

COLLEGE OF AGRICULTURE AND NATURAL RESOURCES CONGREGATION REPORT

INTRODUCTION

The College of Agriculture and Natural Resources was established under statute 33 in October 2004, as one of the six colleges of the University, created under the collegiate system. Its mandate is 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:

FACULTIES

Faculty of Agriculture

Faculty of Renewable Natural Resources

Faculty of Forest Resources Technology

RESEARCH CENTRES

Bureau for Integrated Rural Development (BIRD)

Centre for Biodiversity Utilisation and Development (CBUD)

KNUST Dairy/Beef Cattle Research Station, Boadi

Agriculture Research Station, Anwomaso

COLLEGE ADMINISTRATION

The College administration consists of:

Provost	- R. C. Abaidoo, PhD
Ag. College Registrar	- Mr. Solomon Panford
Ag. College Accountant	- Mr. E. Appiah-Kubi
Ag. College Librarian	- Mr. E. K. Bani

FACULTY	NO. OF SENIOR MEMBERS		NO. OF SENIOR STAFF		NO. OF JUNIOR STAFF	
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
Provost's Office	4	0	1	2	3	0
Faculty of Renewable Natural Resources	27	4	14	7	13	3
Faculty of Forest Resources Technology	10	3	10	3	28	10
Faculty of Agriculture	34	7	13	4	23	9
BIRD	4	1	3	1	4	0
TOTAL	79	15	41	17	71	22

STAFF & STUDENT STATISTICS

The College has a student population of approximately two thousand seven hundred and fifty four (2,754), with one hundred and six (106) teaching and research staff, and one hundred and fifty one (151) supporting staff.

MAJOR ACTIVITIES

Physical Development

Funds have been allocated for the construction of Parking Lot for the Faculty of Renewable Natural Resources to accommodate the numerous vehicles that enter the compound. A three-storey building is being constructed at the Faculty of Agriculture premises under the Alliance for Green Revolution in Africa (AGRA) project. The building which is near completion, will serve as offices for the PhD postgraduate students who are under the sponsorship of the AGRA project.

COLLABORATIONS/LINKAGES/PROJECTS

(i) 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.

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

Background

The College of Agriculture and Natural Resources (CANR) since 2005 has been involved in the implementation of a Nuffic-funded Project on Institutionalisation 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 has developed 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 faculty 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 as 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 organised.

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 fall into four categories:

1. 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 Municipal Area.
2. 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
3. Young Ghanaian professionals – training men and woman as Agroforestry professionals for careers in the public and private sectors
4. 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 pemtandra* (4299), *Moringa oleifera* (57), *Gliricidia sepium* (400), oil palm (1500); at Dumesua *ceiba pentandra* (2400), *Terminalia superb* (2400), oil palm (1500) and 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 revitalised 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 COLLEGE

Among the numerous visitors to the College were:

1. Hamado Tapsoda, The McKnight Foundation
2. Jeff Quackenbush, RPI Troy, NY
3. Pedro Sanchez, Columbia University, New York
4. Marie Rarieya, AGRA-Accra
5. Braima James, IITA – Sierra-Leone
6. G.B. Kofi Kwakye, The Hague – The Netherlands
7. T.B. Bhebhe, CUT, Zimbabwe
8. Fred Davies, Texas A&M University
9. Wouter Verhoef, ITC Enschede

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 was established in 1953. As one of Ghana's major teaching and research centres, the Faculty continues to make significant contributions to the country's agricultural and economic development.

As a Faculty we embrace the advancement, preservation and respect of knowledge in agriculture and related sciences through teaching, research and scholarship to the benefit of the wider community. In addition, the Faculty provides educational opportunities at the tertiary level enabling students to attain knowledge, skills and intellectual independence and to develop their leadership potential with scientific and social awareness and sensitivity

The Faculty is made up of four academic departments viz. 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. The Faculty currently runs six (6) programmes, namely; BSc Agriculture, BSc Post Harvest Technology, BSc Agribusiness Management, BSc Dairy and Meat Science and Technology, BSc Landscape Design and Management, and BSc Agricultural Biotechnology. The undergraduate student population currently stands at 1,377, a 34% increase over the previous academic year undergraduate student population. Post graduate degree programmes in many disciplines of Agriculture are also on offer in the Faculty. This includes the KNUST-AGRA PhD Soil Science Programme which seeks to establish a Centre of Excellence at KNUST for the training of teaching and research scientists in Soil Sciences for the West Africa region with students drawn from Burkina Faso, Ghana, Mali, Niger and Nigeria.

STAFF STRENGTH

The Faculty has a teaching staff strength of forty-five (45) made up of six (6) Professors, five (5) Associate Professors, eleven (11) Senior Lecturers and twenty-four (24) Lecturers. The teaching staff is supported by competent technical, administrative and ancillary staff totaling about 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. S.C. Fialor	-	Vice Dean and Head, Dept. of Agric. Economics, Agribusiness and Extension
Prof. E.L.K. Osafo	-	Head, Dept. of Animal Science
Prof. R. Akromah	-	Head, Dept. of Crop and Soil Sciences
Dr. B.K Maalekuu	-	Head, Dept. of Horticulture

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.

