manual for Biomechanics

RESEARCH INTERESTS

- Exercise Prescription for the Aging.
- Injury Rehabilitation Techniques.
- The Impact of Fitness and National Economy.

CONFERENCES

Dr James Adjei attended the following conferences and sports meetings:

- ICHER seminar, Lagos, Nigeria, February 2005.
- The International Council for Health and Physical Education, Recreation, Sports Dance (ICHPER-SD) Africa as lead Paper presenter at University of Ibadan, Oyo State

DEPARTMENT OF SONOGRAPHY

STAFFING

Lecturers:	1
Service lecturers	10
Administrative Assistant	Nil

TEACHING

The Department runs the BSc Sonography programme, started 1 year ago.

ACADEMIC STAFF MEMBER

Rev. Fr. Prof. John Appiah-Poku, the Dean is taking care for the Head. Dr. Augustina Badu-Peprah, of the Department of Radiology is also a care-taker lecturer in the department. Ms. Ann C. Polin is a visiting lecturer in the department. The rest of the courses are handled by lecturers from the Departments of Anatomy, Physiology, Pathology, Microbiology, and Molecular Medicine of the School of Medical Sciences.

KNUST DENTAL SCHOOL

INTRODUCTION

The 4th batch of 16 dental students matriculated in the 2009/10 academic year and have since started the 3-year Human Biology programme with their medical counterparts. The pioneer class of 8 dental students have also begun their clinical training at the Komfo Anokye Teaching Hospital (KATH). Presently, these 1st clinical year dental students are following courses in Medicine and Surgery at the junior clerkship level of the School of Medical Sciences (SMS). In May 2010, the clinical dentistry programme for the 1st cohort of dental students will commence at KATH.

Again, the year in retrospect saw active refurbishment of the clinical space demarcated for the KNUST Dental School at KATH. However, the installation of the 5-dental chairs and 10 phantom heads (manikins) remains outstanding. Barring any unforeseen major obstacle, the earmarked area should be ready for clinical training as envisaged.

LOCATION OF DENTAL SCHOOL

Currently, the administration of the dental school is run from an office within the premises of Department of Community Health, SMS. Financial matters of the school are also dealt with by the Accounts Section of the SMS.

When the clinical space at KATH is complete, there shall be a secretariat for the Dean of the Dental School.

ACADEMIC DEPARTMENTS

Below are the 5 departments of the dental school:

- Adult Oral Health
- Community Dentistry
- Oral & Maxillofacial Sciences
- Child Dental Health & Orthodontics
- Basic & Diagnostic Oral Health Sciences

Heads of department are yet to be selected and confirmed. The position of an Assistant Registrar for the dental school remains vacant.

MEDICAL & DENTAL COUNCIL (MDC) ACCREDITATION VISIT

From August 30 to September 02, 2009, the MDC sent a team to the KNUST dental school to inspect its teaching and learning facilities for accreditation purposes. The draft report received from the Registrar of the MDC, Dr. E. Atikpui, was highly encouraging. Consequently, the KNUST dental school has been recommended for provisional accreditation. However, the team indicated that the road map which they outlined during the debriefing session should be respected and implemented.

RESEARCH/EXTERNAL LINKAGE

Through the initiative of the Provost, Prof. Peter Donkor, the dental school has developed a research linkage with the University of Michigan, Ann Arbor. USA. In March 2010, our Michigan collaborators paid a familiarization visit to the dental school.

Thematic areas that have evolved through this partnership are:

- The use of Atraumatic Restorative Treatment (ART) in selected Ghanaian school children.
- Applied Cariology course – Innovative approach to teaching dental students.

In addition to the above, the academic staff of the dental school has participated in the Open Educational Resources (OER) programme organized by the College of Health Sciences (CoHS) under the auspices of the University of Michigan.

RESEARCH IS ON-GOING IN THE FOLLOWING

- Determining the variables that influence undergraduate programme selection by Senior High Students entering KNUST.
- The specialty preferences of clinical dental students in Ghana. A comparative study between KNUST dental school and the University of Ghana dental School.

PUBLIC EDUCATION

A Graphic newspaper publication on Wednesday, November 04, 09 titled ‘Benefits of regular dental check-up’ was written by Dr. Adu-Ababio.

CONFERENCES ATTENDED

Dr. Francis Adu-Ababio

Attended the 2nd CoHS Annual General Scientific Conference held at the Miklin Hotel, Kumasi from September 10 – 11, 2009 on the theme ‘Lifestyle and Non-Communicable diseases’. Dr. Adu-Ababio chaired one of the sessions.

Participated in a one – day workshop held in Accra for Deans of Medical & Dental schools in Ghana organized by the MDC in October, 2009. The Ag. Dean, Dr. Adu-Ababio made a presentation at this meeting.

Attended the 51st Annual General Scientific Conference of the Ghana Medical Association (GMA) from November 03 – 08, 2009 held in Tamale on the theme ‘Human resource in the 3 Northern regions: Challenges & Solutions.

Attended the 6th Annual General & Scientific Meeting of the Ghana College of Physicians & Surgeons held in Accra from December 09 – 11, 2009 on the theme ‘Poverty & Health’.

STAFF AS EXAMINERS

- Dr. Adu-Ababio was one of the internal examiners of the March and September, 2009 part II membership examinations of the Ghana College of Physicians & Surgeons held in Accra.
- Prof. J.A. Akinwande was the external examiner in Oral & Maxillofacial Surgery at the final BDS part III examination of the University of Ghana Dental School, Accra held in January, 2010.

DONATION

Through Dr. Easmon Otupri (Department of Community Health) a Swedish couple, Drs. Szanto Elod donated assorted dental hand instruments to support students training. A letter of appreciation for this kind gesture has been sent to Dr. Otupri.

VISITS TO DENTAL SCHOOL

Dr. Gillian Hoad-Reddick, a Consultant Prosthodontist formerly of the University of Manchester dental school, U.K. visited the KNUST dental school from January 25 – February 08, 10. Whilst here, she did not only make useful suggestions on the course content of the clinical dentistry programme but also promised to link the school up with major sponsors such as the Colgate group of companies.

On February 04, 10, Dr. Nejay Ananaba, an Americo-Liberian and a Clinical Lecturer from the School of Dentistry, University of Michigan visited the dental school. She was here to learn from dental schools in Ghana and how those experiences could assist her establish the first dental school in Liberia.

CHALLENGES

THE KNUST dental school is the 4th year since its establishment in 2006. Obviously, as a new health training institution, it is bound to face challenges some of which are highlighted below:

- Inherent weak administrative structure following the absence of key appointments such as an Assistant Registrar and Accounting staff.
- Physical non-visibility of the dental school either on the main KNUST campus or at KATH.
- Lack of a separate budgetary allocation.

RECOMMENDATIONS

- A robust administrative set-up to support the Dean in the management of the dental school is paramount. To address this shortcoming, it is recommended that an Assistant Registrar be appointed.
- Provision of vehicle(s) to support outreach programmes and community-based teaching will boost the morale of the trainers and the trainees. Besides, a simple but effective marketing strategy that any new school can provide the general public is to have a school vehicle with its inscription plying the road.
- Furthermore, an official car for the office of the Dean is more likely to make the position a lot more attractive even if the remuneration remains non- competitive.
- The recommendations including the road map outlined in the MDC accreditation report should be implemented.

SCHOOL OF VETERINARY MEDICINE

INTRODUCTION

School of Veterinary Medicine was established at the beginning of 2009/2010 academic year to train highly qualified Veterinary-Surgeons with sufficient clinical and scientific knowledge, and skills needed to respond to animal health and zoonotic challenges of Ghana. The School is being hosted by College of Health Sciences and is offering Doctor of Veterinary Medicine (DVM) Programme.

JUSTIFICATION

Ghana is currently facing a severe shortage of veterinarians needed to adequately monitor, prevent and control animal diseases of public health and economic importance. So severe is the shortage that Government is prompted to re-engage veterinarians who have already retired from active civil service. Most districts have no veterinarians to treat their animals, a situation that threatens the animal industry.

Ghana has historically relied on other nations for the training of her Veterinary-Surgeons through scholarships offered by those nations. Indeed more than ninety percent of all Veterinarians currently practicing in Ghana have been trained either in the Eastern European bloc or in Cuba. Even though this training provides a fundamental base for dealing with the problems of health and zoonoses, it is expensive and lacks exposure to specific animal health and zoonotic problems in Ghana.

DVM PROGRAMME

DVM is a professional degree which will be awarded to students after successfully completing six years of studies. During the first three years of the programme students will concentrate on basic sciences (pre-clinical courses) after which they will progress to the second three years of application of science in the study of clinical Veterinary Medicine.

Besides clinical veterinary medical knowledge and skills, the programme is also designed to give students sufficient knowledge to respond to livestock husbandry and farm management challenges of the time.

Changes in the curriculum will be made periodically through stakeholder recommendations to reflect the dynamic demands of the profession and society locally and abroad.

ENROLMENT

Total of 13 students comprising 3 females and 10 males were enrolled at the beginning of 2009/2010 academic year.

ACADEMIC STAFF

Three (3) Full-Time and four (4) Part-Time lecturers are employed to form the core of the academic staff. Services of Staff from existing Schools and Faculties are offered.

VISITORS

The Minister of Food and Agriculture, Hon. Akwasi Ahoi and the Ghana Veterinary Council visited the School on 27th January 2010 to interact with the staff and students. They were received by the Vice-Chancellor and the Provost of College of Health Sciences.

DONATION

A double cabin Nissan pick-up was donated to the School by the Minister of Food and Agriculture, Hon. Akwasi Ahoi during his visit to the School.

KUMASI CENTRE FOR COLLABORATIVE RESEARCH (KCCR)

INTRODUCTION

Since its establishment over 12 years ago, the Kumasi Centre for Collaborative Research in Tropical Medicine (KCCR) continues as an international platform for collaborative biomedical research. It is a joint venture between the Ministry of Health, the KNUST (SMS) and the Bernhard Nocht Institute for Tropical Medicine, Hamburg, Germany. Over the years, there has been research into tropical diseases such as Malaria, Buruli ulcer, Tuberculosis, Filariasis, Onchocerciasis, HIV/AIDS and recently, Zoonoses in particular coronaviruses among bat population. In the last years, there has been a tremendous drive aimed at improving relations with sister research institutions and to open up a bit more to receive other internal partners from all over the world.

In pursuance of its mandate, KCCR has provided three (3) PhD students who have successfully graduated from the University, two of whom are holding positions in the University. Nine (9) Masters students have also successfully graduated from the University.

CORE STAFF

Mr Thomas van Kampen	Director
Dr. Ellis Owusu-Dabo	Deputy Director
Mr. Andy Mensah-Agboh	Administrator
Ms. Augustina Annan	Deputy Head of Laboratories
Mr. Sebastian Kankam	Accountant
Ms. Henrietta Addai	Senior Administrative Secretary

ON-GOING PROJECTS

Aflatoxin in HIV – This is aimed at assessing the association of aflatoxin biomarker levels with health status and HIV disease any persons living with HIV/AIDS.

Collaborating Partners

Kwame Nkrumah University of Science and Technology (KNUST) – Prof. William Ellis and Prof. Tsiri Agbenyega.

University of Alabama, Birmingham - Dr. Collin Jolly, Dr. E. Yijiang, and Dr. Nelly Yatich. With sponsorship from National Institute for Health, USA.

AWOL – Title: “Anti-symbiotic treatment of Filariasis- Comparison of doxycycline plus rifampicin in their efficacy against Lymphatic Filariasis (LF) and onchocerciasis”. This study aims at refining existing regimes of drugs with known activity against *Wolbachia* (doxycycline, rifampicin) and to provide an optimized treatment regime in the event of the development of resistance or poor responsiveness that can be integrated in the MDA time frames of the existing control programmes for LF.

Collaborating Partners

KNUST – Prof. Ohene Adjei and Dr. Alex Yaw Debrah.

Liverpool School of Tropical Medicine – Prof. Mark Taylor

Department of Microbiology University of Bonn - Prof. Achim Hoerauf. With sponsorship from European Union.

BAT – Virus biology, host ecology and human behaviour as determinants for coronaviral zoonoses”. A pilot study conducted in caves has indicated the presence of corona viruses in bats. Additionally, the presence of Henipavirus has also been demonstrated in the fruit eating bats in an urban setting in Ghana.

Collaborating Partners

KNUST – Prof. Samuel Kingsley Oppong, Prof. Yaw Adu-Sarkodie and Dr. Olivia Agbenyega.
Institute of Virology – Prof. Christian Drosten and Prof. Elizabeth Kalko. With sponsorship from German Research Council, Deutsche Forschungsgemeinschaft (DFG)

Burulico – The purpose of this is to help identify better ways of diagnosing BU and to help improve the treatment of BU by determining the most efficient sample for diagnosing Buruli ulcer and to conduct a clinical trial.

Collaborating Partners

KNUST – Prof. Ohene Adjei, Dr. Phillips and Dr. Sarfo,
Bernhard Nocht Institute for Tropical Medicine (BNITM) – Prof. Bernhard Flescher
Ludwig Maximilians Institute, Munich, University of Munich – Dr. Gizela Bretzel. Funding from European Union.

Child Development Study (CDS) – The main aim is to look into the impact of certain diseases eg: Malaria, worm infestation as measures of child development.

Collaborating Partners

KNUST – Prof. J. Appiah Poku and Dr. Harry Tagbor
BNITM - Dr. Torsten Feldt, Dr. Stephan Ehrhardt. With funding from German Research Council (DFG).

DFG Genetics – Title: ‘ Genetics of Lymphoedema and Hydrocele in Filariasis. The aim of this study was to analyze cytokine, cytokine receptor, VEGF and VEGF receptor single nucleotide polymorphisms in lymphoedema, hydrocele and infected patients without pathology as possible causes of the different disease manifestations in patients with LF.

Collaborating Partners

KNUST – Prof. Ohene Adjei, and Dr. Alex Yaw Debrah.
Department of Microbiology University of Bonn - Prof. Achim Hoerauf and Dr. Kenneth Pfarr.
With sponsorship from European Union.

Malaria Vaccine Trial (MAL 055) – Phase 3 clinical trial of RTS, S malaria vaccine. This is a multi-centre trial involving Ghana, Gabon, Malawi, Kenya, Burkina Faso and Tanzania and Mozambique.

Collaborating Partners

KNUST – Prof. Tsiri Agbenyega and Dr. Daniel Ansong
Glixosmithkline Biologicals - Prof. Thomas Breuer. Funding from GSK.

NTD-VW – Title: “Analysis of genetic polymorphisms of cytokines, vascular endothelial growth factors (VEGFs) and VEGF receptors in disease manifestations in LF. This project aims at analyzing pro- and anti-inflammatory cytokine, VEGF and VEGF receptor polymorphisms as possible causes of the different disease manifestations in patients with LF.

Collaborating Partners

KNUST – Dr. Alex Yaw Debrah
BNITM – Prof Bernhard Fleischer
Department of Microbiology University of Bonn - Prof. Achim Hoerauf. Funding from European Union.

SCOOTT - Sustainable Control of Onchocerciasis Today and Tomorrow – Title: “Doxycycline treatment to eliminate *Onchocerca volvulus* worms that respond poorly to ivermectin”. This study assesses the effect of doxycycline on individual onchocerciasis patients in whom repeated ivermectin treatment has failed to mediate microfilariae clearance.

Collaborating Partners

KNUST – Prof. Ohene Adjei and Dr. Alex Yaw Debrah.

University of Edinburgh – Prof. David Taylor. Funding from European Union.

Tuberculosis (TB 3) – The aim of this study was to identify potential genetic factors that are involved in either protecting individuals from tuberculosis or making them susceptible to the disease. This is an extension of previous study began in 2001 and ended in 2006.

Collaborating Partners

KNUST – Dr. Ellis Owusu-Dabo

Prof. Rolf Horstmann and Prof. C.G. Meyer. Funding from German Ministry of Education and Research

UBS Neglected Diseases – This study investigates neglected diseases in African children eg. Respiratory infections, stool infections and blood infections.

Collaborating Partners

KNUST Prof. Yaw Adu Sakodie

BNITM - Prof. Juergen May, Dr. Nimako Sarpong. Funding from United Bank of Switzerland Foundation.

VW–Filariasis – Title: “*Wolbachia* endobacteria in filarial infections - exploring their usefulness as targets for novel chemotherapies that are anti-filarial, reduce filarial pathology and interrupt transmission”. This study assesses the depletion of *Wolbachia* with doxycycline is essential for an improvement of lymphedema and hydrocele patients.

Collaborating Partners

KNUST – Prof. Ohene Adjei and Dr. Alex Yaw Debrah.

Department of Microbiology University of Bonn - Prof. Achim Hoerauf. Funding from European Union

UP-COMING PROJECTS

Burulivac – The general objective of BuruliVac is to identify and develop novel vaccine candidates suitable for translation into clinical application. Information on disease immunopathology and immunological correlates of a protective capacity will be gained and will help to develop extensively characterized candidates that can be directly used in future phase I clinical trials. The research will lead to new preventive and therapeutic tools that will be of direct benefit for the patients. This will help in the selection of future candidates vaccine for in vivo and in vitro tests.

Collaborating Partners

KNUST – Prof. Ohene Adjei, Dr. Allen Phillips, and Dr. Sarfo,

BNITM – Prof Bernhard Fleischer and Ludwig Maximilians University of Munich – Dr. Gizela Bretzel. Funding from European Union.

Cardio-vascular function in severe malaria (CFSM) – The main aim of this study is to determine the risk factors of abnormal cardiovascular function associated with HIV infection and the effect of Highly Active Anti-Retroviral Therapy (HAART) on those abnormalities.

Collaborating Partners

KNUST/Komfo Anokye Teaching Hospital (KATH) – Dr. Isaac Owusu.

BNITM – Dr. Torsten Feldt. Funding from German Ministry of Education and Research.

Entomology – This study aims at curbing malaria by targeting the larvae, using biological agents.

Collaborating Partners

KNUST– Prof. Samuel Oppong

European Mosquito Control Association – Prof. Norbert Becker and Prof. Dr. Dr. hc Volker Storch (University of Heidelberg). Funding from European Mosquito Control Association

E-PIAF – The aim of this study is to apply bioinformatics and computational models of immunity to the analysis of detailed clinical and biological data from filarial infections to define protective immunity and identify vaccine candidates in an approach known as pathway biology.

Collaborating Partners

KNUST – Prof. Ohene Adjei, and Dr. Alex Yaw Debrah.

University of Edinburgh – Prof. David Taylor.

Department of Microbiology University of Bonn - Prof. Achim Hoerauf. Funding from European Union.

Febrile illnesses in Ashanti Region (FISA) – The aim is to analyze all microbes in blood samples from children and adults admitted to the Agogo Presbyterian Hospital on account of febrile illness.

Collaborating Partners

KNUST - Prof. Yaw Adu Sakodie

BNITM - Prof. Juergen May, Dr. Nimako Sarpong. Funding from International Vaccine Initiative.

Tuberculosis (TB 5) – The aim of this study is to identify potential genetic factors that are involved in either protecting individuals from the disease or making them susceptible to the disease. This is an extension of a previous study began in 2001 and ended in 2006.

Collaborating Partners

KNUST – Dr. Ellis Owusu –Dabo

BNITM - Prof. Rolf Horstmann and Prof. C.G. Meyer. Funding from German Ministry of Education and Research

FUTURE OUT-LOOK

- Further PhD training/Capacity building in core-disciplines to enhance future performance. Three (3) registered PhD and five (5) Masters students are currently pursuing their various programmes and in different disciplines.
- Implement action on evaluation of KCCR's performance over the last 12 years to further strengthen future collaboration.
- Increase the training of MPhils to build critical mass for future expansion.

- In the process of development of a strategic plan to guide future operations and activities of the Centre.

COLLEGE OF SCIENCE

INTRODUCTION

The College of Science is one of the foundation Colleges of KNUST established in December 2004, and a successor to the Faculty of Science originally set up in 1961. It has two Faculties. These are, the Faculty of Physical Sciences, which is made up of the Departments of Computer Science, Physics, Chemistry, Mathematics and Actuarial Science, and the Faculty of Biosciences which comprises the Departments of Biochemistry and Biotechnology, Food Science and Technology, Theoretical and Applied Biology, Environmental Science and Optometry and Visual Sciences. A total of eleven undergraduate programmes and several graduate programmes are currently being run by the College. Also attached to the College are two Research Centres; The Institute of Science and Technology for Africa and the Advance Centre for Mathematical Sciences.

The College has a student population of about 3,650 made up of approximately 3,480 undergraduate students and the remaining postgraduates, pursuing various MSc, MPhil and PhD programmes.

During the year under review the College continued its pursuit of programmes and activities geared towards the realization of its vision of producing high calibre science graduates to support the industrial and socio-economic development of Ghana and Africa.

ADMINISTRATION

The College is headed by a Provost who is assisted by a team of administrators, Deans of Faculty and Heads of Department. The Provost secretariat comprises the following officers:

Prof. Aboagye Menyeh	Provost
Mrs. Margaret Dzisi	Ag. Registrar
Mr. Gabriel Sam Arhinful	Finance Officer
Mrs. Hagar Atta Obeng	Librarian
Mrs. Ida Saeed	Assistant Registrar

ACHIEVEMENTS

The past year witnessed some significant developments in the area of infrastructural development, staff recruitment and development, and research and collaboration with other institutions. Notable amongst them are the following:

Completion of College of Science Building

The College has not relented in its efforts to address the perennial problem of inadequate lecture and office space. With the assistance of the University, and initial funding from GETFund, the College of Science Building Complex, which was started in 2003 has finally been completed. The Complex is expected to accommodate all the Departments currently without permanent accommodation. This includes the Departments of Computer Science, Mathematics, Biochemistry and Biotechnology, and Optometry and Visual Science. The new building will also provide lecture theatres and classrooms, staff offices, a conference hall, a very spacious College Library, and cater for the physically challenged. Plans are underway for the College to move into the building by the beginning of the 2010/2011 academic year.

Refurbishment of Laboratories

Teaching and learning, and research received a major boost with the refurbishment of twenty-two laboratories in the Departments of Physics, Biology, Chemistry and Optometry and Visual Sciences. Under the project dubbed '*Turnkey Project*', significant rehabilitation work involving the

installation of state-of-the-art laboratory equipment, 132 modern computers, audio-visual equipment and split-air conditioners, among others, was carried out.. The refurbished laboratories were commissioned by the Vice-Chancellor, assisted by the Provost, on 17th November 2009.

Staff Recruitment and Development

The College continued its drive to recruit high calibre staff to beef up existing Faculty and improve upon the student/staff ratio. During the period under review, eight additional teaching staff were appointed into various Departments of the College. The College also benefited from the service of three visiting professors in the Departments of Computer Science, Theoretical and Applied Biology, and Mathematics.

Staff development also received considerable attention. In all, nine senior academic members secured scholarships for PhD studies.

COLLABORATIONS

A Memorandum of Understanding was signed between the College of Science and the Plant Sciences Group of Wageningen University and Research Centre in the Netherlands in September 2009, to establish a working relationship in the areas of laboratory and equipment transfer, joint research and publication, joint traineeship for postgraduate and bachelor project students, and exchange programmes for students, technical staff and faculty, among others.

Under the agreement the Departments of Biochemistry and Biotechnology and Food Science and Technology have benefited from a donation of assorted laboratory and office equipment from the Plant Sciences Group of Wageningen University and Research Centre estimated at the value of Four Hundred Thousand US Dollars (\$ 400,000).

The co-operation between the French Embassy and the College is on-going, with the offer of split-cost scholarships for postgraduate studies and staff exchange programmes.

NEW ACADEMIC PROGRAMMES

In response to societal needs and the growing demands for access to higher education, the College of Science has developed a number of new academic programmes which will soon be introduced by distance learning. An undergraduate programme in Environmental Science by distance learning was introduced during the period under review. Others expected by the beginning of the 2010/2011 academic year include MPhil programmes in Computer Science and Information Technology, and MPhil in Polymer Science and Technology in the Department of Chemistry.

PROVOST'S PARTICIPATION IN THE 10TH ANNIVERSARY OF THE NATIONAL CONVENTION OF THE KNUST ALUMNI ASSOCIATION OF NORTH AMERICA

The Provost was invited by the President of the KNUST Alumni Association of North America to participate in the KNUST Alumni Congress which was held in Chicago, Illinois, USA from 1st to 10th July, 2009. The participation provided opportunity to the Provost to update the Association on the status of the college as well as bringing to the fore, the challenges it faces. The convention also enabled the Provosts to meet with alumni of their respective colleges and to develop vital strategies by which the alumni could assist the various colleges with their technological resources and academic needs as well as visiting some selected universities in the USA to seek collaboration.

The key strategies arrived at the congress were as follows:

- Departments which urgently require the services of visiting Professors should make their request through the Provost to the IPO which will be channelled to the Alumni Office.
- Visiting Professors may not necessarily be alumni of KNUST. The Alumni will assist to identify such professors who will be willing to come to Ghana for a brief period.
- On the other hand the initiative can also be made by individual professors in the USA, i.e., contacting the Departments concerned.
- Alumni, from time to time will inform the colleges about opportunities for possible collaboration with US institutions.
- University of Pennsylvania (UPENN) to assist KNUST with the training of a number of first class Computer Science graduates at the Masters level who will return to KNUST. UPENN will waive tuition but KNUST to look for maintenance allowance for the students.

DONATIONS

Under a Memorandum of Understanding between the College and Ramapo College in New Jersey, USA, the College received a donation of books from Ramapo College in October 2009. Beneficiary Departments were Physics Chemistry, Mathematics and Theoretical and Applied Biology.

Through the instrumentality of Dr. Peter Twumasi, a lecturer in the Department of Biochemistry and Biotechnology, laboratory and office equipment was donated to the Biochemistry and Biotechnology Department of the College by the Wageningen University and Research Centre in the Netherlands on 6th May 2010.

VISITORS TO THE COLLEGE

The Chancellor of the University, Otumfuo Osei Tutu II paid a brief visit to the new College of Science Complex in March this year. The visit was part of an inspection tour of all on-going projects on campus.

Prof. Shalom Govewitz of Ramapo College, New Jersey, accompanied by a Lecturer and students of the College, visited the College of Science on 12th October 2009.

The French Ambassador Mr. Francis Hurtut paid a courtesy call on the Provost on 21st January 2010. He was accompanied by the Director of Alliance Francais, Kumasi.

In furtherance of the existing co-operation between the College and the French government, the Head of Co-operation and Cultural Affairs, Mr. Arnaud Dornon and Mme Valerie Lesbros called on the Provost and the Management Team of the College, earlier in the year.

FACULTY OF BIOSCIENCES

ADMINISTRATION

Dean	Prof. K. Obiri- Danso
Administrative Assistant	Mrs. Faustina Amoani

INTRODUCTION

To achieve excellence in its core business of teaching, research and service, the Faculty of Biosciences continues to explore creative and innovative ways since its inception. The 2009/2010 academic year has witnessed some significant landmarks outlined in this report.

ACADEMIC PROGRAMMES

Currently, the Faculty organizes five undergraduate programmes under five Departments, namely:

- Department of Biochemistry and Biotechnology
- Department of Theoretical and Applied Biology
- Department of Optometry and Visual Science
- Department of Environmental Science
- Department of Food Science and Technology

The Departments of Food Science and Technology and Environmental Science are currently being nurtured by the Department of Biochemistry, and Theoretical and Applied Biology respectively.

STUDENT POPULATION

The total undergraduate student population in the Faculty is currently 1,143 with approximately 40% being females.

The breakdown shows:

- | | |
|-----------------------------------|-----|
| • Food Science and Technology | 96 |
| • Optometry and Visual Science | 199 |
| • Environment Science | 171 |
| • Theoretical and Applied Biology | 400 |
| • Biochemistry and Biotechnology | 277 |

The Postgraduate population is currently 99, made up of 13 PhD, 7 M.Phil and 79 MSc Candidates. The Department of Theoretical and Applied Biology also runs a MSc in Environmental Science by Distance Learning with student enrolment of 109.

In order to enhance performance of our postgraduate students, regular Faculty Graduate Seminars has been instituted. A forum in which all graduate students; brought together under one umbrella participate in seminar presentation to their peers and lecturers at least twice in a semester. This has motivated the graduate students to become more serious with their work.

LINKAGES

The Faculty has developed linkages with some Organization within the country to advance student training as outlined below:

- Cocoa Research Institute of Ghana (CRIG) Tafo, through collaboration with the Faculty continues to host the Kirk House Trust Mobile Molecular Biology laboratory. The laboratory was made available to the Faculty in the first and second semester of the year offering hands- on practical training to undergraduate students in the Faculty in molecular biology techniques. The arrangement has become a permanent feature between the Faculty and CRIG until the Departments are able to equip their molecular biology labs with the essential equipments and reagents. The collaboration has also enabled CRIG to send two of their staff to be trained as PhD in Food Science & Technology and MPhil in Biochemistry.
- Environmental Protection Agency now offers regular vacation attachments to Environment Science students in the third year of their studies.
- The Memorandum of Understanding (MOU) between Food Research Institute and the Department of Biochemistry and Biotechnology/Food Science and Technology for regular students is now operational.
- Food and Drugs Board also makes their facilities available for student training through vacation attachments.

COLLABORATIONS

In order to broaden her scope and enhance the quality of training given to our students, the University signed a Memorandum of Understanding (MOU) with the Food Research Institute (CRIR), Accra. The focus of the MOU is to provide third year students the opportunity to spend six weeks of the second semester at Food Research Institute before embarking on an industrial attachment to any Food and Beverages industry. The attachment is to expose the students to several analytical methodologies and equipment in Food Science and Technology.

The Department of Theoretical and Applied Biology is in collaboration with several organizations and these collaborations have enhanced the research output of staff in the Department leading to several publications in peer- reviewed journals.

COMMUNITY SERVICE AND CONTRIBUTION TO SOCIETY

The Faculty prides itself as one of the leading service providers in the community. Members of staff and students continue to contribute their quota to the development of the society and Ghana at large through the scholarly and non scholarly roles they play on various boards, committees and consultancies namely:

- Most staff members of the Faculty continue to serve as External Examiners to other Universities and Polytechnics and as assessors to various National Institutions. They also serve on various National and International Committees.
- The Department of Optometry and Visual Science in partnership with the International Centre for Eyecare Education (ICEE) and the Ghana Health Service (GHS) is embarking on a project in the Ayeduse community called the Ashanti Vision Centre Project. As part of this collaboration, equipment and resource worth over 150,000 dollars has been received to establish a Community Eye Clinic for teaching and training of our Optometry students.
- The Department of Biochemistry also provides consultancy services to small and medium scale food processing and water industries in Kumasi and its environs. In addition to this, the Department has a Clinical Analysis Laboratory which offers clinical services to the university and adjoining communities.
- The student association of the Department of Food Science and Technology promote and participate in several community-based programmes for food vendors and consumers, both on and out of campus. Some of these programs include Food Audits and Food Safety Education.
- The Trade and Investment Program for a competitive Export Economy (TIPCEE) project of the United States Agency for International Development (USAID) in Ghana donated a High Performance Liquid Chromatograph (HPLC) to the Department of Biochemistry and Biotechnology and Food Science Technology. The set up is for the analysis of mycotoxins in cereal grains and legumes. This is to enhance the analysis of raw materials and finished goods within the agro processing hub in the central and northern parts of the country to ensure quality of the products. The set up is to provide expert services for the agro processing industries including poultry farmers, cereal and legume farmers and distributors and regulatory agencies.
- Students of the Department of Theoretical and Applied Biology have been involved in Health Education campaigns in various communities in many districts in the Ashanti region. Such campaigns have touched on HIV/AIDS, Water-Borne Diseases, Buruli Ulcer, Malaria etc. The students have stressed on how to avoid/ prevent contracting these diseases.

RESEARCH

The staff of the various Departments in the Faculty continues to do active research in various areas of endeavors. This has resulted in a number of publications in both National and International Journals.

- The research activities of the Department of Biochemistry and Biotechnology have centered on Medical and Molecular Biochemistry (Omega-3 supplements, malaria parasite-Epstein Barr Virus interactions in the development of Burkitt's Lymphoma).
- The Department of Optometry and Visual Science has concluded the field work of the World Council of Optometry sponsored project - Refractive Error Studies in Children (RESC). The data analysis for paper publication is ongoing. The project is worth US\$54,000.
- Research activities in Biological Sciences include the following: Fermentation Studies, Nitrogen Fixation, Fungal infection of Crop Plants, Aquatic and Ecotoxicology.

BENEFACTORS

- Within the year under review, the Faculty received on behalf of the Departments, several textbooks worth over \$1,000.00 (On thousand USD) from philanthropists, Mr. Raphael Yankey in the USA and Prof. Susan Braunhut of Massachusetts University.
- Dr. Victor Berko-Baoteng from the Genesee Valley Global Partnership(GVGP) Livingston Country USA donated some glassware to the Faculty based on the needs of the Department of Biochemistry & Biotechnology , Chemistry and theoretical and Applied Biology. The glassware has since been shared amongst these Departments.
- The Plant Sciences Group (PSG) of Wageningen University and Research Centre in The Netherlands under an MOU donated assorted fairly used laboratory and office equipment worth 600,000 Ghana cedis to the Department of Biochemistry and Biotechnology and Food Science and Technology. The project was initiated by Dr. Peter Twumasi, a former MSc/PhD Student and Assistant Researcher in the Wageningen University.

CONCLUSION

It is expected that the number of staff would increase as new courses are introduced and new programmes developed at the graduate level. Further international Collaborative links are being sought both at National and International level to enhance research and research-training programmes in the Faculty.

THE DEPARTMENT OF BIOCHEMISTRY AND BIOTECHNOLOGY INTRODUCTION

The core values of the Department are integrity, discipline, excellence, team work and dedication to work. The Department has pursued its teaching and research agenda in recognition of the role of biochemistry in contributing to both basic and applied research in industry, medicine, agriculture, pharmacy, food technology and biotechnology. The programmes have also been structured to provide the students with the scientific and technological know how to meet the appropriate challenges in society and therefore play their individual roles in the achievement of the country's developmental goals.

The objective of the course has therefore been to consolidate students' training in biochemistry and other disciplines and encourage them to develop intellectual independence, critical thinking skills and versatility for problem solving in biochemistry & biotechnology and other related courses. This and the core values, have been the guiding principle of the research programmes.

The Department also runs MPhil programmes in Biochemistry, Biotechnology, and PhD programme in Biochemistry which are meant to promote basic research in biotechnology, medical and other relevant areas.

STUDENTS POPULATION

The student population of the Department stands at 304. The breakdown is as follows:

BSc Biochemistry and Biotechnology	-	274
MSc Biotechnology	-	21
MPhil Biochemistry	-	7
PhD Biochemistry	-	2

REVIEW OF SYLLABUS

The Department has set a committee to review the current undergraduate syllabus. The decision is in line with the University's recommendations that a review of syllabus be conducted every four years to ensure that programmes are designed to address the changing needs of the country. The Department is also in the process of designing syllabi for taught courses for the MPhil and PhD programmes, which will provide theoretical update in modern trends in Biochemistry.

STAFFING

The Department has fourteen academic staff, which is made up of one Full Professor, one Associate Professor, five Senior Lecturers, five Lecturers and two Part-time Lecturers. The academic staff is supported by eight technical and six administrative staff.

APPOINTMENT

Dr Stephen N. Gyamfi, an alumnus of the Department was recently appointed as a lecturer in the Department in February, 2010.

MAJOR RESEARCH BY STAFF

The research activities of the Department are centred on Medical and Molecular Biochemistry, Plant Biochemistry, Biotechnology, Food and Nutrition. Currently, the specific research areas are:

Biotechnology

- Uses of agricultural waste as substrates for mushroom cultivation.
- Application of pectic enzymes from yeasts to improve extraction of fruit juices.
- Biofuels.
- Phytoremediation- Selenium and Arsenic
- Tissue culture of underutilized crops.
- Production of Pectin enzymes by solid state fermentation

Clinical/Medical Biochemistry

- Incidence of breast cancer among adult females in some parts of Ghana.
- Identification of antigenic targets of immunity to *Plasmodium falciparum*.
- Study and characterization of breast and prostate tumors.
- Study into malaria parasite-Epstein Barr virus interactions in the development of Burkitt's Lymphoma.
- Effects of hepatocellular cancer and Hepatitis B virus infection on liver function.
- Prevalence of Pica practices among pregnant women in Ghana.

- Public Health Policy in the treatment of uncomplicated Malaria.
- Studies into Omega-3 supplements.
- Natural Products in treating sickle cell disorders.
- Studies on Sickle Cell, Metabolic Syndrome, Stroke and Diabetes.
- Maternal Health.

Molecular Biology

- Use of polymerase chain reaction (PCR) for the differentiation of malaria-causing *Plasmodium* species.
- Use of PCR to detect tuberculosis-causing bacterium in meat.
- Development of meristem culture and molecular studies using SSR to characterize cassava cultivars.
- Establishment and standardization of embryonic cultures produced from various explants in four varieties of cassava commonly grown in Ghana.
- Use of SSR in phylogenetic characterization of varieties of groundnuts cultivated in Ghana.
- Screening of human population in Kumasi for Hepatitis B virus using antibody antigen techniques as well as PCR.
- Genetic diversity and genetic improvement of crops.

Plant Biochemistry

- Studies on the antioxidant properties of *Anona miricata* seeds and leaves, and their formulation into nutritional supplements.
- Hepatoprotective studies on *Annona muricata* Linn. leaf extracts.
- Biochemical studies on Moringa.

LABORATORIES

The Department has three laboratories. They are:

- Main Laboratory
- Biotechnology Laboratory with Cold Room
- Clinical Analysis Laboratory

DONATIONS

- Professor S.E. Adunyah who is an alumnus of the Department at the Meharry College in the USA donated two Laptops to the Department to enhance teaching and learning.
- The Department intends to run a new programme in Human Nutrition and Dietetics. In support of this, Professor and Mrs. Y. Debrah currently residing in the UK have donated journals, books and Video cassettes in the area to the Department. Mrs. D. Debrah is a dietician and is ready to support the faculty when the programme takes off.
- During the period under consideration, the Department received laboratory and office equipment estimated to be five hundred and ninety three thousand, five hundred forty-four Ghana cedis (GH¢593,544) as donation from Wageningen University and Research Centre in The Netherlands Under the Laboratory and Office Equipment Transfer Initiative (LOETI) programme.

CONFERENCE PRESENTATIONS

Some members of staff attended and presented papers at the following Conferences, Workshops, and/or Seminars.

F. O. Mensah, A. A. Amuah, K. Nsiah, C. Larbie, N. A. Akomea. Allergic skin conditions – A study of reported cases at the Tafo Government Hospital, Kumasi. 26th Biennial Conference of the Ghana Science Association, University of Cape Coast, Ghana. 4-9 August, 2009.

F. O. Mensah, N. A. Akuffo, K. Nsiah, C. Larbie, B. A. Eghan. Complications associated with Diabetes Mellitus: A study of reported cases at the Diabetic Clinic, Komfo Anokye Teaching Hospital, Kumasi. 26th Biennial Conference of the Ghana Science Association, University of Cape Coast, Ghana. 4-9 August, 2009.