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 the West Africa Agricultural Productivity Programme (WAAPP), Millennium Development Authority (MiDA), Agricultural Services Improvement Programme (AgSSIP), Root and Tuber Improvement Programme (RTIP), Root and Tuber Improvement and Marketing Programme (RTIMP), Export Development and Investment Fund (EDIF), Department for International Development (DFID) and Agri-Business in Sustainable Natural African Plant Products (ASNAPP) etc. 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:

- 1) Refurbishment of laboratories for the AGRA programme and 2) Rehabilitation of the Faculty's staff car park.

The Faculty also 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-organising itself to fully exploit its potential to generate more income. One such entry point is the establishment of the Finatrade/KNUST Model Farm project. In addition, plans have been put in place to go into partnership with private entrepreneurs with the aim of developing the Anwomaso Agricultural Station into viable agriculture ventures.

Installation of Internet Facilities at Animal Science and Horticulture Departments and Procurement of New LCD Projectors and Textbooks

The Faculty, in its effort to enhance information and communication technology in some of its Departments, has installed internet facilities at the Department of Animal Science. The internet facility at the Department of Horticulture, which had broken down, has also been repaired. In addition, the Faculty has procured 3 new LCD projectors to augment the number in the Faculty. The Faculty also procured various textbooks on Agriculture worth US\$ 2359.25 for its Library.

LINKAGE WITH OTHER UNIVERSITIES AND INDUSTRY

These are provided in the reports by the various departments.

Details of Benefactors and Donations received by the Faculty in 2009/2010 Academic Year

Finatrade Foundation offered scholarships worth seven hundred Ghana cedis annually to each of the best five second year students in the Faculty. The award ceremony took place on 23rd February 2011 at the Oak Plaza Hotel, Accra. The Faculty was represented by the Dean. In attendance were all current Finatrade Scholarship beneficiaries from KNUST. The Ghana Association of Students in Agriculture and Related Sciences (GAAS) donated a router worth GH¢600 to the Faculty to enhance accessibility to internet facilities. In addition, the GAAS executive awarded scholarships worth GH¢1000 to support 10 needy but brilliant students of the Faculty. The management of Council for Scientific and Industrial Research (CSIR) donated a computer and its accessories to the Faculty to support academic and research works. Various organisations and individuals including CTA (Netherlands), KIT (Netherlands), US Embassy, GAINS-INSTI-CSIR and the Provost, College of Agriculture and Natural Resources (Prof. R.C. Abaidoo) donated various textbooks and journals on Agriculture and related sciences to the Faculty. Arc. Rita Ngozi Obiozo, a Senior Lecturer (on Sabbatical Leave) at the Department of Architecture, KNUST also donated a book on Landscape Design. The Faculty wishes to express its appreciation to these donors for their acts of philanthropy.

VISITORS TO THE FACULTY

The following visited the Faculty during the year under review:

- | | | | |
|-----|--------------------------|---|---|
| 1. | Prof. K.I. Theron | - | University of Stellenbosch |
| 2. | Prof. R.C. Witthuhn | - | University of Stellenbosch |
| 3. | Mr. T.B. Bhebe | - | Chinhoyi University of Technology, Zimbabwe |
| 4. | Mr. Gur Katz | - | ATIG, Israel |
| 5. | Mr. P. Doron | - | Net Vision, Israel |
| 6. | Mr. Aaron Fishman | - | US Embassy, Ghana |
| 7. | Mr. Gary R. Blumenthal - | - | World Perspectives Inc., USA |
| 8. | Prof. F.T. Davies | - | Texas A&M University, USA |
| 9. | Mr. Chris Jackson | - | The World Bank, USA |
| 10. | Mr. Tom Gambrah | - | Premium Foods Limited, Ghana |
| 11. | Mr. Thomas W. Bello | - | Golden Web, Ghana |

DEPARTMENT OF AGRICULTURAL ECONOMICS, AGRIBUSINESS AND EXTENSION

INTRODUCTION

The Department continues to offer the essential overarching courses that prepare students to be able to fit and work in any of the sub-disciplines of agriculture on completion of their programme.

PROGRAMMES OFFERED

Apart from lecturers' participation in the regular B.Sc. Agric programme, and all the new programmes introduced in the Faculty, the Department continues to shape and run its highly subscribed BSc Agribusiness programme, which has just completed its second year. The final year BSc Agricultural Economics and Agricultural Extension specialisation remain an attractive option for students. The postgraduate programmes-MPhil and PhD in Agricultural Economics, continue to attract higher numbers of students than the Department can cope with. An MPhil programme in Agricultural Extension with content and focus directed at the current work force needs of the agricultural and rural development sectors of the country is being polished for submission to the existing regulatory and approval processes of the University.

STUDENT STATISTICS

The total number of regular post-graduate students stands at 62; three of whom are pursuing PhD programmes. Members of staff are also involved in the teaching undergraduate programmes of the Faculty in addition to supervision of final year Agricultural Economics students whose number currently stands at 54. A total of 162 Agribusiness students enrolled in the two year batches are in session with a fair proportion being fee-paying students-an indication of the promise and potential of the programme.