Abban, A.E., Abdulrahman, A.R., Apikenu, A., Badohu, S.J., Bundrant, N.T., Darkoh, S., and Duca, K.A. (2009) Treating our kids for uncomplicated malaria: are we getting it right? Ghana Biomedical Convention Second Annual Meeting, NMIMR, August 12-14, Accra.

Amoako, M.O. and Duca, K.A. (2009) Introducing “US-style” teaching methods in Ghana: the role and perspective of the Teaching Assistant. Ghana Biomedical Convention Second Annual Meeting, NMIMR, August 12-14, Accra.

Ayivor-Djanie, R., Torgbor, C., and Thorley-Lawson, D.A., and Duca, K.A. (2009) Plasmodium falciparum in the Pathogenesis of Burkitt’s Lymphoma (eBL): Parasite – B-cell Interactions. Ghana Biomedical Convention Second Annual Meeting, NMIMR, August 12-14, Accra.

Defor, A.S., Afful, D., and Duca, K.A. (2009) Protecting Scientific Innovation: An IP Policy for KNUST. Ghana Biomedical Convention Second Annual Meeting, NMIMR, August 12-14, Accra.

Lam, V., Badohu, S.J., Blumer, A., Lokuta, M., Fleming, J., Yin, J., and Duca, K.A. (2009) Towards a Method for Characterization of Complex Phenotypes: Quantitative Imaging of Viral Spread, Initial Immune Responses, and Viral Competition in Vitro. Ghana Biomedical Convention Second Annual Meeting, NMIMR, August 12-14, Accra.

Lam, V., Gualano, R., Jones, J., Hansen, M., Anderson, G., Kerr, R., Gogal Jr., R.M.1 and **Duca, K.A.** (2009) Immune cell infiltration, gene and protein expression profiles exhibit multiple temporal patterns in the influenza-Infected mouse lung. Ghana Biomedical Convention Second Annual Meeting, NMIMR, August 12-14, Accra.

Torgbor, C., Ayivor-Djanie, R., **Duca, K.A.**, and Thorley-Lawson, D.A. (2009) Burkitt’s Lymphoma Pathogenesis: Do Two Microbes Cooperate? Ghana Biomedical Convention Second Annual Meeting, NMIMR, August 12-14, Accra.

K. Nsiah, V.P. Dzogbefia, D. Ansong, H. Boateng, A. Osei Akoto, D. Ocloo Using γ -Glutamyl transferase as a marker of oxidant stress, and lactate dehydrogenase as a haemolytic marker: what are the patterns in two sub-phenotypes of sickle cell disease? 26th Biennial Conference of the Ghana Science Association, University of Cape Coast, Ghana. 4-9 August, 2009.

K. Nsiah, V.P. Dzogbefia, D. Ansong, H. Boateng, A. Osei Akoto, D. Ocloo Pattern of serum γ -Glutamyltransferase (GGT) activities in relation to Aminotransferases in sickle cell disease (SCD) subjects. Third Scientific Conference of College of Health Sciences, Legon-September 23-25, 2009 at the Ghana College of Physicians and Surgeons, Accra.

K. Nsiah, V.P. Dzogbefia, D. Ansong, H. Boateng, A. Osei Akoto, D. Ocloo How does the different anaemic states of sickle cell disease persons affect the estimated glomerular filtration rates? Third Scientific Conference of College of Health Sciences, Legon-September 23-25, 2009 at the Ghana College of Physicians and Surgeons, Accra.

K. Nsiah, V.P. Dzogbefia, D. Ansong, H. Boateng, A. Osei Akoto, D. Ocloo The common and contrasting biochemical and haematological and anthropometric features of severely and non-anaemic SCD patients : A report from the Sickle Cell Clinic, Kumasi. Second Conference of College of Health Sciences, KNUST-September 10-11, 2009 at Miklin Hotel, Kumasi.

Twumasi, P. (2009). Sourcing for funding for Postgraduate Research in Ghana beyond. GRASAG Research Conference in Ghana. March, 2009.

Twumasi, P., and Amankwaa, E. (2009). Workshop on Examination/Registration Software and Online Systems by ICT-KNUST Centre. KNUST, Kumasi. March 18-20.

Twumasi, P., Dzandu C. K., Amoako, T.N.E. (2009). Evaluation of the seroprevalence of Hepatitis B virus in two communities in Kumasi. *Abstract*: EMBO Conference proceedings, 29 August – 1 September 2009. Amsterdam, The Netherlands.

Twumasi, P., Ohene-Nyako, M. and Amoako, T.N.E. (2009). Detection of waterborne pathogens using polymerase chain reaction and culture analysis. *Abstract*: 26th Biennial Conference of the Ghana Science Association. 4 – 9 August 2009. Cape Coast, Ghana.

Twumasi, P., Xenyo, A.A. and Amoako, T.N.E. (2009). Detection of hepatitis B virus in human serum using immunoassay and PCR. *Abstract*: 26th Biennial Conference of the Ghana Science Association. 4 – 9 August 2009. Cape Coast, Ghana.

Alemawor, F., Dzogbefia, V.P., Oddoye, E.O.K., and Oldham, J.H. (2009). Broiler Response to *Pleurotus ostreatus*-fermented Cocoa Pod Husk in Finisher Diet , 2nd African Conference on Edible and Medicinal Mushrooms, Accra, 24th -28th March.

Alemawor, F., Dzogbefia, V.P., Oldham, J.H and Oddoye, E.O.K., (2009). Effect of *Pleurotus ostreatus* Fermentation on the Composition of Cocoa Pod Husk: Influence of Time and Mn-ion Supplementation. 2nd African Conference on Edible and Medicinal Mushrooms, Accra, 24th -28th March.

Adu, D., and Dzogbefia, V.P., (2009). Enrichment of cassava peels through *Pleurotus ostreatus* fermentation for use as animal feed. 2nd African Conference on Edible and Medicinal Mushrooms, Accra, 24th -28th March.

Arthur, F. K. N, Owusu, L, Yeboah, F. A, Osei-Akoto, A, Rettig, T. Prognosis of Burkitt's lymphoma: A predictive model on Ghanaian children. The 26th Biennial Conference, Ghana Science Association, University of Cape Coast, Cape Coast, Ghana, August 12th -14th, 2009.

Owusu, L., Arthur, F. K. N., Rettig, T., Osei-Akoto, A., Yeboah, F. A. (2010). Effect of cyclophosphamide-based therapy on some biochemical indices during Burkitt's lymphoma treatment: the prognostic significance. The 9th Continental meeting of International Society of Paediatric Oncology (SIOP) Africa. La Palm Royal Beach Hotel, Accra, Ghana, 10-12 March.

Zakpaa, H. D., Avio, O. A. and Owusu, R. M. (2009). Process characteristics and shelf life study of locally distilled liquor (akpeteshie). 26th Biennial Conference of Ghana Science Association. 4-9 August, 2009. University of Cape Coast, Cape-Coast, Ghana.

Brown, P., Akwasi Frimpong, Abigail Mensah and Dorothy A. Mensah. Development of a food complementary to breast milk. 26th Biennial Conference, Ghana Science Association, University of Cape Coast, Ghana 4th-9th August 2009.

Adu F., Brown, P., Gbedemah, S.Y, Annan K, Abu, Arhin-Sam V.E Antimicrobial activity and phytochemical screening of the leaves of *Duranta plumier* 2nd Annual Scientific Conference, 10th-11th September 2009, College of Health Sciences, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

PROFESSORIAL INAUGURAL LECTURE

Following Professor (Mrs.) Victoria Pearl Dzogbefia's promotion to the status of Full Professor, she gave a Professorial Inaugural Lecture on 30th October 2009. Professor (Mrs.) Victoria Pearl Dzogbefia is the first female Professor, in the history of the University, to have delivered a Professorial Inaugural Lecture. The lecture was on the theme 'The Silent and Invisible Factory Workers: Creators of Wealth for 'Smart' Nations'.

COMMUNITY SERVICE/CONTRIBUTION TO SOCIETY

Members of staff continue to contribute their quota to the development of the society and Ghana at large through the scholarly and non scholarly roles they play on various boards, committees, consultancies, etc.

Within the University, some members serve as Academic Tutors and members of some University Committees and Boards. Some members of staff also serve as external examiners for other sister universities and polytechnics; and also as external assessors of research papers for promotions. Others serve as external examiners for postgraduate students and reviewers of scientific papers for publication. Members also serve on editorial boards of reputable journals and as resource persons at conferences and workshops. The Department embarks on consultancy services to small and medium scale food processing and water industries in Kumasi and its environs. Services are also rendered to traditional medical practitioners to assist them to improve upon the quality of their herbal preparations.

In addition to these, the Department has a Clinical Analysis Laboratory which offers clinical services to the University and adjoining communities. A number of staff members in the Department are involved in the activities of Academic Associations and Professional Bodies. Most of them are members of the Ghana Science Association (KNUST Branch) where some are still holding executive positions in this association.

INCOME GENERATION

The Department undertakes an income generating project in the Clinical Analysis Laboratory (CAN Lab). This Laboratory continues to receive wide patronage from the University community and beyond and its income level has increased significantly.

COLLABORATION

The Department has collaboration with the following institutions:

- Plant Sciences Group of Wageningen University and Research Centre in The Netherlands. Under the Laboratory and Office Equipment Transfer Initiative (LOETI) programme, the

Wageningen University has donated assorted office and laboratory equipment estimated to be five hundred and ninety three thousand, five hundred forty-four Ghana cedis (GH¢593,544) to the Department.

INSTITUTION OF AWARD

Professor (Mrs.) V.P. Dzogbefia in recognition of the impact made on her life by the Department as a student and a Faculty member, has instituted an Award for the best final year student in **ENZYMOLGY** in the Department of Biochemistry and Biotechnology at the end of the second semester.

THE DEPARTMENT OF FOOD SCIENCE AND TECHNOLOGY

INTRODUCTION

The Department was established in 2004 following approval by the Academic Board. It is currently being nurtured by the Department of Biochemistry and Biotechnology. The first batch of students from this Department graduated in June 2008 with a very good overall academic performance. Graduates of this programme are trained to acquire skills and knowledge in food processing, food preservation and the general properties of food materials, and so be equipped for a wide range of technical positions within the food industry. Graduates are also trained to identify potential hazards in the processing of food and be able to apply the knowledge acquired to reduce or eliminate them, and so ensure the safety of the community's food supply. The programme also seeks to equip graduates with the necessary knowledge and skills required to operate effectively in the food industry at various management levels.

VISION

To produce high calibre Food Science and Technology graduates who will be well equipped through the training they receive, to support the rapid changes in food industries and sustain the industrial and economic development of Ghana and Africa. This vision is pursued in par with core values of the University which are integrity, excellence, teamwork, discipline and dedication to work.

The Department has pursued its teaching and research programmes in recognition of the fact that the food industry in Ghana is still in its fledging state. Hence it is important that this programme is offered to train the needed manpower and expertise that will help the industry to keep pace with the accelerated economic development that will usher the country into middle-income status.

The Department selects courses that are aimed at offering the students a good understanding of the basic principles of Food Science and Technology and applying to the growing and dynamic needs of the society with respect to food preservation, processing and safety. According to the Education Standard for Degrees in Food Science of the Institute of Food Technologists, USA, the course content of any undergraduate food science syllabus should cover the following five categories: Food Chemistry and Analysis, Food Safety and Microbiology, Food Processing and Engineering, Applied Food Science, and Success Skills. The Food Science and Technology program in KNUST does not fall short of this standard.

TEACHING

There are many qualities that characterize a food science education in KNUST and make it exceptional. Among these include the opportunity given the students in the third year to undertake a 14-week field attachment to the Food Research Institute, Ghana, as well as to a food establishment in order to be exposed and offered practical experience in modern trends in processing, production

and other related areas. In addition, all undergraduates in the Department take a semester course in Entrepreneurship Development to equip them with requisite knowledge and background to enable them to set up businesses on their own.

The Food Science and Technology programme turned out the second group of graduates last year (2009); it is envisaged that graduates in that discipline will be employed in the food and allied industries, and food research establishments to fill positions that demand greater specialty.

ENROLMENT AND GRADUATION

The Department continues to offer quality teaching and research at the Bachelor's, Master's and Doctoral levels. The student population is as follows:

BSc Food Science and Technology	-	96
MSc Food Science and Technology	-	23
PhD (Food Science and Technology)	-	3

SYLLABUS REVIEW

Owing to University's recommendations that a review of syllabus should be carried out every four years, the Department has set up a committee to review the current syllabi. This is to ensure that programmes are designed to address the changing needs of the country.

RESEARCH ACTIVITIES IN THE DEPARTMENT

The staff in the Department continue to undertake active research in various areas of endeavours. This has resulted in a number of publications in both national and international journals. The major research areas are in Food Science and Technology and Food Biotechnology.

The current specific research areas are:

- Design and fabrication of solar driers, gas driers and fuel driers.
- Studies into the effect of processing on tomato products.
- Biochemical studies on post-harvest food losses and the development of improved processing and preservation technologies to reduce post-harvest food losses.
- Characterization of some local roots or stem tubers as sources of food.
- Studies into utilization of bread fruit and oil from *Treculia africana*.
- Utilization of oligosaccharides from bambara groundnut as prebiotics in yoghurt production.
- Bixinoids and anthocyanins as pigment enhancers in egg chocolate pebbles production.
- Processing and preservation of fruits, vegetables and cereals.
- Characterization and modification of starches.
- Limited proteolysis of Bambara groundnut protein isolates, structure and functional properties.
- Pasting characteristics of protein-starch co-gels and surface functional properties of γ -irradiated Bambara groundnut.
- Development of on-field test-kits for quality palms oil determination using chromatographic, free fatty acid and peroxide tests.
- Formulation of weaning food using composite maize, groundnuts, and soybean flours and assessment of its nutritional effect using animal models.
- Drying characteristics and functional properties of some varieties of plantains in Ghana.
- Nutritional composition and functional composition of some rice cultivars in Ghana.
- Different drying methods and their effect on nutritional value and functional properties of Tiger-nut flour.
- Minimal processing of Fruits and Vegetables.

- Modelling the thermodynamic stability of glycoprotein synthesis from biomolecules from orphan legumes.
- Development of fertilizer protocols for optimum starch yield and quality in cassava.

LABORATORY

The Department shares laboratories with the Department of Biochemistry and Biotechnology. The Department is at present developing a Sensory Laboratory to augment research activities. It is worth noting that the idea of building a sensory laboratory was conceived by the first batch of graduates (in 2008). In addition to this, they contributed some money towards the commencement of the project. Other partners in the funding of this project are the Association of Food Science and Technology Students and the Department. The Department needs its own food laboratories and workshops.

STAFFING

The biggest challenge facing the Department now is the low staffing level. Most of the teaching staff also serves as lecturers for other Faculties and Departments such as the Faculties of Agriculture and Natural Resource Management, and the Department of Biochemistry and Biotechnology. Notwithstanding this, the Department has a good lecturer to student ratio due to the low number of enrolment that has been recorded in the past two years. The Department shares the same non-teaching staff with the Department of Biochemistry and Biotechnology.

Presently, the Department has the following categories of teaching staff:

Full Professor	-	1
Associate Professors	-	2
Lecturers	-	6

APPOINTMENT

Dr. (Mrs.) Faustina Dufie Wireko-Manu was appointed a lecturer in the Department of Food Science and Technology in December 2009 after her graduation. She completed her PhD programme in the Department.

Mr. William Ofori Appaw also joined the Department as a Senior Technician in February 2010. He is among the first batch of students who graduated in June 2008.

PRESENTATIONS AT CONFERENCES, WORKSHOPS AND SEMINARS

Though the Department is young, its members of staff actively participate in professional conferences, seminars, and workshops. Participation in these activities broadens outlook of the programme and enhances staff performance in teaching and research. Some members of staff attended and presented papers at the following conferences, workshops and seminars.

International

Adubofuor, J. (2009). Quality Dynamics of Fruit and Vegetables in the Post-harvest Phase. The first conference organized for Germans Alumni, March 9-21, 2009.

Adubofuor, J (2009). International Conference on Education for Sustainable Development in Germany, March 27-29, 2009.

Nnaji C.O, Agyei D., Appaw W.O., Ellis W.O and **Oduro I.** (2009). Inhibition of enzymatic Browning in *Dioscorea alata* chips using natural anti-browning agents. In proceeding of the

15th Triennial Symposium of the International Society for Tropical Root Crops. “Tropical roots and tubers in a changing climate: A critical opportunity for the world” Peru, 2-6 November. pp 75-80

Opata D.D., Asiedu-Larbi J., W.O Ellis and **Odure I.** (2009). Suitability of water yam (*Dioscorea alata*) in the production of couscous. In proceeding of the 15th Triennial Symposium of the International Society for Tropical Root Crops. “Tropical roots and tubers in a changing climate: A critical opportunity for the world” Peru, 2-6 November. pp 81-88

Gibbah, G. R., Ellis, W. O. and **Odure, I.** (2009). Glucose syrup from yam starch using rice malt as the source of enzymes. In proceeding of the 15th Triennial Symposium of the International Society for Tropical Root Crops. “Tropical roots and tubers in a changing climate: A critical opportunity for the world”. Peru, 2-6 November. pp 89-91

Odure I., Ellis W.O and Appiah F. (2009). Breadfruits in Ghana: Distribution, Physicochemical properties and potential uses. Paper presented at the African Forest Research Network, 15th -16th February 2010, Hilton Hotel, Nairobi, Kenya

Opata D.D., Asiedu Larbi J, Ellis W.O. and **Odure I** (2009). Production of Couscous and French Fries from *Dioscorea Alata* (Water Yam) Securing livelihood through Yams. Proceeding of a Technical Workshop on Progress in Yam Research for Development in West and Central Africa held in Accra, Ghana, 11 – 13 September 2007, edited by B. Nkamleu, D. Annang, and N.M. Bacco. IFAD TAG 704, IITA Nigeria, page 165.

Jolly, P. E., Yang, Y., Preko, P., Wang, J-S., Ellis, W. O., Phillips, T. D., Williams, J. H., Bessler, P., Baidoo, J. And Stiles, J. Socio-demographic, health and immune factors associated with high aflatoxin levels in Ghanaians. International Society for Environmental Epidemiology, 21st Conference, Dublin, Ireland, August 25-28, 2009.

Nnaji, C. O., Agyei, D., Appaw, W. O., Ellis, W. O. and Odure, I. inhibition of enzymatic browning in *Dioscorea alata* chips using natural anti-browning agents. Poster presented at the 15th Triennial Symposium of the International Society for Tropical Root Crops. Peru, November 2-6, 2009. Book of Abstracts, pp. 98.

Opata, D. D., Asiedu-Larbi, D., Ellis, W. O. and Odure, I. Suitability of wateryam (*Dioscorea alata*) in the production of couscous. Poster presented at the 15th Triennial Symposium of the International Society for Tropical Root Crops. Peru, November 2-6, 2009. Book of Abstracts, pp. 99.

Gibbah, G. R., Ellis, W. O. and Odure, I. Glucose syrup from yam starch using rice malt as the source of enzymes. Poster presented at the 15th Triennial Symposium of the International Society for Tropical Root Crops. Peru, November 2-6, 2009. Book of Abstracts, pp. 100.

National

Odure, I. AFORNET Pre-Conference Workshop Programme, 24th -26th January 2010, Anita Hotel-Kumasi-Ghana.

Larbi, C., **Odure I.**, Amankwah-Addo E., Akyiaa C., Manu F., Asiedu M and Nkoom R. Second Ghana Biomedical Convention. “New Frontiers in Biomedicine” Conference Centre, Noguchi Memorial Institute for Medical Research, Accra, Ghana, book of abstracts p 68. August 12th – 14th, 2009.