STAFF STRENGTH

The total number of academic senior members in the Department currently stands at 12. It is expected that, before the commencement of the new academic year, two professors from Nova Scotia College of Agriculture and the University for Development Studies respectively would assume office in the Department as Visiting Professors to augment academic work whiles suitable candidate are identified as permanent members of staff for work to continue.

MAJOR RESEARCH ACTIVITIES

In order to increase its visibility in the research and consultancy marketplace the Department has set up a unit consisting mainly of younger members of staff and with technical backstopping from less young staff members to scout and identify avenues for research and consultancy opportunities to complement the traditional sources. With this approach research activities both at individual and departmental levels have increased dramatically, though due to the high load arising from student numbers progress of execution is yet to attain the high level envisaged. It is expected that within the new academic year the Departmental Board will direct new strategies to handle the challenge of high load associated with handling the large student numbers and the other core duty areas.

EXTERNAL AND INTERNAL COLLABORATION

The Department has ongoing collaboration with the following institutions: North Carolina A&T University and Auburn University in the US, International Institute of Tropical Agriculture, Ibadan, Nigeria, the World Food Program (WFP) as well as research collaboration with local universities- University of Ghana, Legon, University of Cape Coast and the University for Development Studies, Tamale under the National Agribusiness Development Project (NADEP).

PROBLEMS AND CHALLENGES

The Department faces challenges that are common to the rest of the Faculty in terms of balancing student numbers with the inadequate teaching space available. Inadequate finance to enable student participation in essential field exercises that the teaching of agriculture demands continues to be a major hurdle. However, lecturers have been able to adopt strategic coping strategies through adjustment in teaching methods and increased use of group study methods.

FUTURE PLANS AND PROJECTIONS

In order to generate funds to enhance teaching and research, the Department has put forward proposals to run sandwich fee-paying courses including (i) Diploma programme in Agribusiness Management, (ii) Diploma programme in Farm Management, and (iii) Diploma programme in Agric. Extension Services during the long vacation period.

DEPARTMENT OF ANIMAL SCIENCE

INTRODUCTION

The Department of Animal Science is one of the thirteen academic departments under the College of Agriculture and Natural Resources and one of the four Departments that constitute the Faculty of Agriculture. The Department seeks to provide instruction, conduct research, train farmers and extend knowledge and technology in Animal Science. The Department of Animal Science is located on a 40-

hectare plot of land out of which 20-hectares are used in the establishment of pastures. The Department is divided into two sections namely; 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 runs both undergraduate and postgraduate programmes leading to the award of the composite BSc Agriculture degree and several post-graduate degrees. These postgraduate degrees include; MSc, MPhil, and PhD degrees. The areas of specialisation for graduate students are in Animal Nutrition, Animal Nutrition and Management, Animal Breeding and Genetics and Reproductive Physiology. The Department produced five MSc. and three PhD holders in the various areas of specialisation aforementioned in the last academic year. The three PhDs were trained under the VC's Special Initiative to replace ageing staff. One of the three was trained for the University of Cape Coast. During the year under review, a PhD. Student on the KNUST Staff Development programmes was selected to give a presentation at the International Young Researchers Seminar in France. The Department continued to provide service courses to two Departments- the Department of Biochemistry and Biotechnology and the Department of Agroforestry. The painting and Sculpture and Physics Departments continued to use the facilities of the Farm for student work.

STAFF MEMBERS

The Department is endowed with highly qualified and experienced academic staff who possess both local and international experience in teaching and conducting research. Out of the 11 staffmembers, 5 are Professors, 1 Senior Lecturer, 2 Senior Research Fellows and 3 Lecturers.

MAJOR RESEARCH BY STAFF

In line with the University's vision of advancing knowledge in science and technology for sustainable development, the Department conducted researches that explored the options available for increased productivity of small animal holdings, efficient and cost effective means of feeding farm animals through the use of non-conventional feed resources as well as the use of genetically improved breeds. In addition, the Department focused on identifying alternative means of feeding ruminant livestock that have the potential of mitigating greenhouse gas emissions. Members of the Department collaborated with colleagues in other departments and colleges of the University, research institutions and industries engaged in animal agriculture. These include the Faculties of Pharmacy and Pharmaceutical Sciences, Renewable Natural Resources, the Colleges of Science and Engineering, the Council for Scientific and Industrial Research (CSIR) and private enterprises as Akate Farms and Agricare Limited. It is the view of the Department that such linkages would help to improve the livelihoods of the small animal holding farmers in a holistic way. As part of the University's mandate disseminating knowledge to outside persons, research outputs were extended to farmers through workshops organised by some senior members in the Department.

COLLABORATION

The Department continues its collaboration BEST Canada, a feeding manufacturing entity in testing feed additives for the local market. Recently the Department and the Council for Scientific and Industrial Research – Crop Research Institute, Fumesua are collaborating in a research into sustainable livestock and crop integration. The research team in the Department comprises Prof. E.L.K Osafo-Team leader and Dr. C. Antwi - member.

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 Secondary Schools as well as other sister universities, such as the University for Development Studies, Tamale and the University of Education, Mampong Campus have 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 organisations, 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 product 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 other places mid-country.