Odure I. Exhibition of Yam products at Ejura, Ghana. CSIR, Crops Research Institute/IITA/MOFA Yam Stakeholders Forum. Theme: Celebrating Yam the King of Crops. 16th October, 2009.

Amankwah, E.A. Barimah, J. and G. Eshun (2009). Nutrient Composition and Functional Properties of Some Rice Cultivars From Ghana, *Ghana Science Association Book of Abstracts, 26th Biennial Conference*, p. 86.

E.A. Amankwah, J. Barimah, L. Ofe-Brobe, E. Mireku and C.O. Nnaji (2009), The Correlation Between Cut Test Parameters And Free Fatty Acid In Seeds Of *Theobroma Cacao*, *Ghana Science Association Book of Abstracts, 26th Biennial Conference*, p. 85

Oldham, J. H., Barimah, J., and Pobi, N. O. (2009), Nutritional Value of Two Indigenous Leafy Vegetable -Carotenoids, Folate and Vitamin C, 26th Biennial Conference of Ghana Science Association, Cape Coast, 4th -9th August 2009.

J. Barimah, E. A. Amankwah, J. A. K. Prah, and W. O. Appaw, (2009). Daily Food Intake in Relation to Growth: A Prospective Analysis of Students from Two Junior High Schools at Wassa Akropong., 26th Biennial Conference of Ghana Science Association, Cape Coast, 4th – 9th August.

E. A. Amankwah, C. K. Frimpong, J. Barimah, and J. K. Ahima, (2009). Formulation of Weaning Food Using Composite of Maize, Groundnut and Soybean and Assessing its Nutritional Effect on Animal Model, 26th Biennial Conference of Ghana Science Association, Cape Coast, 4th – 9th August.

I. Odure, W. O. Appaw, C. Nnaji, and D. Agyei, (2009). Inhibition of Browning in Water Yam (*Dioscorea alata*) Chips Using Natural Antibrowning Agent, 26th Biennial Conference of Ghana Science Association, Cape Coast, 4th – 9th August.

I. Odure, A. G. Safoa, D. Agyei and W. O. Ellis, (2009). Malting of Breadnut (*Artocarpus camansi*) for Breadfruit (*Artocarpus altilis*) Glucose Syrup, 26th Biennial Conference of Ghana Science Association, Cape Coast, 4th – 9th August.

J. Adubofour, E. A. Amankwah and F. Appiah, (2009). Physicochemical Properties and Sensory Qualities of Tomato Juice and Cocktail Juice Produced from Oranges, Tomatoes and Carrots, 26th Biennial Conference of Ghana Science Association, Cape Coast, 4th – 9th August.

L.I. Kareem, **I. Odure**, A. Ablordey, K. Obiri-Danso, and C. O. Nnaji, (2009). Antimicrobial Property of Lemongrass Extracts on Cariogenic *streptococci spp.* 26th Biennial Conference of Ghana Science Association, Cape Coast, 4th – 9th August.

I. W. Ofosu, D. D. Amoah, I. Odure and W. O. Ellis, (2009). Thinning of Millet Porridge Using Brewer's Protease and/ or Amylase in Limited Hydrolysis: Effects on Maximum Paste, Breakdown and Set-Back Viscosities, 26th Biennial Conference of Ghana Science Association, Cape Coast, 4th – 9th August.

E.A. Amankwah, J. Barimah, L. Ofe-Brobe, E. Mireku, and C. O. Nnaji, (2009). Effects of Fermentation and Malting on the Viscosity of Maize-Soybean Weaning Blends, 26th Biennial Conference of Ghana Science Association, Cape Coast, 4th – 9th August.

F. Appiah, **I. Oduro**, and W. O. Ellis, (2009). Effects of Fermentation on Chemical and Functional Properties of *Treculia Africana* Seeds, 26th Biennial Conference of Ghana Science Association, Cape Coast, 4th – 9th August.

F. Appiah, **I. Oduro**, and W. O. Ellis, (2009). Physicochemical Properties of *Artocarpus heterophyllus* Flour, 26th Biennial Conference of Ghana Science Association, Cape Coast, 4th – 9th August.

I. Oduro, R. B. Voegborlo, and B. Darko, (2009) Determination of Heavy Metals in Some Ghanaians Seasonings, 26th Biennial Conference of Ghana Science Association, Cape Coast, 4th – 9th August.

I. W. Ofosu, P. Nunoo, I. Oduro, and W. O. Ellis, (2009). Surface Functional Properties of G-Irradiated Proteins from *Vigna subterranean* and Pasting Characteristics of the Proteins in Starch Models, 26th Biennial Conference of Ghana Science Association, Cape Coast, 4th – 9th August.

Donations

Dr. Joris Gerald Nii Lante Amissah, an alumnus of the Department of Biochemistry and Biotechnology currently residing in the USA donated a set of Books and Journals to support the Food Science and Technology Programme.

The Trade and Investment Programme for a Competitive Export Economy (TIPCEE), also donated an HPLC equipment to the Department. This is mainly to be used by the Food Science and Technology Department for Aflatoxin analysis, especially in cereal grains and peanut-based food products.

COLLABORATION

In order to broaden the scope and enhance the quality of training given to our students the University signed a Memorandum of Understanding (MoU) with the Food Research Institute (CSIR), Accra. The terms in this MoU are such that the third year students will spend six weeks of the second semester at Food Research Institute before embarking on their industrial attachment to the Food and Beverages industries. The attachment is to expose the students to several analytical methodologies and equipment in Food Science and Technology.

CONTRIBUTION TO SOCIETY

The Department has a vibrant student association– the Association of Food Science and Technology Students, AFST-KNUST with the slogan: *Quality our Priority*. The AFST embarks on several community-based programs for food vendors and consumers, both on and out of campus. Some of these programs include Food Audits and Food Safety Education.

Additionally, teaching staff serve on editorial boards of reputable journals and as resource persons at conferences and workshops. Others serve as external examiners for other sister universities, foreign universities/polytechnics external assessors of research papers for promotions, as external examiners for postgraduate students and reviewers of scientific papers for publication.

Within the University, some members serve on University Committees and Board. The department renders consultancy services to small and medium scale food processing and beverage companies.

DEPARTMENT OF THEORETICAL AND APPLIED BIOLOGY

INTRODUCTION

With the introduction of the Collegiate System, the name of the Department of Biological Sciences was changed to the Department of Theoretical and Applied Biology in conformity with the review of course structure and content of syllabi.

The Department is one of five currently in the Faculty of Biosciences. It runs a 4-year Bachelor of Science degree programme in Theoretical and Applied Biology and a 2-year MSc programme in Environmental Science. In addition, there are graduate research programmes leading to the Master of Philosophy (MPhil) and Doctor of Philosophy (PhD) degree in the major disciplines in the Biological Sciences. These include Microbiology, Parasitology, Ecology, Fresh Water Studies, Physiology, etc

In the 2008/2009 academic year there were 408 students in the Department:

BSc	-	353
MSc	-	45
MPhil.	-	2
PhD.	-	<u>8</u>
		408

The number of academic staff currently at post is 22:

Professors	-	Nil
Assoc. Professors	-	3
Senior Lecturers	-	4
Lecturers	-	13
Technical Instructors	-	2

One new full-time staff has been recruited this year.

ACTIVITIES

Teaching

The Department offers teaching in a number of Biological Science courses designed to equip its students with the requisite knowledge and practical skills in Biological disciplines including Microbiology, Parasitology, Entomology, Ecology, Mycology/Plant Pathology, Physiology (Plant and Animal), Genetics, Insect Ecology and Pest Control and Environmental Physiology.

The Department also offers service courses to the Departments of Biochemistry and Biotechnology, Optometry and Visual Science, the School of Medical Sciences and the Faculty of Renewable Natural Resources (FRNR).

New Programmes and Courses

New courses have been introduced as part of a general review of courses and programme structure in line with changes in the job market. Such include Microbial Ecology, Experimental Design, Genetic Engineering, Ecosystem Analysis, Biodiversity Conservation and Utilization, Ecology of Inland Waters and Environmental Microbiology.

Post Graduate Studies

The Department's 2-year MSc programme in Environmental Science consists of taught courses in the first year and a research project in the second year. Initial assistance for its establishment came from the International Development Association (IDA) through the British Council. The focus is to equip students with the knowledge and skills that would enable them to contribute to the resolution

of national environmental issues. Assistance for the programme has also come from the United Nations University Institute for National Resources in Africa (UNU/INRA). With this assistance the Department has introduced courses in Environmental Management and Policy Studies to complement existing courses.

Research training leading to MPhil and PhD degree continues in the various Biological Science disciplines under the guidance and supervision of senior members.

RESEARCH

Staff and students' research continue in the following:-

- Fermentation Studies
- Nitrogen Fixation
- Fungal infection of Crop Plants
- Aquatic Ecotoxicology
- Biology and Ecology of Tropical bees
- Biological control of Pests
- Aflatoxin levels in Industrial raw materials and Ghanaian foods
- Onchocerciasis and other Filarial diseases, Malaria, Schistosomiasis, Tissue and Intestinal Parasitic Infections and Microbial Infections.
- Distribution and Survival of Indicator and Pathogen bacterial in rivers and streams and drinking water from various sources.
- The status and change of some vegetation types in Ghana
- Resistance mechanisms in the malaria parasite and the mosquito.
- Ecological Sanitation

Collaborative research is on-going between the Department, the Kumasi Centre for Collaborative Research in Tropical Medicine (KCCR) and the Bernhard Nocht Institute for Tropical Medicine, Hamburg, Germany. The Research is on Onchocerciasis, Filariasis, Malaria and Buruli Ulcer.

Major Research Currently On-Going/Planned

In collaboration with Bernhard Nocht Institute for Tropical Medicine, Hamburg (BNI) and the Kumasi Centre for Collaborative Research in Tropical Medicine (KCCR)

- Analysis of the Anti-Filarial T Cell Responses in Onchocerciasis patients.
- Analysis of Cytokine and Cytokine receptor Allelism associated with Disease Manifestations in onchocerciasis and Lymphatic Filariasis.
- Doxycycline Chemotherapy for depletion of *Wolbachia* endosymbiotic bacteria in the treatment of onchocerciasis.

In Collaboration with Noguchi Memorial Institute for Medical Research

- Studies on the distribution of the Molecular Marker for Pyrethroid resistance in Populations of *Anopheles gambiae sensu stricto* in the Ashanti Region of Ghana.
- Elucidation of the molecular mechanisms of insecticide resistance and sequencing of the genes responsible for **conferring** Pyrethroid Resistance in the main **Anopheles** vectors of malaria in Ghana.

Waste Recycling

- Development and production of activated charcoal from coconut shell wastes as a means of minimizing and recycling wastes.

- Activated charcoal has been found to exhibit powerful bleaching and deodorizing properties and is superior to imported activated charcoal in refining vegetable oil. It has also been tested and found very efficient in water purification.

CGIAR Challenge Program on Water and Food

- This is a collaboration between KNUST and the University of Copenhagen, Denmark, which is aimed at safeguarding Public Health Concerns, Livelihoods and Productivity in Wastewater Irrigated Urban and Peri-urban vegetable Farming.
- Challenge Program on Water and Food sponsored two sister projects (PM 38 and PN 51) in collaboration with International Water Management Institute (IWMI), Accra, University of Copenhagen and the Royal Veterinary and Agricultural College, Denmark; University of Senegal, Dakar; CREPA, Burkina Faso; Water Research Institute, Accra and University of Development Studies, Tamale.
- The two projects (PN 38 and PN 51) led by Prof. R. C. Abaidoo, will take a holistic approach to improve land and water productivity, minimize public health risks and safeguard livelihoods in irrigated urban and peri-urban agriculture (UPA) in response to needs expressed by local authorities and farmers. The projects will contribute to urban food security, poverty alleviation, and women empowerment and reduce health risks relating mostly to ingestion of intestinal pathogens and to some extent, heavy metal contamination. The cost of the project CPWF is over \$1,000,000 with the donor institutions contributing over \$700,000 while the local institutions are contributing over \$200,000 as matching funds. KNUST coordinates PN 38 and University of Copenhagen manages PN 51.

UNICEF Project

United Nations Children's Fund awarded an amount of \$5,279.79 to Dr. K. Obiri-Danso to investigate "Pollution of Peri-Urban Water Supply from Groundwater sources in the Bawku-East District."

EU Funded Project/NETSSAF

Prof. R.C. Abaidoo and Dr. K. Obiri-Danso are involved in an EU Funded Project – **NETSSAF** – The Network for the Development of Sustainable Approaches for Large Scale Implementation of Sanitation for Africa (**NETSSAF**) which is within the Cooperation Strategy in the framework of the FP6 Program of the European Community. The aim is the preparation of the technical and organizational foundation for massive implementation of sanitation facilities in West Africa. The general objective of the Coordination Action NETSSAF is to coordinate and integrate the current scientific research, technological innovation and execution activities, creating synergies to support large-scale implementation of sustainable sanitation systems in peri-urban and rural areas of West Africa.

Lancaster University Alumni Grant

The Alumni Association of Lancaster University, UK awarded a grant of £4,728.00 to enable a PhD student from Lancaster University work with Dr. K. Obiri-Danso in the laboratories of the Department of Theoretical and Application Biology on pathogen numbers on freshly eaten vegetables irrigated with wastewater.

Canada NSERC/University of Waterloo Project

Canada NSERC in collaboration with University of Waterloo have awarded US\$4,912.76 and equipment worth CAD\$6,475.00 to Prof. E. Frempong and Dr. S. Aikins to investigate the

limnology of Lake Bosumtwi in Ashanti region. Two students, Mr. P. Sanful and Mr. F. Awortwi, have been registered for their Ph.D. degrees on this project.

COMMUNITY SERVICE/CONTRIBUTION TO SOCIETY

Staff of the Department (Senior Members) continues to serve as External Examiners to other Universities and as assessors to various national institutions. They also serve on various National and International Committees.

Students of the Department have been involved in Health Education campaigns in various communities in a number of districts in the Ashanti Region. Such campaigns have touched on HIV/AIDS, water-borne diseases, Buruli Ulcer, Malaria, etc. The students have stressed on how to avoid/prevent contraction of these diseases. In some communities the students organized and led the people in tree-planting activities. These activities have been supported by the District Assemblies, District Health Authorities, PPAG and others.

INNOVATIONS

The Department is embarking on a programme to transform the University Botanic Garden into a recreational park to attract visitors, both local and foreign. There are plans to develop our Museum so as to attract visitors and students from secondary schools. Consideration is being given to introduce an internal training programme for the technical staff, to equip them to handle other areas of work aside that which they have hitherto been doing. Plans are also being made to produce teaching slides for secondary schools as part of our income generation activities. The Department also generates additional income from Water Quality Analysis on behalf of the Food and Drugs Board.

PROJECTIONS

The Department has undertaken an extensive review of the courses offered in its BSc degree programme to make the BSc programme more applied and attractive. The new name of the Department – Theoretical and Applied Biology reflects these changes. These are expected to attract more students both local and foreign and to bring in more funds (AFUF). With expected income from the Botanic Garden, the Department expects to generate some funds to supplement Government Subvention. The number of foreign students is expected to increase significantly, each year with the yearly programme of marketing the Department adopted by the College of Science.

INTERNATIONAL AFFILIATIONS/LINKS

The Department continues to benefit from the College of Science's linkage with RAMAPO COLLEGE of New Jersey, through a donation of computers and various textbooks and educational materials.

The Department's collaboration with the Bernhard Nocht Institute for Tropical Medicine (BNI), Hamburg, through the Kumasi Centre for Collaborative Research in Tropical Medicine (KCCR) continued with the training of research students at the Masters and Doctoral level.

A draft memorandum of understanding (MOU) for an academic linkage between the College of Science, KNUST and the Indiana University of Pennsylvania ((IUP) has been approved and the Department will benefit from the exchange programme involving staff and students, beginning in the 2005/2006 academic year.

GRANTS/AID/SUPPORTS

The United Nations University Institute for Natural Resources in Africa (UNU/INRA) continued its support for our MSc Environmental Science programme with a donation of computers and accessories and books.

CHALLENGES

With the increasing number of students for service courses from other departments, available lecture room space is scarce. There is a need for an auditorium with a large sitting capacity accommodating about 500. There is also need for more microscopes to facilitate the conduct of practical classes in some courses and for research. Currently, the number of usable microscopes in the Department is woefully inadequate. It is expected that with the new funding initiative, Teaching and Learning Innovation Fund (TALIF), the number would be improved upon; however, there is the need for more because of the large number of students. Lack of a vehicle has hampered fieldwork, educational trips and study visits of students. These are urgent needs of the Department.

CONCLUSION

It is expected that the number of staff would increase as new courses are introduced and new programmes developed at the graduate level. Further international collaborative links are being sought both in the South-South and North-South level to enhance research and the research-training programmes in the Department.

DEPARTMENT OF ENVIRONMENTAL SCIENCE

INTRODUCTION

The Department was established in 2004 following approval by the Academic Board. It is currently being nurtured by the Department of Theoretical and Applied Biology.

ACTIVITIES

Teaching

The Department offers teaching in a number of Environmental Science courses which are designed to equip the students with the requisite knowledge and practical skills in the various disciplines including Environmental Pollution, Climatology, Rural Sociology and Planning.

DEPARTMENT OF OPTOMETRY AND VISUAL SCIENCE

INTRODUCTION

The Department of Optometry and Visual Science is one of the five Departments in the Faculty of Biosciences in the College of Science. The Department runs a 6-year Doctor of Optometry programme.

This year, the 4th batch of O.D students will graduate. This brings to 131 the number of ODs the Department has so far produced.

STUDENT POPULATION

There are currently 201 students in the department.

ACTIVITIES

Teaching

The Department offers courses and electives of sufficient depth that ensures that the department is placed at the cutting edge of optometric education in the country. These include the right mix of

lecture courses, practicals, seminars, externship and internship and also operating students clinics all geared towards excellence and confidence building that is very necessary for future professional work.

The goal of the Department continues to be the training of students to eventually pass out as primary healthcare practitioners of the eye and visual system who provide eye and vision care which includes refraction, dispensing, detection/diagnosis of disease in the eye, management and or referral. The training emphasizes that, even though they are usually the first contact for people with eye problems, they are part of a team and need to work with other health professionals including ophthalmologists, ophthalmic nurses and opticians to give the patient comprehensive eye and vision care.

COLLABORATION

The Department collaborates with several eye clinics all over the country for the clinical training of the students. Students visit some of these clinics during the semester and others for attachment during the vacation. OD 6 students spend 12 weeks a semester in an external clinical setting.

Listed below are the eye clinics and hospitals used in the collaboration;

- St. Dominic's Hospital, Akwatia
- Koforidua Central Regional Hospital
- Tamale Regional Hospital
- Westphalian Hospital, Oyoko
- Emmanuel Eye Centre, Accra
- Tema General Hospital
- Sunyani Regional Hospital
- Kumasi South Hospital, Kumasi
- Komfo Anokye Teaching Hospital, Kumasi
- Asamang SDA Hospital
- VRA Hospital, Akosombo

Turnkey Project

Under the Turnkey Project, one of the laboratories in the Department was selected among a few others in the college to be refurbished and stocked with state of the art modern equipment. The commissioning of this project was done in November 2010. This laboratory has gone a long way to greatly enhance the teaching, learning and quality activities of the Department. Indeed, the days of insufficient and outmoded equipment are a thing of the past.