RESOURCE MOBILISATION

The Department and CSIR-CRI participated in internationally competitive proposal writing and won a grant of \$1.2m to research into sustainable livestock and crop integration in the West African Sub region. There are four other participating countries, Gambia, Mali, Benin Republic and Australia. The funds are managed by the CSIR-CRI. The Research team in the Department comprises Prof. E.L.K Osafo-Team leader and Dr. C. Antwi - member. Dr Karen Beauchemin, a research scientist of the Agriculture and Agri-Food Canada,

Lethbridge Research Centre has donated an amount of USD 40,000 to set up The Beauchemin-McGinn Award of Excellence in Agriculture for female postgraduate studies. The award is to be given annually to a female graduate student of Agriculture, with preference to those studying in the field of animal science, especially as related to sustainability, environment, rural development or other aspects of ecology. The candidate will be selected on the basis of demonstrated academic achievement and financial need.

CHALLENGES

The major challenge the Department faced has to do with low voltage supply from the national grid. This is hampering operations of equipment particularly cold storage. Furthermore, there is a need for upgrade of laboratory equipment to meet the growing needs of training undergraduate and post-graduate students.

FUTURE PLANS AND PROJECTIONS

Through the initiative of the Central Administration, plans have been put in place to revamp the laboratories and farm through the University's internally generated funds. When this has been done the Department would be equipped with cutting-edge equipment to provide support for teaching and research.

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, with options for specialisation in Soil Science, Plant Breeding, Plant Protection and Agronomy. 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 the only Tissue Culture/Plant Biotechnology facility in the University which is being expanded to include molecular genetics work. It has satisfactorily equipped the 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 (Dairy/Meat Science), BSc (Agribusiness) and BSc (Agricultural 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 in partial fulfillment of the requirement for the award of their degrees. A four-year BSc (Agricultural Biotechnology) degree programme has been introduced since 2009 and is progressing well. The number of undergraduate students pursuing the Crop and Soil Science option stood at 41 during the period under review.

Graduate studies leading to the award of MSc, MPhil and PhD degrees are offered in the above courses. The number of postgraduate students enrolled in the Department during the year under review is 48. The Department is engaged in training foreign and local students leading to MSc degrees sponsored by AGRA (Alliance for a Green Revolution in Africa). A special 4-year PhD programme in Soil Science for 20 foreign and local students, funded by AGRA has begun this academic year. The research conducted by the postgraduate students aims at solving basic crop and soil problems for improving food security and lives of farmers as well as building their capacity. During the period under review, 23 students completed their postgraduate studies.

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 Technology) 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 Annual General Meeting (AGM) organised 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 include: 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 14 applicants applied and all but only one person was refused admission.

DISTANCE LEARNING

The Department successfully mounted an MSc. degree Programme in Postharvest Technology in the Institute of Distance Learning last year and this is entering the third year. The Department is reviewing current courses and planning to introduce new demand driven programmes.

COLLABORATIONS (INTERNAL AND EXTERNAL)

- The Department is in collaboration with a number of institutions, both locally and internationally.
- At the local level, the Department is on a five (5) year programme with the Ministry of Food and Agriculture (MOFA) for Export Marketing and Quality Awareness Project (EMQAP) which started in 2008 at a cost of about \$1.5 million and is still on-going.
- The Department was allocated a number of assorted laboratory equipment, basically glassware, as a result of this collaborative initiative. The Department also collaborates with the Department of Crop and Soil Sciences to run the AGRA programme to train MSc and PhD students, particularly in Seed Science and Technology.
- Proposals are also written jointly with experts from the Danish universities for growth and Development, to build capacity by training PhD students jointly supervised by experts from both KNUST and Danish University Staff.
- Other International Institutions include the University of Stellenborg in South Africa and some universities in the Netherlands on various areas of mutual interests.

RESOURCE MOBILISATION

- The Alliance for a Green Revolution in Africa (AGRA) programme is still on-going, and four (4) students (2 Ghanaian and 2 foreign students) were admitted into the MSc. Seed Science and Technology programme this academic year.
- The Department also won two contracts during the period under review to the tune of nearly GHC 59,000.00 to landscape various areas on campus that brought in some income to the Department. The projects were executed by Mrs. Hannah Adzraku and her team.
- The Department has re-activated commercial production of vegetable, fruits and ornamental plants, which has been dormant since the departure of Prof. J. C. Norman several decades ago, to generate income to support developmental projects. The Department also has collaborations with Finatrade Foundation to undertake the production of fruits, vegetable and ornamental plants for sale. The Department accessed the sum of five thousand, six hundred and fifty-nine cedis (GHC 5,659.00) as starting capital from the Finatrade Fund, repayable in three years period. These projects serve as a source of practical training and for needy students to earn some income in the year under review,
- Mr. P.Y. Adjei with Mrs. Hannah Adzraku executed a near GH¢50,000 project (Royal Parade Ground) for the Department of Horticulture.

PROBLEMS AND CHALLENGES

The Department will be very grateful, if the University can help renovate the buildings that are in very bad state. Staff accommodation and lecture rooms are woefully inadequate, particularly with the introduction of new programmes and the ever increasing student population every year. Urgent steps need to be taken to check this downward trend, before the situation spiral out of control.

The Department is in dire need of labourers to support our commercial drive, research and practical teaching programmes; otherwise, our effort will all be in vain. At least ten labourers will be enough as a starting point.

FUTURE PLANS AND PROJECTIONS

The Department has set up committees which are working on the introduction of the following Degree and Diploma programmes, and short courses to be run in the very near future. These proposed short courses will be run during the long vacation break.

Degree Programmes:

- BSc Horticulture
- BSc Seed Technology
- BSc Fruit Science
- BSc Vegetable Science

Diploma Programmes

- Diploma in Horticulture
- Diploma in Post Harvest Technology
- Diploma in Seed Science
- Diploma in Landscape Studies

Short – Courses

- Post Harvest Handling Process of Crops
- Fruit Crop Production in Ghana – Practices and procedures
- Propagation and Nursery Management for Vegetable and Ornamental Growers
- Landscape Maintenance in homes and offices
- Cultural Practices Effect on Quality of Vegetables
- Organic Production of Vegetable Crops in Ghana – Practices and Procedures
- Improving Seed Quality of seed growers for increased income.

The Department has also submitted a proposal to the Dean, Faculty of Agriculture on plans to put the Anwumasu school farm to productive use to generate income, and is still looking in other areas for further investment. In addition, the Department has also set up various committees to review the curriculum and also to draw up proposals to revamp the entire ornamental section particularly the two plant houses for both commercial and teaching purposes.

CONCLUSION

The Department has and will continue to re-structure and review its courses to meet and fit into changing trends in the national and international educational structure. The income generating activities that have already been re-activated will be vigorously intensified and expanded in scope to enable the Department to stand on its feet and become a centre of excellence for both academic and commercial purposes in the future.

FACUTLY OF RENEWABLE NATURAL RESOURCES**INTRODUCTION**

The Faculty of Renewable Natural Resources continues to play a major role in the tertiary educational system and contributes immensely to scientific research in the areas of the development and preservation of the country's natural resources. It also conducts research towards the improvement of the agricultural sector.

The Faculty seeks to promote the advancement and awareness of the preservation of the natural resources through teaching and research to sustain the Ghanaian economy. It therefore offers the opportunity for students to acquire the necessary knowledge and experiences to work on their own and to develop their leadership competencies to embark on scientific activities for the betterment of the society.

The Faculty is made up of five academic departments, namely;

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

STAFF STRENGTH

The Faculty consists of twenty-six permanent teaching staff. They are made up of three Associate Professors, five Senior Lecturers and eighteen Lecturers. Two Lecturers, namely, Mr. B. B. Campion and Miss J. A. S. Ameyaw are on study leave. Dr. D. Adjei-Boateng who was on study leave resumed work on completion of his PhD programme in December, 2010. During the same year, Mr. E. L. Dawoe joined the teaching staff. The teaching staff is supported by twenty-four administrative and technical staff one of them, Mr. C. Attakorah is on study leave.

DEANSHIP AND HEADSHIP POSITIONS

The following persons held top managerial and administrative positions in the Faculty during the year under review:

W. Oduro, PhD	-	Associate Professor/Dean
S. K. Oppong, PhD		Associate Professor/Vice Dean and Head of Department of Wildlife and Range Management
S. Amisah, PhD	-	Senior Lecturer/Head of Department of Fisheries and Watershed Management
O. Agbenyega, PhD (Mrs)	-	Head of Department of Agroforestry
Kyere Boateng, PhD	-	Head of Department of Silviculture and Forest Management
J. Osei Kofi	-	Head of Department of Wood Science and Technology

NEW PROGRAMMES

The Faculty intends to run separate undergraduate degree programmes for all the five Departments. At the moment, the Department of Fisheries and Watershed Management has presented a proposal to start a BSc degree programme in Fisheries and Aquaculture. The proposal has gone through the College Board but yet to be approved by the Academic Board. The Department of Silviculture and Forest Management has also submitted a proposal for MSc programme in Natural Resources and Environmental Governance. The programme has been approved by the College Board and forwarded to the School of Graduate Studies.

FUNDING OF RESEARCH ACTIVITIES

The Faculty continues to receive support from the Canadian International Development Agency (CIDA) for the APERL Project.

INFRASTRUCTURE

The Faculty has sunk a borehole to ensure constant flow of water. A new garage has been constructed to accommodate the fleet of staff cars.

SERVICE TO THE COMMUNITY

The Faculty continued to play a leading role in the preparation and review of the forestry syllabus of the Senior High School. The Faculty offer advice to the Ghana Forestry Commission. As a scientific authority the Faculty offer expertise advice to the Ghana Timber and Sawmillers Association on the preservation of certain species of trees and afforestation and the Forestry Commission (Wildlife Division) on Convention on International Trade of Endangered Species (CITES) issues.

VISITORS TO THE FACULTY

The Faculty received Prof. Andrew M. Gordon and Prof. Naresh Thevathasan from Canada as delegates of CIDA-APERL Project. Mr. Cristian Barbur visited the Faculty on the mission of CIDA-APERL Project to install Carbon and Nitrogen Analysers at the Soil and Plant Analysis Laboratory. He organised a five-day training for the Laboratory Technician from 21st to 25th May, 2011 for the effective use of the Laboratory equipment.