Qualifying Examination and Second Oath Swearing and Induction Ceremony

In November 2010, a qualifying exam for the 2007/08 graduates who had successfully completed a year of internship was conducted in conjunction with the Ghana Optometric Association (GOA) and University of Cape Coast Department of Optometry in Accra. This was the second examination of its nature to be conducted for Optometrists who have completed a successful internship programme as determined by the GOA. Passing this examination is a prerequisite for Optometry graduates to become full members of the profession.

The Department held the 2nd Oath Swearing and Induction Ceremony for the 2nd batch of graduates of the Doctor of Optometry programme on the 28th of March, 2010 at the Great Hall. The event was held in collaboration with the Ghana Optometric Association (GOA) and University of Cape Coast, Department of Optometry which was the very first on this campus. The occasion was graced with

the presence of special guests, amongst them are the Nana Akyempimhene representing the Asantehene and the Minister of Health himself, Hon. Benjamin Kumbur. Thirty-three (33) students were from the KNUST and five (5) from the UCC Departments of Optometry. They graduated from their Doctor of Optometry programmes in 2007/2008, had successfully completed a year of internship and also passed an examination thereof were inducted. It is glad to say that the program was indeed a great success.

Agreement between Keeler International and Department of Optometry

In November 2009, the Department received visitors from Keeler, UK and a representative in Ghana. Keeler is one of the leading producers of ophthalmic equipment on the worldwide market. Talks led to an agreement for Keeler UK through their representative in Ghana to provide students with a set of basic necessary clinical equipment at reduced price and with very decent terms of payment.

This agreement has gone a long way to enhance, even more, the learning of clinical skills by students within the department. Discussions are also ongoing for the possibility of setting up a Keeler Examination room in the near future which would be stocked fully with all kinds of Keeler ophthalmic equipment and instruments. Personnel from Keeler International, UK would pay periodic visits to the Department to provide the needed logistics and technical support on the use of their equipment.

RESEARCH

Senior members of the Department are involved in various researches in the following areas:

- Visual status of school children
- Environmental vision in the workplace
- Link between visual status and academic performance
- Refractive error development and etiology of myopia
- Accomodative and vergence dysfunctions in poorly performing and inattentive basic school children
- Accomodative and vergence dysfunctions amongst KNUST students
- Randomized, double-masked trial of atropine vrs. cyclopentolate – phenylphrine combination in cycloplegic refraction
- Trend in refractive error changes after cataract extraction
- Patient satisfaction with cataract extraction and refractive error correction after cataract extraction
- Refractive error in tertiary students
- Prevention of cataract – potentials of some herbal preparations
- Prevalence and causes of blindness and low vision in rural communities
- Ocular morbidity amongst young people in the rural community

In March, the much awaited Refractive Error for School Children (RESC) project conducted in conjunction with International Centre for Eye Education (ICEE) and World Health Organisation (WHO) was completed.

SERVICE TO THE COMMUNITY

Staff and students of the Department have been continually involved in outreach programmes to institutions, schools, churches, childrens' homes, market places and other such gatherings to

perform vision screening and eye examinations in deprived communities in Ghana on a regular basis. Faculties on such occasions give talks on eye health.

One of such volunteer outreach programmes was conducted on World Sight Day in October 1999 when the Department organized a massive eye screening exercise at the Kejetia Lorry Station. Over 500 individuals were screened. Another 512 people were screened in the Offinso township in March 2010. In addition to these, the Optometry stand at Tratech remains one of the most patronized stands and our xxxx

Members continue to serve on the Academic Board and various subcommittees in the University.

INCOME GENERATION ACTIVITIES

An Eye Clinic, which also doubles up as a teaching clinic generates income for the Department, is currently running at the Old FORIG premises. This clinic has been well equipped and continues to enhance the services the Department offers to the community.

STAFF DEVELOPMENT

Two staff members are currently taking graduate studies in xxxx within the university. Staff also continuously takes advantage of the Continuing Professional Education (CPE) programmes organized by the GOA.

MEMORANDUM OF UNDERSTANDING BETWEEN KNUST AND ICEE:

ASHANTI VISION CENTRE

An MOU was signed between the International Centre for Eye care Education (ICEE) and KNUST in April 2010 for the establishment of the Ashanti Vision Centre. The project for which the MOU was signed is collaboration between KNUST, ICEE and the Ministry of Health through the xxxx of Ayeduase. The Ashanti Vision Centre situated in Ayeduase was established and commissioned in May 2010. Apart from making eye care available and affordable, this centre will afford our students yet another opportunity to practice and continually enhance their skills and confidence. We as a department are excited about the opportunity. The project is valued at about 40,000.00 USD.

CHALLENGES

Being a clinically-based programme, there is a limit to the number of students that the Department can admit at a time. The present source of funding of the University programmes which is solely from the Academic Facility User Fee (AFUF) paid by students, creates a serious funding gap between income and expenditure of the Department. There is the need for more funds to enhance the work especially in the clinical areas in the department.

The former problems of classrooms, clinic and office space for Department are on the verge of being solved as we anxiously await the move into the New Science Block of classrooms and offices

CONCLUSION

With continued improvement in the equipment and staff situation, the Department expects to be able to increase its student intake in the coming years.

FACULTY OF PHYSICAL SCIENCES

INTRODUCTION

The Faculty of Physical Sciences is one of the two Faculties of the College of Science. It was created from the former Faculty of Science in January 2005. Thus, the Faculty is six years now.

The vision of the Faculty is to be a leading Faculty for teaching and research in pure and applied sciences and producing high caliber manpower and the dissemination of science and technological

information for the socio-economic development of Ghana and Africa. Graduates from the Faculty are found in relevant sectors of the economy, contributing their quota to the national development. In addition, some senior members of the Faculty serve on the editorial boards of various national and International journals, on the national and local executive of the Ghana Science Association, Chemical Society of Ghana, Mathematical Association of Ghana and other institutions.

The pioneer Dean of the Faculty was Prof. R.K. Nkum. The Faculty is currently headed by Prof. I.K. Dontwi.

STRUCTURE

The Faculty currently runs five (5) undergraduate programmes located in four different Departments below:-

- Department of Chemistry - BSc Chemistry
- Department of Computer Science - BSc Computer Sciences
- Department of Mathematics - BSc Mathematics and BSc Actuarial Sciences
- Department of Physics - BSc Physics and BSc Meteorology and Climate Science

The Department of Computer Science is currently running a two year top-up degree programme by Distance Learning mode.

The Faculty runs the MSc Industrial Mathematics programme in the Distance Learning mode at the Mathematics Department.

NEW PROGRAMMES

The Faculty will in the coming academic year offer two MPhil programmes in Computer Science and Information Technology (both regular and distance learning) at the Department of Computer Science.

The Faculty will also run the under listed three new undergraduate programmes at the Department of Computer Science:

- BSc Information Technology
- BSc Information and Communication Technology
- BSc Business Information Technology

The Faculty has introduced the following new undergraduate and MPhil programmes which will be run in the Mathematics Department this academic year:

- Bachelor of Science (BSc) Degree in Statistics
- Master of Philosophy (MPhil) Degree in Mathematical Statistics
- Master of Philosophy (MPhil) Degree in Biostatistics

STAFFING AND INFRASTRUCTURE

The staffing situation in the Faculty has improved tremendously due to the effort of the College and Faculty to recruit new staff. At present there are Eighty (80) senior members in the Faculty. More Senior Members need to be employed to match the increasing number of students which now stands at almost two thousand. The Science Complex Building which is supposed to house the Departments of Computer Science and Mathematics has been completed. We hope that all efforts will be made to furnish the Library Complex and offices of the building for use before the beginning of the 2010/2011 Academic Year.

VISITING PROFESSOR

The Faculty had one Visiting Professor - Prof. William Oblitey, in the Computer Science Department. He left the Faculty in December 2009 having stayed with the Faculty in the 2009/2010 academic year. It is anticipated that the Faculty will have more Visiting Professors in the coming years.

SEMINARS

During the year under review Mr. Robert Owusu from the Innovation Centre, Denmark presented a Seminar on 9th September, 2009 on the theme: *Capacity Building in the Tri-Connected Disciplines of mathematical Sciences and Applied Information Technology*.

Another Faculty Seminar was also organized on 11th November, 2009. The title was *The Use of Geographic Information System (GIS) in Physical and Mathematical Sciences Research*. This was presented by Mr. Vincent Kyere, from the Catholic University College, Fiapre, near Sunyani.

VISITORS

The following officials visited the Faculty during the year under review:

Joseph Cudjoe, COCOBOD

Henrietta M. Eyison, English Department, KNUST

Yaw Adu-Gyamfi, SMIDO

Fayac Manji, SMIDO

Evans K. Wadery, TV3

Charles Obeng-Ntim, TV3

Daniel Benefor, EPA

Mr. Robert Owusu, Innovation Centre, Denmark

Mr. Vincent Kyere, Catholic University College, Fiapre, near Sunyani.

Martha Offeibea Dodoo, Director of Administration, Accra.

WORKSHOPS/MEETINGS

The World Literacy Crusade from USA in collaboration with the Institute for Global Health and Education organized a workshop on Executive Business Management Training in the Faculty during the year under review.

SERVICE TO COMMUNITY

A member of the Faculty provides support to All Nations University College. Some members also serve as External Examiners/Moderators, Resource Persons and Visiting Lecturers to many Universities. Other senior members of the Faculty are also serving on various Boards and Committees of the University and other National Boards such as the National Accreditation Board. We have some senior members also serving on WASSCE.

INTERNATIONAL AFFILIATION/LINKAGES

Following our collaboration with the University of North Carolina-Chapel Hill and the signing of the MOU between UNC- KNUST. The first two students are Mr. Emmanuel Bonuedje and Ms. Carole Agyeman-Prempeh who are pursuing PH.D programme at UNC-Chapel Hill.

On the MOU established between KNUST-GMIC-UNDP, a Pre-Incubator program at KNUST, is expected to prepare and nurture potential Incubatees to the Incubator Centre in Accra.

The Management Team comprises the following officials: KNUST – Prof. I.K. Dontwi, Dr. J.B. Hayfron-Acquah and Dr. K. Diawuo Solomon Asante Dartey MOC (GMIC) and Fredrick Ampiah, UNDP

The Faculty maintains her links with the University of Vermont and the University of North Carolina. We expect our links with the University of Vermont to grow and flourish through contacts with Prof. I.K. Dontwi. Faculty of Physical Science is already associated with the University of Leicester, U.K. as part of a Research mentoring and collaboration project i.e. “Mentoring African Research in Mathematics”, a joint initiative of the London mathematical Society, the international Mathematical Union and the Mathematics Millennium Science Initiative.

The Physics Department has linkage with the University of Leeds on Meteorology and Climate Science. Senior members also attended international colloquiums on Climate Change in West Africa.

Dr. J.A.M. Awudza of the Chemistry Department is working on funding from British Council’s DELPHE and the University of Manchester. The DELPHE support will enable the Chemistry Department to tap into the expertise of the School of Chemistry at the University of Manchester to run the MSc programme for the first three years. It will also help in developing the capacity of some staff at the Chemistry Department for teaching and research in the field of polymer science and technology.

INTERNATIONAL RECOGNITION

The publications of F. Boakye et al of the Physics Department are carrying an extremely high citation and this publication has been added to NASA Astrophysics Data System. This information can be found on the internet.

INCOME GENERATION

The Faculty’s only source for generating income continues to be the preparation of Transcripts. Most departments in the Faculty have embarked on income generating activities.

FUTURE PLANS

The Faculty of Physical Sciences has plans to start programmes in BSc Materials Science, BSc Earth Sciences and Mathematics with Business Studies Programmes. The Department has also proposed two new postgraduate programmes namely MSc Computer Science and MSc Information Technology. There are proposals before Academic Board to run part-time and parallel Degree Programmes in Computer Science and Mathematics Departments by next Academic Year 2010/2011.

DEPARTMENT OF COMPUTER SCIENCE

INTRODUCTION

The Department of Computer Science is one of the four Departments of the Faculty of Physical Sciences of the College of Science. The Department started off in 1977 with a 1-year certificate course in Data Processing, which was later changed to a 2-year Diploma programme. A few years later, the Department introduced a 3-year degree programme in Computer Science, the first ever in the country. In 1999 the Department stopped offering the Diploma in Data Processing and the BSc programme changed to a 4-year programme.

Presently, the Department of Computer Science performs two main functions, namely, academic and the provision of computing services. In addition, faculty members are involved in various research activities and software development.

Since the establishment of the Department two decades ago, the Department has topped the list of graduates produced by the College, with a total number of over 2500 graduates.

ACTIVITIES

Teaching

The Department currently runs a 4-year degree program in Computer Science and a 2-year top-up degree programme (by distance learning mode) also in Computer Science with emphasis on systems development, networking and computer programming. The programmes prepare students adequately for careers as system programmers, software engineers, system analysts, system designers and application programmers. In addition to these, the department offers service lectures in computer appreciation and computer programming to students in other departments of the University.

The undergraduate student population in the Department is over 400 with the breakdown as follows:

First year	182
Second year	82
Third year	112
Fourth year	123
Top-Up	17

The Department has three well- equipped computer laboratories and these are networked. The Department also has a library which is well stocked and fully air-conditioned with wireless internet access facility.

STAFFING

The number of teaching staff stands as sixteen (16) presently. It is expected that Miss Linda Amoako, a new recruit, will join the Department at the start of the 2010/2011 academic year.

Professor William Oblitey of Indiana University of Pennsylvania (IUP) in the United States, who joined the Department in December 2008 as a Fulbright Visiting Scholar for a period of one year completed his service to the Department and has since January 2010 returned home to the United States. He was actively involved in all activities of the Department. During his stay he helped to graduate the first MPhil. student of the Department. Prof. Oblitey also organized a one week intensive training programme on Network security fundamental for members of staff in the Colleges of Science and Engineering.

STAFF DEVELOPMENT

During the academic year under review, three members of staff obtained their MPhil degrees. They are Mr. D. A. Asamoah, Mr. W. O. Oppong and Mr. F. O. Peasah. This brings the number of full-time staff in the Department with second degrees to twelve (12). It is expected that most members of staff will enroll on PhD programmes during the next academic year.

NEW PROGRAMMES AND COURSES

Graduate Programmes

The Department has introduced two MPhil Programmes in Computer Science and Information Technology, which will start in 2010/2011. Each of the programmes is two years in duration. The first year is for taught courses and the second year is for seminars and research. Both programmes will also be by distance learning to enable prospective employers to take advantage of the programme.

Undergraduate Programmes

Three new undergraduate programmes have been developed by the Department. These are BSc Information Technology, BSc Information Communication and Technology (ICT) and BSc

Business Information Technology. The programmes are expected to be introduced by the 2011/2012 academic year.

Approval has also been given to the Department to run a part-time/parallel programme in Computer Science.

RESEARCH

Current research being undertaken in the Department is in the area of software engineering, Computer Networking, data Communication and Optimization. Research is also being undertaken in the area of computer aided learning, with special emphasis on the use of computers in instruction at the primary and secondary levels of the education system in Ghana.

The Department is also researching in computer and Internet networking and security issues. The Department has designed a Biometric system that can be used to recognize people from the way they walk (Automatic Gait Recognition). This system can be very useful to the security agencies and health institutions for correcting pathological abnormal gait.

SERVICE TO COMMUNITY

The Department organizes computer appreciation programmes for members of staff of the University and other people from outside the University. This programme usually takes place during the long vacation. The students of the department also embark on Computer Awareness programmes every year to educate students in first and second cycle institutions on Information and communication Technology.

Some members of the Department continued to offer service to the community in the following areas:

- (Dr. J. B. Hayfron-Acquah served as Consultant to the National Accreditation Board in assessing Computer Science programmes.
- Dr. M. Asante and Dr. J.B. Hayfron-Acquah provided consultancy and advisory services to KNUST and Christian Services University College, respectively.
- Dr. J. B. Hayfron-Acquah, Mr. K.A. Pabbi and Mr. J. K. Panford served as External Examiners and Moderators to sister Universities (University of Ghana, University of Education, Kumasi Campus, University of Cape Coast, All Nations University, Valley View University, among others.
- Some members of staff have written ICT books that have been approved by Ghana Education Service to be used by Junior and Senior High Schools. They include Dr. J. B. Hayfron-Acquah, Mr. J. K. Panford, Mr. M. F. Bosu, Mr. S. A. Asamoah, Mr. J. G. Davis and Mr. N. Frimpong

DONATION

The Department donated over forty computers to some selected Senior and Junior High Schools in and around KNUST during the 2009/2010 academic year.

APPRECIATION

The Department is very grateful to SSNIT and Vodafone who continue to take a good number of its continuing students on vacation attachment and final year students for National Service and employment.

The Department acknowledges Prof. William Oblitey of the Indiana University of Pennsylvania for his service to the Department and his donation of core Computer Science books to the Department.

Appreciation also goes to SAMBUS , a leading dealer in Computers and computer accessories for donating one computer laptop to the best graduating student last year.

The Department is very grateful to the entire staff of Meltwater Entrepreneurial School of Technology, for organizing two workshops for students of the Department.

The Department also wishes to acknowledge the following companies and institutions for their assistance in various ways:

- Guinness Ghana Limited – for donating computers and computer accessories from time to time.
- SG-SSB (Accra), SIC (Accra) and BSystems (Accra) - Accepted to offer vacation training to students from the Department.
- Ghana Ports and Harbours Authority, Ghana Telecom, SSNIT, Tema Oil Refinery, VALCO, VRA and Ghana Immigration Services – For allowing students from the Department to visit their institutions during the field trips.

DEPARTMENT OF CHEMISTRY

INTRODUCTION

The Department of Chemistry at KNUST is one of the leading stand alone Chemistry Departments in Ghana with a current student population of about 450. It offers a four-year BSc degree programme in chemistry. In addition, the department also offers MSc/MPhil and PhD programmes. The Department acknowledges the centrality of chemistry as a science and trains its students to take advantage of the cornucopia of contributions that chemistry can make to society. As part of its desire to encourage and motivate students to be innovative and enterprising, it has instituted the chemical enterprise development initiative (CHEDI) programme through which students are trained to develop new products. CHEDI has become the brand name for the products of the department and features prominently at any exhibitions the department participates in.

STAFFING

Academic Staff strength at the department currently stands at twenty. Out of these, one is a visiting professor who has come in to support a new MPhil programme in polymer science and technology (vide infra), one is on post retirement contract, a third one is on part-time and five are on study leave (for their doctoral degrees). These are supported by eight technical staff and five administrative and ancillary staff.

SEMINARS

Weekly seminars form part of the department's routine activities. The seminars are given by either invited speakers, staff of the department or by postgraduate students. The seminar series forms part of the training for the students. It offers postgraduate students the opportunity to either carry out research on issues of relevance to their programmes or give progress report on their research work. It also offers an opportunity for all the students in the department to be educated on some new trends in chemistry, science and technology as a whole or in enterprise, business or related issues.

MOLECULAR MODELING LABORATORY

Dr Evans Adei, a computational/physical chemist of the department has established a state of the art molecular modeling laboratory in the department with funding from TALIF. The laboratory has facilities to take on at least twenty students at a time. Already, one PhD student has used the facilities to complete his PhD work. With these facilities, studies on some organic and organometallic reaction mechanisms as well as computer-aided drug design can be carried out using the quantum mechanical/molecular mechanics approach.

RESEARCH, CONFERENCE ATTENDANCE AND GRADUATE TRAINING

Members of staff in the department are actively engaged in research in different areas of chemistry. These include density functional studies of organometallic reaction pathways, polymer chemistry, catalysis, biofuel development, organo-metallic and bio-inorganic chemistry, natural products chemistry and bioactive materials, pesticide chemistry, environmental chemistry, monitoring of heavy metals in the environment, etc.