STUDENT DEMOGRAPHY
Undergraduate Student Demography

Year	Gender		Grand
	Female	Male	Total
Year 1	60	149	209
Year 2	48	144	192
Year 3	35	137	172
Year 4	30	111	141
Grand Total	173	541	714

Postgraduate Student Demography

Year	Gender		Grand	-+
	Female	Male	Total	
Year 1		29	29	
Year 2	3	23	26	
Year 3	2	7	9	
Year 4		7	7	
Year 5		4	4	
Grand Total	5	70	75	

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, Collaborative Resources Management and Plantation Silviculture. The Department also offers service lectures in Landscape Management Systems, Farming Systems, Farming Systems and Weed Science to the Faculty of Agriculture

ACADEMIC STAFF STRENGTH

The academic staff strength of the Department is seven. In addition, Mr. Evans L.K. Dawoe (Part Time Lecturer) has applied for a full time position, and plans are in progress for his transfer from the Technology Consultancy Centre (TCC) to the Department of Agroforestry.

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.
- 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
- Bats and Infectology in rural communities
- Monitoring and evaluation of cook stove project
- Biomass transfer and inorganic fertilizers for soil fertility improvement
- Intercropping studies with *Jatropha*, maize and groundnuts
- Nutritional Studies on *Jatropha* using *jatropha* cake

SERVICE TO THE COMMUNITY

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

- Dr. (Mrs) Olivia Agbenyega is the lead author for Global Energy Assessment, coordinated by the Energy Program at the International Institute for Applied System Analysis (IASA) Vienna, Austria. Furthermore, she is involved in coordinating the Gender mainstreaming workshops for the APERL Project in the Brong Ahafo Region. She is also a trainer for the Africa Lead project on Up Scaling the Comprehensive Africa Agriculture Programme (CAADP) for Food Security in Africa. In addition she is an Africa Hall fellow involved in the mentorship programme for female students in the Hall and the College of Agriculture and Natural Resources.
- Dr. Twum-Ampofo is a member of the Regional Agroforestry Training Team and also served as a consultant/ Agroforestry Specialist to Local and International NGO's.
- Dr. Charles Oti-Boateng is involved in the Training of Farmer Based Organisation (FBOs) in the Ejura-Sekyeredumase and Sekyer 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. He is also involved in the development of National Agroforestry Policy for Ghana under the APERL Project in the Brong-Ahafo Region. Also served as consultant to SEND Foundation, an International NGO
- 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.
- Dr. J J Afuakwa is a Fellow of Queen Elizabeth Hall. In addition, he offers services as a Board Member of Denyaseman Catholic Senior High School at Huntado, Ashanti.

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.

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 through Dr. Olivia Agbenyega has collaborated with the Department of Silviculture and Forest Management in developing an MSc in Natural resources Governance.

The Department is also collaborating with the Kumasi Centre for Collaborative Research (KCCR) in their socio-economic studies in bat and human infectology; Dr. Agbenyega is one of the principal investigators.

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 utilisation 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.

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

RESOURCE MOBILISATION

A total of over USD 150,000 has been attracted in research grants over the period 2007-2010 and some of this have been in the form of equipment, which has enhanced the research capacity of the Department. Arrangements are in place to make our fish hatchery fully operational and commercialised with funding support from CRPS..

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, USA and the Department, in particular, and with KNUST as a whole.

SERVICE TO THE COMMUNITY

Mr. Godfred Owusu Boateng continues 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 has conducted a number of outreach activities to teach farmers on how to propagate fish and manage fish hatcheries. This was done with the joint efforts of the Department, Aquaculture Research Development Centre and Purdue University with sponsorship from AquaFish CRSP (USAID). Dr. Amisah continues to represent KNUST and Ghana at the World Aquaculture Conferences held at various locations on the globe. The Department is playing a leading role in teaching fish farmers on management of fish farm effluents.

Dr Amisah represented the Department at the National Constitution Review Committee that touched on issues relating to Fisheries Management.

FUTURE PROJECTIONS AND CHALLENGES

A new BSc programme in Aquaculture and Water Resources Management has been proposed by the Department and is undergoing review by KNUST. It is hoped that when we receive the nod we will run this new programme in the following academic year. Similarly an MSc Aquaculture programme is planned to start over the same period.

Infrastructural requirements and lecture room space remain our major challenges to the expansion of our programmes. It is anticipated that funds will be made available to provide these to make us provide education and service to a larger population of students and the people of Ghana.

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.

Academic Programmes

The Department provides opportunity for a specialisation in Silviculture and Forest Management in the BSc (Nat. Res. Mgt) degree offered by the Faculty of Renewable Natural Resources and offers MPhil 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 Boateng Kyereh and Dr Emmanuel Acheampong attended a Managerial Leadership Training Workshop (12th – 14th August, 2010) organised by the College of Agriculture and Natural Resources (CANR) and offered by GIMPA.
- Dr Emmanuel Acheampong attended a three-day training workshop on Governance, Policy Analysis, Advocacy and Coalition Management from 1st – 4th July, 2010. Training was offered by Care International – Ghana.

DEPARTMENTAL RESEARCH ACTIVITIES

The Departmental research programme is concentrated in the following areas:

- *Forest-related livelihoods and forest governance in the high forest zone of Ghana:*
Using timber resource creation and industrial biodiesel plantations as case studies, the research objective is to examine the role of forest governance innovations in shaping local peoples' reliance on forest resources as livelihood support and on the other hand rural land use alienation and conflicts arising out of these initiatives (Lead Scientist: Dr Emmanuel Acheampong)
- *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 (Lead Scientist: Dr. Boateng Kyereh)

- ***Species invasion of Ghanaian forest reserves***

Starting with *Broussonetia papyrifera*, an invasive medium-size tree originally from the Far East, this study aims at determining 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 (Lead Scientist: Dr. Boateng Kyereh)

- ***Plantation Development***

This research is examining the technical and socio-economic aspects of plantation forestry in Ghana with the aim of identifying best practices for plantation development. Specific studies under this research are examining (i) the effect of different plantation development models on local people's livelihoods (ii) species' responses to different nursery practices (iii) challenges of tree tending under expanded plantation programmes in the country (Lead Scientist: Dr. K.A. Nkyi)

INSTITUTIONAL COLLABORATION

The Department collaborated with key forest sector institutions and overseas universities on various developmental and research projects in the country.

RESOURCE MOBILISATION

For the period under review, the Department benefited from research grants totalling €11,500 from Tropenbos International, Ghana to support one PhD and fifteen undergraduate research projects.

DEPARTMENT OF WILDLIFE AND RANGE MANAGEMENT

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 post-graduate 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. There are 24 graduate students in the department with 6 pursuing PhD degrees.

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, General Entomology, Forest Pathology, Forestry Entomology. The Department also undertakes Postgraduate programmes in MSc, MPhil, PhD in Wood Science Technology, Timber Engineering, Furniture Design and Production.

INTERNAL DEVELOPMENTS AND EXTERNAL COLLABORATION

- Production of compendium for B.Sc research work.
- Development of bamboo lumber and Tannin Adhesive Project with University of Applied Sciences, Biel, Switzerland. Kumasi Glue Factory and Pioneer Bamboo Processing Factory (Assin Foso) as local partners. This project dovetails into bullet 3 (below)
- Development of Ghana Government-sponsored project on bamboo utilization in housing with Forestry Research Institute of Ghana (FORIG), Kumasi Glue Factory and Pioneer Bamboo Processing Factory (Assin Foso) as local partners.
- Development of protocol for academic, training, incubator project with University of British Columbia and Stellenbosch University (South Africa)
- Initial development of protocol for collaboration in wood utilisation, training and exchange with University of Guyana. WITC (Wood Industries Training Centre), Akyawkrom - Ejisu as local collaborators.
- Development of protocol to assist Wood Science Department in the University of Liberia.

- Installation of three kiln/ovens at the Woodwork laboratory.
- Installation of lathe machine and cutters at the Woodwork laboratory.
- Installation of eight-inch bench grinder.
- Construction of storage shelves/cabinets in store rooms and offices.
- Repair of ceiling panels in woodwork laboratory.

FACULTY OF FOREST RESOURCES TECHNOLOGY, KNUST, SUNYANI CAMPUS

INTRODUCTION

This report covers the 2009/2010 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:

L. B. Antwi	-	Dean
I. K. Abebrese	-	Vice Dean
Christiana A. Appiagyei (Mrs)	-	Assistant Registrar
Paul Nana-Nketiah	-	Accountant

ACADEMIC DEPARTMENTS

The Faculty runs four academic programmes in the following departments, namely; Social Forestry, Wood Processing and Marketing, Ecotourism and Forest Recreation, and Land Reclamation and Rehabilitation

Staff Participation in 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 academic staff. 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.

RESOURCE MOBILISATION

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 mango seedlings. Over 180,000 of such improved mango seedlings have been planted so far.

Visit to Songhai Centre

During the year under review, the following staff of the faculty visited Songhai Centre at Portonovo - Benin Republic from 30th November -5th December, 2010: Messrs Nat O. Prempeh, Kwabena

Asubonteng, Richard Obour, Dr. D.E.K.A Siaw and Mrs. Lucy A. Gyiele. This trip was sponsored by APERL project.

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, forestry institutions and research institutions. The current third year and fourth year Wood Processing and Marketing option classes are twenty-two (22) and fifteen (15) respectively.

SERVICE TO COMMUNITY

- Staff visited 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.

INTERNALLY GENERATED FUND

- During the year under review, some standing trees were sold to Original Asaase Aban Company Limited (OAACL) for GH¢ 20,000.00.
- Thinning in the plantation has yielded about 137 poles of Teak ready to be sold.

DEPARTMENT OF SOCIAL FORESTRY

INTRODUCTION

The Department continued to play its role in training of students of the Faculty of Forest Resources Technology in the field of Social Forestry. 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 47 students.

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.