Since the beginning of the 2009/2010 academic year, some members of staff have been invited to make presentations at some international conferences/workshops. Dr J.A.M. Awudza was invited as one of three African experts to make presentations at an Expert Group Meeting on Next Generation Biofuels in Trieste, Italy. This programme was organized by the International Centre for Science and High Technology and the United Nations Industrial Development Organization (ICS-UNIDO). Mr. Osei Akoto attended two separate conferences in Zambia and Uganda on environmental pollution and toxicological issues. Mr. E.E. Kwaansa-Ansah is a proud recipient of a University of Michigan African Presidential Scholars Programme Award which has given him an opportunity to spend six months at the African Studies Centre International Institute at the University of Michigan to carry out part of research towards his PhD. Some senior members also attended and made presentations 26th biennial conference of the Ghana Science Association (Cape Coast University, Cape Coast, 4 - 9 August 2009).

A member of Staff, Mr. Ray B. Voegborlo, completed and successfully defended his Ph.D. thesis in March this year. He is currently awaiting the award of the Ph.D. degree. He was supervised by Prof. A. A. Adimado, also of the Chemistry Department. Mrs. Trinity Ama Tagbor (of the Building and Road Research Institute and supervised by Dr. S.K. Twumasi of the Chemistry Department) and Mr. Richard Tia (who studied under the VC's initiative and was supervised by Dr. Evans Adei) have submitted their PhD theses and are awaiting their viva voce.

COLLABORATIONS

The Department of Chemistry has a collaborative arrangement with the School of Chemistry, University of Manchester, UK. Through this collaboration, Mrs. Ama Tagbor, a PhD student in this department had the opportunity to travel to Manchester to carry out part of her research for the PhD work at the School of Chemistry, University of Manchester. We are very grateful to Prof Paul O'Brien for that support.

A MPhil programme in polymer science and technology is being initiated at the Chemistry Department (to take off in August 2010) through this collaboration. In this regard, some members of staff from the University of Manchester will visit Kumasi to teach some modules of the course in the first two years. Financial support for this programme has been received from the Development Partnership in Higher Education (DELPHE) programme which is funded by the UK's Department for International Development and administered by the British Council. The Chemistry Department was one of the only two recipients of DELPHE funding in Ghana in 2009.

As part of the preparations towards the initiation of the M.Phil.in polymer science and technology programme, three faculty members from the Chemistry Department: Dr. J.A.M. Awudza (Project leader), Dr. S. Osafo Acquah and Mr N. Owusu Boadi, travelled to Manchester from 20 February to 01 March 2010. The purpose of the trip was to interact with the team at the University of Manchester which will be involved in the teaching of some of the course modules and develop some course materials. The team also visited the headquarters of the British Council which is based in Manchester to interact with the DELPHE Project Delivery Coordinator for Africa, Mr. Stephen Dunnett on the MPhil programme.

A national stakeholder workshop on the MPhil programme was successfully held at KNUST on 10-11 May 2010. The keynote address was delivered by Dr Victor Agyemang, Director of the Forestry Research Institute of Ghana on behalf of the Minister for Environment, Science and Technology. Participants came from Colleges of Science and Engineering, KNUST, Chemistry Department of Cape Coast University, Materials Science and Engineering Department of University of Ghana, the Ghana Standards Board, Waste Management Unit of Accra Metropolitan Assembly, Tema Oil Refinery and Zoomlion,

An offshoot of the trip to Manchester was a contact made with the manager of the Pan-African Chemistry Network (PACN), Dr Alejandra Palermo. PACN is supported by the Royal Society of Chemistry. Dr. Palermo wishes to extend the activities of PACN to West Africa through Ghana. Dr. J.A.M. Awudza (a Chartered Chemist and a Member of the Royal Society of Chemistry) and Dr. S. Osafo Acquah (President of the Ghana Chemical Society) are liaising with Dr. Palermo to facilitate this process.

As mentioned earlier, Mr. Akoto participated in an international conference in Zambia in October 2009. An outcome of Mr. Akoto's participation in the Zambia conference is a follow-up visit by Prof Mayumi Ishizuka and one of her students from the Laboratory of Toxicology, Graduate School of Veterinary Medicine, Hokkaido University, Japan, to the department. The purpose of the visit was to explore possibilities of collaborative research between their institution and the Department of Chemistry. A memorandum of understanding has been signed between the Graduate School of Veterinary Medicine, Hokkaido University and the College of Science to facilitate the collaboration. Another team of one professor and two graduate students from the School are now in the country to start an environmental study programme with some staff and students of the Chemistry Department.

The Institute of Advanced Materials, Devices and Nanotechnology at the Rutgers University, New Jersey, USA, has initiated a collaborative arrangement with the department. The National Science Foundation of the United States of America is funding a project titled "IGERT: Nanotechnology for Clean Energy Generation and Storage" at the Rutgers University and through the collaboration, arrangements are being made for some students and staff from this department to participate in that project. Discussions on this arrangement are ongoing.

The Department and the School of Chemistry at the University of Manchester submitted a proposal on "Developing Internationally Competitive Research on Solar Cell Materials at KNUST" to the Leverhulme - Royal Society Africa Award scheme. The proposal, which is worth £150,000.00 has been approved and will be implemented over three years (2010 to 2013). Dr J. A. M. Awudza is the team leader at KNUST.

EXCHANGE PROGRAMMES

Since 2006, the department has been receiving German students who are on the IAESTE (International Association for the Exchange of Students for Technical Experience) programme. They spend three to four months in the department, carrying out researches under the supervision of some of the lecturers. Two of our students were in Germany between September and December 2009 on the IAESTE programme to gain some practical experience in some German institutions. The department is expecting one German student and an Indian student in the next academic year on the IAESTE programme.

REFURBISHMENT OF LABORATORIES AND EQUIPMENT

Through the Turnkey Project, two of the laboratories in the department have been refurbished. Some new pieces of equipment, including a state of the art FT-IR spectrometer, UV-spectrometers and bomb calorimeters have been installed in these laboratories. These will enhance teaching, learning and research. Arrangements are being made for the refurbishment of the remaining laboratories.

A Gas Chromatograph-Mass Spectrometer (GC-MS) and a High Performance Liquid Chromatograph (HPLC) have been purchased by the College of Science through TALIF and are expected to be installed in the department as part of the College's centralized laboratory.

SERVICE TO COMMUNITY

Members of staff in the department continue to offer a variety of services to community at local, national and international levels.

Prof. A.A. Adimado is the Dean of the School of Research and Graduate Studies. He is also the Government appointed Chairman of the Council of Ho Polytechnic. He also serves in the following capacities:

- Campus coordinator for TALIF
- Member, University Appointments committee
- KNUST representative on the Governing Board of the West African Examinations Council
- External Examiner and Assessor to a number of Universities and Research Institutes in Ghana

Prof. J.H. Ephraim is the Vice-Chancellor of the Catholic University College at Fiapre near Sunyani. He is also is a member of the Editorial Board of the Journal of the Ghana Science Association (JGSA), a reviewer for the JGSA, Journal of the Ghana Chemical Society and Journal of Science and Technology, JUST.

Dr. J.A.M. Awudza is a reviewer for JGSA. He also serves in the following capacities:

- Member, Board of Trustees, Centre for the Development of People, a national non-governmental organization.
- Served as resource person for ICS-UNIDO on next generation biofuels development in Ghana and the West African Sub-region.
- Member of the Energy Centre, College of Engineering, KNUST, and in that capacity, supports biofuels-based industries in Ghana.

Dr. S. Osafo Acquah is President of the Ghana Chemical Society. He is also a reviewer for the JGSA and a member of the University Centre for HIV/AIDS studies.

Mr. N.K. Asare-Donkor is a resource person for the WAEC.

Mr. G.K. Tuani serves as resource person for WAEC.

The Department offers laboratory services to a number of clients, e.g. chemical Engineering Department of Kumasi Polytechnic, World Vision, Food and Drugs Board, Guinness Ghana Ltd. Coca Cola Company and individuals.

PROJECTION

New programmes under consideration include;

- Cosmetic Science (Cosmetology)
- Forensic Science / Chemistry
- Pesticide Chemistry
- Medicinal Chemistry
- Glass Technology / Chemistry
- Hydrocarbon and Petroleum Chemistry
- Chemistry and Enterprise

DEPARTMENT OF MATHEMATICS

INTRODUCTION

The Mathematics Department of this university, as a leading centre of excellence of Mathematics in Ghana, is vigorously pursuing a dynamic agenda of providing an up to date comprehensive and thorough training to its students at both the undergraduate and graduate levels.

PROGRAMMES

Programmes which are being actively run in the department currently include BSc in Mathematics, BSc in Actuarial Science, MSc in Industrial Mathematics, as well as MPhil and PhD in Mathematics.

There are currently 1000 undergraduate students in the department with over 600 pursuing the BSc in mathematics and 400 the BSc in Actuarial Science. In addition to this there are over 200 graduate students pursuing programmes in both mathematics and industrial mathematics.

Other programmes envisaged include Masters and PhD in Statistics, Biostatistics, Actuarial Science and Financial Mathematics to be delivered both in the distance and regular modes.

This year (June 2010), over 140 students will graduate with BSc Honours degrees in Mathematics, over 100 students will graduate with BSc Honours degrees in Actuarial Science and over 50 will graduate with Masters Degrees in Mathematics and Industrial Mathematics with 24 of them being distance learners. One person will graduate with a PhD in Mathematics.

ACADEMIC STAFF

With a highly qualified and experienced academic staff, the department boasts of staff strength of 27 with three on study leave pursuing their Doctor Programmes. 12 senior members hold PhDs and by the end of this year this number is likely to increase to 14. One senior member is of Professorial rank, five are of the senior lecturer rank and two are women.

Our energetic and very hardworking staff teach and supervise research not only at the mathematics department but also in many other departments of the university including departments at the College of Arts and Social Sciences. The department also provides service courses in mathematics to almost all other departments of the university at both undergraduate and graduate levels. For example, all undergraduates of the College of Engineering take at least 4 hours of mathematics courses every semester for the first two years.

COLLABORATION WITH EXTERNAL BODIES

The Department is embarking on collaborations with the Ministry of Education to strengthen the teaching of Mathematics at the SHS level and also with the Ghana Statistical Services to help execute the 2010 census.

NATIONAL AWARD

In a national competition to promote the use of mathematics by students for solving socio economic problems, the KNUST Mathematics Department was adjudged National Best Mathelete for 2010 and received a plaque and a prize of three thousand (3000) Ghana Cedis.

RESEARCH

Research interests of academic staff currently include Algebra, Complex Analysis, Functional analysis, Topological Dynamics, Numerical Analysis, Heuristics, Mathematical Physics, Optimization and Control as well as Mathematical Modelling using differential equations, difference equations, wavelets and statistical and stochastic approaches.

DEPARTMENT OF PHYSICS

INTRODUCTION

The Department of Physics came into being in 1961. It has over the years succeeded in realizing its sole mission of producing high calibre and competitive physicists who do not only contribute immensely to the development of the country but also fit very well into the global physics community.

The Physics programme at KNUST is unique in the sense that it is a professional course whereby physics is the main or major programme throughout the four years duration. This is in sharp contrast to physics programmes at other universities in the country where physics becomes major programme only in the third or final year.

ACADEMIC PROGRAMMES

New Programme In Meteorology and Climate Science

In August, 2008, a new undergraduate degree programme in Meteorology and Climate Science was introduced in the Department of Physics. The objective of the programme is to build human capacity by training and producing graduates with the following qualities:

- High quality fundamental physical sciences
- Up to date current meteorological knowledge and skills including forecasting, experimental, theoretical and research techniques
- Expert knowledge in the physical climatic processes of tropical Africa
- Social, economic and management qualities

Degree Programmes in The Department of Physics

The following degree programmes are offered in the Department of Physics:

- BSc (Physics)
- BSc (Meteorology and Climate Science)
- MSc (Physics) – Materials Science
- MSc (Physics) – Solid State Physics
- MSc (Physics) – Nuclear Physics (including specialisation in Medical Physics)
- MSc (Geophysics)
- PhD in any of the above areas

However, MSc programmes in Environmental Physics (Atmospheric Physics Option) and Meteorology are being developed.

STAFF STRENGTH

The Department has a teaching staff strength of sixteen (16) as follows:

Professors	-	3
Associate Professors	-	1
Senior Lecturers	-	2
Lecturers	-	10

The Department also has thirteen (15) non-teaching staff.

STUDENT NUMBERS:

The total student number is 411

BSc Physics

First Year	-	106
Second Year	-	91
Third Year	-	72
Fourth Year	-	87
Total		356

BSc Meteorology and Climate Science

First year	-	14
Second Year	-	12
Third Year	-	9
Total		35

Postgraduate Students

MSc/MPhil	-	15
PhD	-	5

ACTIVITIES

Teaching

Undergraduate Programme

Quite recently, the physics programme was restructured with the objective of laying more emphasis on the applications of the subject to reflect the needs of society, thus making the trained graduates more marketable on the job market. In the third year of the programme, the students take common core courses in physics in addition to their chosen areas of specialisations in one of the following:

- Physics with Biomedical Physics
- Physics with Electronics

- Physics with Geophysics
- Physics with Materials Science

The restructuring is in line with the Department's objective of reacting to the changing trends in socio-economic developments both at the national and global levels.

Postgraduate Programme

The Department also offers a postgraduate programme, which is applied physics-based, in the following areas:

- Condensed Matter Physics (Solid State Physics and Materials Science)
- Applied Geophysics
- Applied Nuclear Physics
- Environmental Physics
- Medical Physics
- Soil Physics
- Theoretical Physics
- Electronics

WHITTAKER SCHOLARSHIP AWARD

The Department of Physics continues to benefit from the Whittaker Scholarship Award for female students, due to the generosity of the late Mrs. Rose Whittaker who bequeathed a sum of money for the scholarship in memory of her husband.

MODERNISATION OF THE PHYSICS LABORATORIES- TURNKEY PROJECT

As part of the Turnkey Project to modernise the basic sciences laboratories of the College of Science, the Department of Physics has received some modern equipment (state-of-the-art) for the following laboratories:

- General Physics Labs I and II
- General Physics Lab III
- General Physics Lab IV
- Modern Physics
- Optics
- Geophysics
- Nuclear Physics
- Materials Science
- Engineering Physics

The Department of Physics has benefitted immensely from the Turnkey Project. The students are very happy that they have been exposed to the use of modern scientific equipment for their practical training.

RESEARCH IN THE DEPARTMENT OF PHYSICS

Senior Members (teaching staff) of the Department have been engaged in research activities in the following areas:

Geophysics

- The use of electrical resistivity tomography to map the inner crater geometry of the Lake Bosumtwi impact crater to obtain additional constraints for modeling the impact direction

and impact process; this will answer some questions, for example, why the suevites are found at only two locations outside the crater (i.e. at the NE and SW locations).

- Monitoring of possible soil and groundwater contamination due to the use of fertilizers and pesticides in tomatoes and vegetables growing areas in the Ashanti Region
- The use of petrophysics, core analysis, logging and computation of synthetic seismograms to assess the hydrocarbon potential of the Tano Basin
- Applications of geophysics in mineral and groundwater exploration
- Solutions to geophysical inverse problems

Solid State Physics

Semiconductor materials and their applications in photovoltaics

Materials Science

Microstructural characterization of metals and alloys

Environmental Physics

Monitoring of soil pollution in the Suame-Magazin area using x-ray fluorescence (XRF) spectroscopy methods

Meteorology, Climate Science, Atmospheric Physics and Satellite Remote Sensing

- Trends in precipitation and temperature in climate change over sub-saharan Africa. A case study of Ghana
- Retrieval studies of atmospheric compositions (trace gases and aerosol particles) i.e. remote sensing of trace gases
- Impact of night time NO_x (NO₂ and NO₃) on ozone depletion and total global ozone budget, diurnal variability of NO_x
- Measurement and monitoring of meteorological parameters (rainfall, relative humidity, minimum and maximum temperature, heat flux, etc.) for long term trend analysis.
- Impact of human activities on the biogeochemical cycle
- Understanding how anthropogenic perturbations have altered the Earth climate system leading to global warming (i.e. variability in the Earth's climate system and prediction (modeling) of the expected changes.
- Air quality (pollution) study from retrieved vertical column of tropospheric O₃, NO₂ and aerosol particles from DOAS over Accra – Tema industrial area, Ghana.

Research Collaboration/Research Grant

The Department of Physics and the Department of Clinical Microbiology of the School of Medical Sciences (SMS) are collaborating with the Universities of Liverpool, U.K., Cologne, Germany and the International Centre for Theoretical Physics (ICTP) on an EU-funded research project on “Quantifying Weather and Climate Impacts (QWeCI) on Malaria incidence and prevalence in Ghana”. The project is funded within the Seventh Framework Programme (FP7) of the European Union and a total of Euro 155,433.00 has been approved for the project for a three year period.

DONATION OF EQUIPMENT FOR THE METEOROLOGY AND CLIMATE SCIENCE PROGRAMME

The Institute of Geophysics and Meteorology of the University of Cologne, Germany has donated some equipment worth Euro 30,000.00 for the Meteorology and Climate Science programme. The donation forms part of the research collaboration between the German University and the

Department of Physics. It is aimed at strengthening the practical field work requirements for the Meteorology and Climate Science programme, as well as facilitating the involvement of researchers in the Department in the new EU-funded FP7 project, of which University of Cologne is a partner. The donation is a big boost to the Meteorology and Climate Science programme.

DONATION OF TELESCOPE TO DEPARTMENT OF PHYSICS

At the initiative of the Provost of the College of Science, Prof. Aboagye Menyeh, a UK-based NGO ‘West African Science Education Foundation’ in collaboration with the Grimstone Foundation (UK) and the Ghana Planetarium (Accra) visited KNUST and donated one Heritage 130P telescope and two astronomical binoculars to the Department of Physics and the Physics Students Association (PHYSAG) during an extra-curricular presentation on astronomy. The telescope is equipped with a Parabolic Primary Mirror and will provide views of both the Moon and Planets as well as Deep-Sky Objects. The high-powered binoculars are ideal for scoping the night sky and observing the Moon and Planets. The telescope will be used to view the planetary bodies and, therefore, ship up the enthusiasm in students to take interest in the study of Astronomy. Plans to introduce Astronomy in the Physics curricula are far advanced.

UP – COMING EVENT: THE 2ND EWIEM NIMDIE INTERNATIONAL SUMMER SCHOOL AT KNUST

The Department of Physics, in collaboration with the International Centre for Theoretical Physics (ICTP), Trieste, Italy, the Ghana Meteorological Agency (GMet) and the universities of Reading and Leeds, U.K., will organise the 2nd Ewiem Nimdie International Summer School at KNUST from 19th – 31st August, 2010. The theme of the Summer School was “**Weather and Climate Forecasting in Africa and its Application to Agriculture & Water Resource Management**”.

Following the successful organization of the first summer school in 2008, this summer school aims at bringing students, researchers and forecasters from Africa and around the world to participate in field studies and lectures and practical exercises in

- West African Meteorology and Climate
- Short range forecasting and seasonal forecasting
- Applications in Agriculture & Water Resource Management

Participation

The Summer School is open to scientists, young researchers and PhD students working in areas of Atmospheric Physics, Meteorology, Climatology, Agricultural and Environmental Sciences. Procedure for application and all informal enquiries should be directed to the website or web link: <http://www.ewiem-nimdie.org/>

COLLEGE OF SCIENCE LIBRARY

The College of Science Library is located within the Theoretical and Applied Biology block, and serves the informational needs of both students and staff within the College and occasionally, of other users from outside the College. In addition to the main College library, there are six(6) satellite libraries. These are in the various Departments of the College.

STOCK

The Library’s stock as at the end of the 2008/2009 academic year stood at 12,572. These include books from the various departmental libraries. The breakdown of stock is as follows:

Theoretical and Applied Biology	1931
Chemistry	2036

Biochemistry and Biotechnology	1377
Optometry	591
Computer Science	1097
Physics	1833
Mathematics	2331
College of Science	1376

DONATIONS

Mr. Raphael Yankey of USA donated thirty (30) books and twelve (12) journals through the Faculty of Biosciences to the Library.

Dr. Isabella Louis, a Visiting Lecturer of the Department of Biochemistry and Biotechnology also donated four (4) books to the College Library.

Prof. P.N.T. Johnson and Dr. J. P. Adjimani donated eleven (11) books through the Department of Biochemistry and Biotechnology to the College Library.

The Computer Science, Mathematics, and Biochemistry and Biotechnology Departmental libraries benefited from assorted books donated by Kingdom Books.

ACQUISITION

One hundred and eighteen (118) new books were acquired by the College during the period under review.

JOURNALS/MAGAZINES

The Department of Optometry regularly supplied the Library with current issues of the newsletter '*Optometry Today*'. In addition, the Library subscribed to two magazines: '*New African*' and '*AfricanBusiness*'.

NEWSPAPERS

The Library subscribed, on a regular basis, to the Daily Graphic, the Ghanaian Times, The Mirror, The Spectator and The Chronicle.

PROJECT WORKS

Final year project works were added to previous ones in the Library. With the demand for space, the Library is working towards acquiring soft copies of project works in the near future, in order to decongest the Library.

EQUIPMENT

The Library has the following equipment:

Two (2) computers

Two (2) printers

One (1) Scanner

One (1) Photocopier (Commercial)

One (1) Comb binder (Commercial)

WORKSHOP

The Library organized a workshop on 'E Resource Usage' for academic staff of the College on 22 January 2009.

INSTITUTE OF DISTANCE LEARNING

INTRODUCTION

The Institute of Distance Learning (IDL) was established as the Faculty of Distance Learning (FDL) in 2005, under the then College of Science to deliver programmes of study of both on-going and new ones from all colleges of the University in the distance learning mode. In 2007, the FDL was relocated from the College of Science and renamed the IDL, with much more leverage and authority.

Distance Education was adopted as a viable complement to the conventional face-to-face education and is expected to provide students within and outside Ghana, access to education and training provided by KNUST. In line with its vision of increasing access to relevant and flexible tertiary and continuing education and training anytime, anywhere, through the distance mode, the institute has adopted measures, within the last five years aimed at increasing its area of coverage, programmes and courses on offer and its student population. The effort has since yielded some positive results as illustrated in this Report.

DEPARTMENTS

The Institute of Distance Learning currently comprises two Departments: The Centre for Distance and Continuing Education (CDCE); and the Kumasi Virtual Centre for Information Technology (KVCIT).

DEANSHIP AND HEADSHIP POSITIONS

The following persons held administrative positions in the Institute during the year under review.

Prof. E. Badu	-	Dean, and Head, KVCIT
Dr. C. K. Osei	-	Head, Centre for Distance and Continuing Education
Mr. Isaac Adu-Brenya	-	Assistant Registrar
Mr. J. Gamba	-	Accountant

STAFF STRENGTH

The Institute has two categories of staff, made up of permanent KNUST and temporary staff. The permanent University staff comprise of ten senior members, made up of one Associate Professor, one Senior Research Fellow, seven Research Fellows, one Assistant Registrar and an Accountant. In addition, there is a supporting staff of fifteen senior and junior staff.

The Institute's facilitators are KNUST faculty members in the respective course areas as well as people with the requisite backgrounds and qualifications at the centres, who are recruited to facilitate in the various courses. During the period under review, a total of 350 facilitators were engaged to handle courses in the Institute's five postgraduate and eight undergraduate programmes.

The Institute is partially understaffed in the area of its core staff. Considering the increasing number of programmes/courses on offer and the corresponding student numbers, the University would have to look critically at posting additional staff to the Institute to ease the heavy load on staff.

LEARNING CENTRES

From a minimum of two Learning Centres, Accra and Kumasi in 2005, the Institute currently, provides facilitated face-to-face sessions at seven Learning Centres. The other centres are - Ho, Koforidua, Takoradi, Sunyani and Tamale. An eighth learning centre in Cape Coast will be opened at the start of the 2010/11 academic year to cater for mainly CEMBA/CEMPA students. A plan for the establishment of a Bolgatanga and Wa centres is also in the pipeline.

The Accra and Kumasi centres provide the bulk of Institute's students. During the year under review, the two centres provided 71.7% of the total registered students (Table 1) and the trend is expected to continue into the future for obvious reasons.

Table 1: Percentage Share of IDL Students by Centre (2009/2010)

Centres	Undergraduates	Postgraduates	Total	Percentage
Accra	463	583	1,046	40.6
Kumasi	358	598	956	31.1
Takoradi	-	163	163	6.3
Sunyani	-	113	113	4.3
Ho	-	105	105	4.1
Koforidua	-	96	96	3.7
Tamale	-	95	95	3.6
TOTAL	821	1,754	2,575	100

The Dean's office runs the Kumasi centre as well as the general coordination of all the centres. The KNUST Accra representative, and the Assistant Registrar at the Sunyani campus doubles as Coordinators at the respective centres. The Koforidua, Ho, Takoradi and Tamale centres are run by staff of Polytechnics in the respective cities, appointed by the Institute. The University has approved the appointment of an Assistant Registrar to serve as IDL's Accra Centre Coordinator. It is expected that permanent University staff would, similarly be appointed Centre Coordinators at all IDL centres.

STUDENT POPULATION

The Institute has witnessed an increasing trend in student enrollment over the last five years. With less than 300 in 2005, IDL recorded a student population of 2,575 during the 2009/2010 academic. This comprised of 1,754 postgraduate and 821 undergraduate students (Table 1). The student population is expected to increase further to about 3,500 in the 2010/2011 academic year and the general trend of annual increase is expected to continue into the next four to five years.

A major challenge to the increasing number of students is securing more classroom space at our centres, particularly in Accra and Kumasi. It is hoped that when the IDL's Accra and Kumasi building complexes (work on which on are about to start) are ready, the space problem would be a thing of the past.

PROGRAMMES

The Institute currently runs a total of nine undergraduate and five postgraduate programmes. Student enrolment in these programmes by centre and year of study is presented in tables 2 and 3.

Undergraduate Programmes

The Institute's Undergraduate Programmes are run at the Accra and Kumasi centres only. During the 2009/2010 academic year, 821 students were registered under the nine programmes (Table 2).

Table 2: Undergraduate Programmes by Centre and Registered Students (2009/2010).

Undergraduate	Centre	No. of Students				
		Year I	Year II	Year III	Year IV	Total
BSc Actuarial Science	Accra	22	19	-	-	41
	Kumasi	12	11	-	-	23
BSc Computer Engineering	Accra	25	12	20	18	75
	Kumasi	23	17	16	16	72
Building Technology	Accra	-	-	08	07	15
	Kumasi	-	-	21	14	35
BSc Construction Tech & Mgt.	Accra	27	12	-	-	39
	Kumasi	17	13	-	-	30
BSc Quantity Surveying and Construction Economics	Accra	40	35	-	-	75
	Kumasi	31	18	-	-	49
BA Sociology and Social Work	Accra	25	-	-	-	25
	Kumasi	19	-	-	-	19
* BSc Computer Science	Accra	27	-	-	-	27
	Kumasi	11	-	-	-	11
* BSc Electrical/Electronic Eng.	Accra	123	-	-	-	123
	Kumasi	87	-	-	-	87
* BSc Telecommunication Eng.	Accra	43	-	-	-	43
	Kumasi	32	-	-	-	32
TOTAL		564	137	65	55	821

**** Top-up Programmes.***

Top-Up Programmes

The Institute is shifting emphasis from the four year BSc. /BA. programmes to a two years Top-Up programmes, targeting HND holders. During the year under review the Institute introduced three of such programmes (Table 2). A first batch of three hundred and twenty one (321) students was admitted in December 2009, to start a semesters' bridging course from January to May, 2010. Successful students, after the bridging course are expected to start from the third year when the 2010/2011 academic year starts.

Postgraduate Programmes

The following are the postgraduate programmes currently on offer:

MSc Commonwealth Executive Masters in Business Administration (CEMBA)

MSc Commonwealth Executive in Public Administrative (CEMPA)

MSc Environmental Science

MSc Industrial Mathematics

MSc Post Harvest Technology

The CEMBA/CEMPA Programmes are currently run in all the seven learning centres and are the most patronized. During the year under review the two programmes recorded a student population of 1430 (56%) of the entire student population, with the concentration in Accra and Kumasi centers (Table 3).

Table 3: Postgraduate Programmes by Centre and Registered Students

Postgraduate	Centre	No. of Students		
		Year I	Year II	Total
CEMBA/CEMPA	Accra	288	134	422
	Kumasi	219	196	415
	Takoradi	113	51	164
	Sunyani	62	51	113
	Ho	54	51	105
	Koforidua	59	37	96
	Tamale	77	18	95
MSc Environmental Science	Accra	48	-	48
	Kumasi	65	-	65
MSc Industrial Mathematics	Accra	65	48	113
	Kumasi	60	40	100
MSc Post Harvest Technology	Accra	-	-	-
	Kumasi	18	-	18
TOTAL		1128	626	1754

The MSc Environmental Science and Industrial Mathematics Programmes are run only at the Accra and Kumasi centers. The two programmes recorded a student's population of 113 and 213, respectively in 2009/2010 academic years. The MSc Post Harvest Technology Programmes runs at the Kumasi center only. It recorded a student population of 18 under the year under review

COLLEGES WITH PROGRAMMES ON OFFER

The Institute currently runs programmes of the following Colleges/Departments(Table 4).

Table 4: Colleges/Departments with Programmes on Offer 2009/2010

College	Programmes	
	Undergraduate	Postgraduate
1. Agriculture and Natural Resources	-	MSc. Post Harvest Technology (Horticulture) (Since 2009/2010)
2. Arts and Social Sciences	BA Sociology and Social work (Since 2009/2010)	-
3. Architecture and Planning	a. BSc Building Technology (since 2006/2007) b. BSc Quantity Surveying & Construction Economics (since 2008/2009) c. BSc Construction Technology and Management (since 2008/2009)	-
4. Engineering	a. BSc Computer Engineering (since 2006/2007) *b. BSc Electrical and Electronic Engineering *c. BSc Telecommunication Engineering	-
5. Science	BSc Actuarial Science (since 2008/2009) * BSc Computer Science	MSc Industrial Mathematics (since 2008/2009) MSc Environmental Science (since 2009/2010)

*** Top-Up Programmes**

Pipeline Programmes

Preparations are underway for the under listed programmes to start within the next year or two, depending on how early the Departments concerned are able to get the Course Materials for the courses under their respective programmes ready.

Table 5: IDL Pipeline Programmes 2009/2010

College/Department	Programme(s)	
	Undergraduate	Postgraduate
Arts and Social Sciences		
a) Department of Publishing Studies	Proficiency certificate Programme in <ul style="list-style-type: none"> - Print Production - Book Selling - Visual Conceptualization - Mass Communication 	(i) Postgraduate Diploma in Publishing Studies (1year) (ii) Masters in Publishing Studies (2 years)
b) Department of General Arts Studies	-	(i) Graduate Diploma in Education (ii) Masters in Education
Arch. and Planning		
Department of Building Technology.	a) CTM (<i>Top Up</i>) b) QSCE (<i>Top Up</i>)	
College of Engineering.	a) Mechanical Eng. (<i>Top Up</i>) b) Civil/Geomatic (<i>Top Up</i>)	
Business School	BBA (<i>Top Up</i>)	

GRADUATION

During the year under review, the first batch of nine (09) MSc. Industrial Mathematics and fifty-eight (58) Commonwealth Executive Master of Business Administration (CEMBA) students, who successfully completed their programmes graduated.

VISITS

In February, 2009, the National Accreditations Board (NAS) visited the Institute on a review mission of the CEMBA/CEMPA Programmes. Consequently, the institute received its accreditation certificates for the two programmes in January, 2010.

DONATIONS

During the year under review the Institute received the following donations:

- One Split Air Conditioner with pipes from the HFC Bank;
- A Computer and its accessories from the Intercontinental Bank;
- Books and Journals, from the Centre for Africa Resources Research and Development (CARRD), UK.

PHYSICAL INFRASTRUCTURE DEVELOPMENT

All is set for work to start on a new Institute of Distance Learning building complex, comprising of classrooms and offices in Accra at the old KNUST Accra Guest House. Similarly, five KNUST

residential facilities located at Nhyiaso, Kumasi have been handed over to the Institute to be developed into a KNUST City Campus, to serve as offices and classrooms for the IDL. Preparations are far advance for work to start on the projects before the end of the year. It is believed that when these projects were completed, one of the Institute's major challenges- office and classroom space would be resolved.

CENTRE FOR DISTANCE AND CONTINUING EDUCATION

INTRODUCTION

The Centre for Distance and Continuing Education (CDCE) is one of the two Departments under the Institute of Distance Learning (IDL). CDCE activities for the year 2009/10 covered two main areas; the Proficiency Certificate in Architectural Draughtsmanship (PCAD) Programme and Course Material Development for Distance Learning students.

COMMUNITY SERVICE / CONFERENCES, SEMINARS AND WORKSHOPS

Dr. C.K. Osei

Community Service

University

Representative of the Centre for Distance and Continuing Education (CDCE) on the Academic Board of KNUST (2008 to 2010)

Representative of the Centre for Distance and Continuing Education (CDCE) on the Institute of Distance Learning Board of KNUST (2008 to 2010)

Member, Disciplinary Committee appointed to investigate examination malpractice at IDL.

Training Manager for KNUST-College of Agriculture and Natural Resources Technical Training Services Provision for the MIDA Programme (2009 till now)

National

Member of Root and Initiative Fund Committee of the Root and Tuber Improvement Programme (RTIMP) of the Ministry of Food and Agriculture (MoFA)

International

Providing mentorship to a UCC graduate student in the International AWARD Mentorship programme (2009 till now)

Conferences/Seminars and Workshops

Attended a Conference in Distance Education and Teacher Education in Africa (DETA) at UCC, Cape Coast, Ghana, August, 3rd-6th 2009

Mr. A.A. Saah

Community Service

University

Cognate Member (IDL), Faculty Board, Allied Health Sciences, KNUST (2009-2010)

National

Director/Board Member (Religious Content Quality), STARCOM Broadcast, Inc., Ghana (2009-2010)

International

- Reviewer, Five (5) Abstracts On the Theme: Community Development, Sub Theme: Community Based Learning And Outreach, PCF6, India (2010)
- Fellow, British Institute for Learning and Development, UK (2008-2010)
- Guest Speaker, “The Impact of Gender Dynamic on Deploying Community-based Resources for Development in Nigeria’s Year of Jubilee:
- Africa Coordinator, Disciple the Nations, USA (2000-2010)

Conferences/Seminars and Workshops

- Attended a Conference on Distance Education and Teacher Education in Africa (DETA) at UCC, Cape Coast, Ghana, August, 3rd-6th 2009
- Facilitator, Department of Publishing Studies, 2-day workshop for 12 Course Writers for the MA Publishing Studies program; 26th – 27th January 2010
- Facilitator, Department of Art Education, 2-day workshop for 12 Course Writers for the MEd program; 2nd -4th February 2010
- Participant, 2-day competency training, ScienceSoft and ScienceWord software Tutorial for word-processing by Novoasoft® China, TALIF Lab, KVCIT , IDL, KNUST (2009)

Mrs. R. Essel

Community Service

University

Representative of the Centre for Distance and Continuing Education (CDCE) on the Institute of Distance Learning Board of KNUST (2007-2010).

National

- Organising voluntary study skills workshop for students in some 2nd cycle Institutions and Teacher Training Colleges in Ghana.
- Marriage Counsellor for prospective couples and married couples.

Conferences/Seminars and Workshops

- Organized seminars for IDL MSc Industrial Mathematics 2008/2009 year group.
- Attended Course Writers training workshop for KNUST Staff of Art Education and Publishing and Studies.
- Participant, 2-day competency training, ScienceSoft and ScienceWord software Tutorial for word-processing by Novoasoft® China, TALIF Lab, KVCIT , IDL, KNUST (2009)

Rev. W. Owusu-Boateng

Community Service

University

- Examination Officer, Institute of Distance Learning
- Member, IDL Disciplinary Committee appointed.
- Member of IDL Board.
- Cognate member of Faculty of Physical Science Board.

Mr. J.A. Mensah

Conferences/Seminars and Workshops

Conference on Distance Education and Teacher Education in Africa (DETA), UCC, Cape Coast, Ghana: August, 3rd-6th 2009

ON-GOING PROJECTS

Proficiency Certificate in Architectural Draughtsmanship Programme (PCAD)

Activities are on-going to develop a two-tier programme out of the current Proficiency Certificate in Architectural Draughtsmanship Programme (PCAD). The two-tier programmes will aim at training and educating draughtsmen and women to develop their knowledge and skills in building technology and graphic representation to perform effectively on their jobs and increase their earning power. Planned activities for 2010 include:

- An evaluation of the PCAD programme
- Stakeholders meeting on the PCAD programme
- Dialoguing with the National Executive Council of Association of Building Technicians

Material Production Unit (MPU)

The Material Development Unit will continue to edit and produce course materials in the distance mode. Emphasis will be on course materials being developed by the Departments of Art Education and the Publishing Studies. A course writer's training workshop will be conducted for the staff of the Business School. The current template for course writing in the distance mode is being reviewed based on the type of courses currently being run by IDL. The following will be produced to enhance the quality and delivery publication formats:

- (i) interactive web enabled CD ROMs to include video clips PowerPoint presentation by course writers, and
- (ii) availability of course materials on the Learning Management System (LMS) in the virtual classroom, www.kvcit.org

Coordination of IDL programmes

CDCE staff will continue to play roles such as coordination of DL programmes and Centres, facilitation of DL courses and teaching in the regular courses and any other assigned roles by IDL.

KUMASI VIRTUAL CENTRE FOR INFORMATION TECHNOLOGY (KVCIT) INTRODUCTION

The Kumasi Virtual Centre of information Technology (KVCIT) is one of the two Departments under the Institute of Distance Learning (IDL). KVCIT activities for the year 2009/10 covered the following areas;

- Moderating the IDL's Learning Management System (e-learning platform), and the virtual classroom for distance learning students and facilitators;
- Certificated computer literacy programme
- Certified AUTOCAD Program for Architectural Draughtsmanship students from CDCE and elsewhere
- Establishment of multimedia laboratory for videoconferencing and audio visual communication for distance learning

Mr. S. Aggrey-Smith Community Service University

- Representative of Kumasi Virtual Centre of Information Technology (KVCIT) on the Institute of Distance Learning Board of KNUST (2008 to 2010)

- Representative of Institute of Distance Learning (IDL) on the Open Educational Resources(OER) Committee

International

Examiner for West Africa Examination Council

Conferences/Seminars and Workshops

Participant, 2-day competency training, ScienceSoft and Science Word software Tutorial for word-processing by Novoasoft® China, TALIF Lab, KVCIT , IDL, KNUST (2009)

Mr. Henry Kofi Mensah

Community Service

University

- Representative of Kumasi Virtual Centre of Information Technology (KVCIT) on the Institute of Distance Learning Board of KNUST (2008 to 2010)
- Representative of Institute of Distance Learning (IDL) on the Open Educational Resources(OER) Committee

ON-GOING PROJECTS

Computer Literacy Program/AUTOCAD Program

Plans are ongoing to expand the Computer literacy programme and the AUTOCAD Programme at KVCIT.

Coordination of IDL programmes

KVCIT staff will continue to play roles such as coordination of IDL programmes and Centres, facilitation of DL courses and teaching in the regular courses and any other assigned roles by IDL.

SCHOOL OF GRADUATE STUDIES

INTRODUCTION

The Board of Postgraduate Studies which was established in 1974 was elevated to the status of School in 2002, following restructuring by the University Council, to enable it face the present challenges of Graduate Studies in the country.

The main objective of Graduate studies at KNUST is the training and development of higher degree graduates to acquire specialized skills in Science and Technology. Besides, such graduates would be enabled to provide appropriate research initiative and leadership in industry, commerce and other sectors of the national economy.

Efforts are being made in the Departments and Faculties to develop graduate programmes, which are relevant to the promotion of economic, social, scientific and technological advancement of Ghana.

It is noteworthy that material and human resources are being mobilized to ensure maximum utilization of available potential.

GRADUATE PROGRAMMES OFFERED

Among the graduate programmes offered by KNUST are: Agriculture, Mathematics, Engineering, Physics, Silviculture and Forest Management, Chemistry and Art. The school offers the following degrees in various fields of discipline:

- Graduate Diploma
- Master of Science
- Master of Arts
- Master of Philosophy
- Master of Fine Art
- Master of Pharmacy
- Master of Public Health
- Master of Business Administration
- Master of Executive Master of Business Administration
- Master of Commonwealth Executive Master of Business Administration
- Master of Architecture
- Doctor of Philosophy

ENROLMENT AND GRADUATION

The total graduate student enrolment stands at 3,904, out of which 2,365 were admitted in the 2009/2010 academic year.

The table below shows registered graduate student population in the various Colleges and Institute of Distance Learning (IDL).

COLLEGE	NO. OF STUDENTS
AGRIC & NATURAL RESOURCES	166
ARCHITECTURE & PLANNING	327
ART & SOCIAL SCIENCES	1,131
ENGINEERING	213
HEALTH SCIENCES	195
SCIENCE	190
INSTITUTE OF DISTANCE LEARNING	1,683
TOTAL	3,904

The tables below also show the number of graduate students who successfully completed their programmes and were awarded higher degrees.

November, 2009

SUMMARY	MSC	MPHIL	MA	MFA	MBA	CEMBA	M.PHARM	MArch	PhD	PGD	TOTAL
COLLEGE OF AGRIC AND NATURAL RESOURCES	8	2	-	-	-	-	-	-	-	-	10
COLLEGE OF ART AND SOCIAL SCIENCES	-	7	7	1	152	-	-	-	1	-	168
COLLEGE OF ARCHITECTURE AND PLANNING	27	2	-	-	-	-	-	6	-	42	77
COLLEGE OF ENGINEERING	40	4	-	-	-	-	-	-	-	-	44
COLLEGE OF HEALTH SCIENCES	6	-	-	-	-	-	2	-	-	8	16
COLLEGE OF SCIENCE	15	-	-	-	-	-	-	-	2	-	17
INSTITUTE OF DISTANCE LEARNING	-	-	-	-	-	58	-	-	-	-	58
Osei Tutu II Institute of Advanced ICT Studies (Affiliated to KNUST)	12	-	-	-	-	-	-	-	-	-	12
TOTAL	108	15	7	1	152	50	2	6	3	50	402

June, 2010

<u>SUMMARY</u>	MSC	MPHIL	MA	MFA	MBA	MPH	CEMBA	M.PHARM	MArch	PhD	PGD	TOTAL
COLLEGE OF AGRIC AND NATURAL RESOURCES	20	3								7		30
COLLEGE OF ART AND SOCIAL SCIENCES		11	14	1	126					4		156
COLLEGE OF ARCHITECTURE AND PLANNING									1		6	7
COLLEGE OF ENGINEERING	37	5								1		43
COLLEGE OF HEALTH SCIENCES	38	5				40				1		84
COLLEGE OF SCIENCE	58	8								2		68
INSTITUTE OF DISTANCE LEARNING							32					32
TOTAL	153	32	14	1	126	40	32	-	1	15	6	420

NEW PROGRAMMES APPROVED

The school approved the running of the following new programmes to support existing ones:

- Master of Laws (LLM)
- Master of Philosophy in Urban Management Studies
- Doctor of Philosophy in Soil Science

However, these are yet to be ratified by the Academic Board. Other programmes are being discussed by the School for eventual approval by the Academic Board.

ADDITIONAL STAFF REQUIRED

Vice-Dean

Two Administrative Assistants

ACTIVITIES

The Board, which acts as Auditor to all the Departments which run Graduate programmes in the University, performs among other duties, the following;

- Co-ordinates and liaises with the Central Administration, Colleges, Faculties, Institutes and Departments on general Graduate issues.
- Sells, receives and processes applications for prospective applicants.
- Organises interviews for applicants seeking admission into various programmes, issues admission letters and register students for the programmes into which they have been admitted.
- Organises seminars for students and members of staff on graduate issues.

- Receives and approves thesis synopsis, examination results, proposals for new programmes, withdrawal of non-performing students as well as assisting brilliant and hardworking students to climb high, the ladder of academic success.
- Screening and appointment of External and Internal Examiners for Departments.
- Organises and conducts oral examinations for final year graduate students to defend their theses, which is one of the major activities of the school.
- We finally conduct Board meetings to approve examination results, award of degrees and present graduating students at congregation.

WORKSHOP

It needs to be stated that during the year under review, the School of Graduate Studies started graduate admission online. The School therefore, organised a day's workshop for Heads of Departments and Programme Coordinators on procedure for online admission on 12th May, 2010, and it was very successful.

INTERNATIONAL AFFILIATIONS

The establishment of links with institutions for postgraduate studies elsewhere to encourage the mounting of joint programmes of research and study through the exchange of students, staff use of facilities for our mutual benefit is most welcome. A few of such links are already in place. Among them are, the Master of Science programme (MSc) in Development Planning and Management which is run jointly by the University of Dortmund, Germany, and the Master of Science programme in Geo-Information Services and Natural Resources Management also jointly run by the I.T.C. of Netherlands and the KNUST Faculty of Natural Resources and the Department of Geomatic Engineering.

There is still room for many more linkage programmes for interested Institutions and organizations. They are, therefore, welcome.

CONCLUSION

Although the School has been housed in the Chemistry block, the facility does not resolve the accommodation problem. The Secretariat requires a more spacious office accommodation than what we have now.

At the last congregation, there were some encouraging signals that within the foreseeable future the construction of a building for the School of Graduate Studies will be commissioned. We hope this promise will soon be fulfilled.

THE UNIVERSITY LIBRARY

INTRODUCTION

The University Library has been in existence since 1952, when the Kumasi College of Science and Technology was established. The library stock of the Teacher Training Department of Achimota College, numbering 4,000 volumes, was transferred to Kumasi to form the nucleus of the library of the newly-established Kumasi College of Science and Technology at its inception in 1952. By August 1961, when the Kumasi College of Science and Technology was elevated to full university status, the library's stock had increased to over 20,000 volumes.

The introduction of the Collegiate System at KNUST in January 2005 made the KNUST Library System to comprise of the Main Library and the six College Libraries, which were formerly Faculty/Institute Libraries.

During the 2008/2009 academic year, the KNUST Library System lived up to its core business of acquiring, processing, organizing and disseminating relevant, quality, timely and appropriate information in both print and electronic formats to enhance teaching, research, learning and entrepreneurship training in the University.

BOOKSTOCK

In the 2008-2009 academic year, the total number of books which were added to the stock of the Main Library was 1,543. Out of this number, 687 were received as donations, 48 were legal deposits, 344 constituted purchases from both local and foreign sources, while 464 were graduate theses. The bulk of the donations was from the United Nations and its affiliates like the FAO, WHO, ILO and UNESCO.

PRINT JOURNALS

During the period under review, the Main Library subscribed to 203 peer-reviewed journals under the Association of Commonwealth Universities' Protecting the African Library scheme. The scheme, which has been in operation since 2002, enables university libraries whose parent institutions are accredited members of the Association of Commonwealth Universities, to subscribe to some academic journals from leading European and American publishers at concessionary rates. Apart from the journals subscribed under the ACU-PAL Scheme, the Main Library subscribed to 20 locally published journals, bringing the total number of foreign and local journal subscriptions to 223.

ELECTRONIC JOURNALS

The University Library is a member of the Consortium of Academic and Research Libraries of Ghana (CARLIGH). This has made it possible for all the libraries in the University, including the College Libraries, to access over 21,000 electronic journals from academic databases such as AGORA, HINARI, EBSCO, Host, OARE, Emerald, IEEE, Institute of Physics, Blackwell/Wiley, OUP, World Scientific, Science Direct and many more.

OTHER PUBLICATIONS

Some 137 other publications which included newsletters, bulletins, reports and conference proceedings were received as donations from the United Nations and its affiliates like the WHO, ILO, FAO and the USIS and British Council as well as some foreign missions. In all, the Main Library received 360 current print publications during the 2008/2009 academic year.

LOCAL NEWSPAPERS

The Main Library continued with the direct subscription to single copies of the Daily Graphic, The Mirror, Graphic Sports, Graphic Business and Graphic Nsempra from the Graphic Communication Group Limited. Besides, the Library received two complementary copies each of the first three newspapers from the Graphic Group. The Main Library also subscribed to single copies of The Ghanaian Times, The Spectator and The Pioneer.

The number of records entered into the local newspaper database was 4,097, bringing the total entries recorded so far to 50,210. The database served as a reliable source of primary information on current and past events for the university community, notably final year undergraduate and postgraduate students with project works and theses to present.

PROCESSING OF BOOKS

The Cataloguing Department processed 4,259 books and these were distributed to the various sections of the Main Library. The break-down was as follows:

Lending Department	-	546
Research Library	-	471
Undergraduate Library	-	1,811
Ghana Collection	-	447
Women's Studies Collection	-	34
Law Library	-	78
Faculty of Law Library	-	637
World Bank Publications	-	<u>102</u>
Total		<u>4,259</u>

A number of CD-ROMS and diskettes which accompanied some books were labelled and sent to the Electronic Information Department for use by patrons.

READER SERVICES

For the year under review, membership of users of the Library increased tremendously with the registration of 8,614 new members. These were users who would be eligible to borrow library books and other library related materials. All others could use the resources within the Library for reference only without registering to be members. The Circulation or Issue Desk continued to be the busiest access point in the Library. There were 9,113 books borrowed as compared to 8,585 books for the same period the previous year. This showed an increase of about 6.2% in borrowing activities.

REFERENCE AND RESEARCH SERVICES

The Reference and Research Services consists of the Undergraduate and the Reference and Research Libraries. The Undergraduate Library is a reserved collection of multiple copies of core or prescribed textbooks which may be consulted only within the library premises. The Reference and Research Library on the other hand, accommodates reference books in the programmes run by the University as well as general and specialized subject encyclopedias and dictionaries. Other materials in this section are yearbooks, calendars, directories, almanacs, handbooks and university prospectus.

A total number of processed books which the Undergraduate and Reference and Research Library received from the Cataloguing Department during the 2008-2009 academic year was 3,829.

The break-down was as follows:

Undergraduate Library	-	1,811
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Research Collection	-	471
Ghana Collection	-	447
Women's Collection	-	34
Theses	-	35
UN Publications	-	637
Law Library	-	<u>78</u>
Total	-	<u>3,829</u>

The Comparative figure for the same period the previous year was 2,292.

A total of 8,537 books were consulted during the year. Out of this 3,336 were temporary reference books, 1,934 materials in Ghana Collection and 2,867 theses.

ELECTRONIC INFORMATION SERVICES

The Electronic Information Department continued to perform its core functions by providing access to a number of e-resources, offering printing, email and internet services, carrying out Selective Dissemination of Information (SDI) for clients and organising user education programmes for library users.

Within the period under review, the Library, through the department, provided access to over 30 databases, a greater percentage of which came through INASP under the PERI initiative. The Consortium of Academic and Research Libraries of Ghana (CARLIGH) continued to play a leading role in negotiating for reasonable subscription fee and payment terms on behalf of its members, which included the KNUST Library.

During the period, a total of 2,930 requests were made and 34, 475 full text documents accessed to meet these requests. These full text documents did not only come from the subscribed online databases, but also from sources such as Google Scholar and other important but free resources on the web.

Two important databases, Science Direct and World Scientific Publications, were added to the list of e-resources accessible to CARLIGH members.

DEVELOPMENT INFORMATION CENTRE

The Development Information Centre continued to attract final year undergraduate and postgraduate students who were in dire need of current information on development-centred issues for their project works and theses writing. Lecturers and members of the general public also depended on the Centre for statistical data on Africa in particular and the world at large.

The power supply fluctuations experienced by the Library during the greater part of the previous year and which adversely affected access to the World Bank's e-Library and other important documents did not re-occur in 2008-2009. Consequently, clients enjoyed maximum access to the online resources available at the Development Information Centre. Currently, the Centre is stocked with 1,193 books, 417 Policy Research Working papers and 40 project appraisal documents apart from the over 4,800 materials of the e-Library.

KNUST INSTITUTIONAL REPOSITORY (KNUSTSpace)

The KNUST Institutional Repository (KNUSTSpace) was set up in February 2009 and had a test run for five months. It is mainly to manage and disseminate research materials created by the institution and its community members. It was opened to public use in July 2009 and is governed by a policy which has been approved by the University.

KNUST is currently the only university in Ghana with an IR. The KNUST IR has over 150 full text documents in pdf (JUST Publications) and 830 abstracts of postgraduate theses. Postgraduate students are enjoined to make online submissions of their theses to facilitate entry into the KNUSTSpace.

The KNUSTSpace is an Open Access IR and can be accessed through the major search engines or the URL <http://dspace.knust.edu.gh>

INCOME GENERATION

During the 2008-2009 academic year, the University Library generated income through e-mail services, photocopying, fines and fax operations as follows:

E-mail	-	GH¢ 87.70
Photocopying	-	GH¢3,654.42
Fines	-	GH¢1,026.94
Fax	-	<u>GH¢119.00</u>
Total		<u>GH¢4,888.06</u>

COLLEGE LIBRARIES

There are six College Libraries, which together with the Main Library constitute the KNUST Library System. Besides, the libraries of the College of Agriculture and Natural Resources, College of Health Sciences and College of Science operate satellite libraries in view of the long distances between their constituent faculties and departments.

The total book stock of the six College Libraries was 69,065 volumes during the 2008-2009 academic year. The break-down is as follows:

College of Agriculture and Natural Resources	-	5,351
College of Architecture and Planning	-	5,371
College of Art and Social Sciences	-	9,500
College of Engineering	-	19,023
College of Health Sciences	-	17,248
College of Science	-	<u>12,572</u>
Total		<u>69,065</u>

BOOK DONATIONS TO COLLEGE LIBRARIES

Some College Libraries were privileged to have benefited from book donations by individuals and groups during the review period.

College of Engineering Library received book donations from Dr. Francis Asamoah, IMME, and the Agricultural Engineering Department.

College of Science Library also received book/journal donations from the following:

Mr. Raphael Yankey, USA – 30 books and 12 journals through the Faculty of Biosciences. Dr. Isabella Louis, Visiting Lecturer, Department of Biochemistry and Biotechnology – 4 books. Prof. P.N.T. Johnson and Dr. J.P. Adjimani – 11 books through the Department of Biochemistry and Biotechnology.

The Head of Department of Optometry, Dr. (Mrs.) A. Amedo, supplied the College of Science Library with current issues of the journal, Optometry Today.

College of Agriculture and Natural Resources Library received 10 books from the Royal Netherlands Institute, KIT and ITC under the exchange programme entered into with the two Dutch institutes two years ago.

The College of Agriculture and Natural Resources Library was connected to the Lan TEEAL, a CTA-sponsored database which was installed during the 2008-2009 academic year. The Lan TEEAL contained 140 highly ranked agricultural and biological sciences journals, an off-line, entirely self-contained compilation of the most important journal literature in agriculture and related fields.

CONFERENCES/SEMINARS/WORKSHOPS

Mrs. Helena R. Asamoah-Hassan, University Librarian and Messrs Abednego Corletey, Raymond Osei Boadu and Daniel Ackuayi attended a 3-day Workshop organised by the Consortium of Academic and Research Libraries in Ghana (CARLIGH) on DSpace Software for use in setting up Institutional Repositories at the University of Ghana, Legon from 2nd – 4th September, 2008.

Messrs Raymond Osei-Boadu and Abednego Corletey attended a two-week planning workshop for user education at KNUST in Amsterdam, Holland from 15th – 26th September, 2008.

The University Librarian, Mrs. Helena R. Asamoah-Hassan attended an Information Literacy (Utter Education) Workshop at the University of Cape Town, South Africa from 4th – 6th October, 2008.

Mrs. Helena R. Asamoah-Hassan was invited by eIFL.net to serve as a Resources Person at a Consortium Building Workshop in Kathamandu, Nepal from 25th – 29th November, 2008.

The University Librarian, Mrs. Helena R. Asamoah-Hassan and Messrs K. Agyen-Gyasi and Victor Teye attended the INASP Workshop on Information Literacy for Librarians and Faculty at the UEW Library, Winneba from 14th – 16th January 2009.

Messrs Yaw Senyah and Abednego Corletey attended a one-day Workshop on Open Educational Resources (OER) Organised by the College of Health Science in Collaboration with the University of Michigan, Ann Arbor, USA; University of Cape Town, South Africa; University of Western Cape, South Africa; University of Ghana, Legon; OER Africa and the Hewlet Foundation at the Golden Tulip Hotel, Kumasi on Friday, 20th February, 2009.

Mr. Edward Mensah Borteye participated in a Workshop entitled: Producing, Preserving and Repatriating Digital Cultural Assets in Rhodes University, Grahamstown, South in December 2008 and another one on digitization organised by UNESCO in Accra from 9th – 13th March, 2009.

The University Librarian attended the 1st International Conference on African Digital Libraries and Archives at the Economic Commission for Africa (ECA), Addis Ababa, Ethiopia from 1st – 3rd July 2009.

Mrs. Helena R. Asamoah-Hassan attended the 9th UNESCO's International Advisory Committee for the Memory of the World Programme in Bridgetown, Barbados from 29th – 31st July 2009.

CONFERENCE PAPER

Mrs. Helena R. Asamoah-Hassan presented a paper titled “21st Century Librarianship in Ghana: Using the Internet and Creating Partnerships”, at a Workshop organised by the Information

Resource Center (IRC), Public Affairs Section of the US Embassy in Africa, in conjunction with the Ghana Library Association on Thursday, 16th April, 2009.

SERVICE TO THE COMMUNITY

The University Librarian, Mrs. Helena R. Asamoah-Hassan continued to serve as a member of the Governing Board of the International Federation of Library Associations and Institutions (IFLA) with its Headquarters in The Hague, The Netherlands. She also maintained her position as Board member of the Electronic Information for Libraries Network (eIFL.net) with its Headquarters in Rome, Italy.

Mrs. Helena R. Asamoah-Hassan continued to serve as a member of the Board of Governors of her alma mater, Konongo-Odumasi Senior High School and also as a Vice-President of the Ashanti Regional Branch of the Old Students Association.

Mr. Yaw Senyah continued to serve as a member of the Board of Governors of Church of Christ Senior High School at Ejisu-Adadientem.

Mr. Yaw Senyah remained as a member of the Management Committee of the University Printing Press (UPK).

CONCLUSION

The KNUST Library System provided relevant and quality information from both print and electronic sources to boost teaching, research, learning and entrepreneurship training at KNUST during the year under review. However, the various constituent libraries could have done better if such challenges as inadequate funding, poor infrastructure and unreliable internet access among others, had received the desired attention.