COLLABORATION

The Department is currently collaborating with a number of organisations in the training of students. Our major collaboration is with Samartex at Samreboi where students spend a semester with the company for their compulsory practical attachment. The Teaching staff of the Department went to Samartex during the year to identify areas of research that would be beneficial to the company.

DEPARTMENT OF LAND RECLAMATION AND REHABILITATION

COLLABORATIONS AND LINKAGES WITH INDUSTRIES

In our strive to produce practically-oriented graduates for industries, the Department continues to link up and collaborate with various institutions for purposes of collaborative research and training of undergraduate students and to offer consultancy services. The Department has currently written a proposal to AngloGold Ashanti (AGA) Obuasi mine to reclaim and rehabilitate a 100 hectare old tailings storage facility at Boete community, near Obuasi. The Department is also pursuing similar

consultancy services for Newmont Gold Ghana limited. Other institutions such as Tarkwa Goldfields, Ghana Manganese Company (GMC), Golden star Bogoso / Prestea Limited, Environmental Protection Agency (EPA) and Samartex, Samreboi are key stakeholders in the department.

DEPARTMENT OF ECOTOURISM AND FOREST RECREATION COLLABORATIONS AND LINKAGES WITH INDUSTRIES

In our strive to produce practically-oriented graduates for industry, the Department continues collaborate with various institutions and stakeholders for research and training of undergraduate students. The key stakeholders of the Department are the Ghana Tourist Board, Sunyani, Kakum, Ankasa and Mole National Parks.

BUREAU OF INTEGRATED RURAL DEVELOPMENT (BIRD)

INTRODUCTION

The 2010/11 academic year started with a change in the Directorship of The Bureau of Integrated Rural Development (BIRD) with Nana Dr S. E. Edusah taking over from Dr Paul Sarfo Mensah after completing his two year term of office. BIRD continues to carry out its core business of research, consultancy and outreach. It is noteworthy to mention that in spite of the precarious staff strength and limited resources, the Bureau was able to meet all commitments to our clients on time and executed initiated programmes with success. Details of the activities are summarised below.

RESEARCH

The following research activities are on-going:

- BIRD has initiated the compilation of district level data into a composite regional data base to make it easily for researchers, student, development practitioners and others to have easy access to district information. The document will be published when complete.
- BIRD is finalising the development of indicators that will be used to track rural development in Ghana with support from the Ministry of Local Government and Rural Development
- BIRD is supporting the Ministry of Local Government to establish the Rural Development Directorate and make it operational for the Ministry to fulfill its mandate of carrying out rural development in the country.
- BIRD is preparing to undertake a study on rural development in Ghana and issue an annual report on the state of rural development in Ghana. The research will be carried out in collaboration with MLGRD.
- The Bureau carried out and completed a major research contract for Newmont Ghana Gold Limited on "Quantitative Survey of the Resettlement Action Plan Completion Audit" The contract sum was US\$81,000.
- 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. This opportunity fits into the departmental research and publications agenda on "Changes in socio-economic environment for mining communities".

COMMUNITY SERVICE

BIRD undertook a capacity building training course in community base planning and management for Sustainable Development Committees (SDCs) of the Newmont Ahafo Development Foundation (NADeF). 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.

LOCAL AND INTERNATIONAL COLLABORATION

At the local level, BIRD is collaborating with the Ministry of Local Government and Rural Development in a research to develop indicators for tracking the effects and impacts of rural

development interventions and to undertake comprehensive research on the state of rural development in Ghana.

BIRD has facilitated a link programme between KNUST and the University of Venda (UNIVEN with a Memorandum of Understanding (MoU) between Bureau of Integrated Rural Development (BIRD) of KNUST and Centre on Rural Development and Poverty Alleviation (CRDPA) of UNIVEN signed and an action plan developed for the link. The Bureau 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

NPT/GH/NPT 278 PROJECT

BIRD continue to played central role in the implementation of The Netherlands Programme for the Institutional Strengthening of Post-secondary Education and Training Capacity (NPT) which started in July 2005 at the College of Agriculture and Natural Resources (CANR). The first phase of the project NPT/GH/088A:130B was concluded in 2008 and this was followed immediately with the second phase (NPT/GHA/278A:294B The two projects have a total fund support of €2,200,000 made available by the Dutch Government and administered by NUFFIC.

TEACHING AND SUPERVISION OF THESIS

Apart from its core activities of research, extension and consultancy the Bureau provides teaching and supervision of student theses services to the following Faculties and Departments:

- Department of Geography and Rural Development
- Faculty of Renewable Natural Resources (FRNR)
- Department of Environmental Resources Management of the College of Engineering
- Department of Planning and Land Economy

INTERNAL AND EXTERNAL EXAMINERS

The staff members act as internal and external examiners as follows:

- Department of Material Engineering, School of Engineering. Institute of Development Studies (IDS), University of Cape Coast.
- Department of Renewable Natural Resources, Faculty of Agriculture, University of Development Studies.

TECHNICAL REPORTS

Technical reports issued by the Bureau include the following;

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

STAFF DEVELOPMENT

Two staff members are currently pursuing PhD programmes as follows:

- Mrs. Ernestina Fredua Antoh is pursuing a four-year PhD sandwich programme in Development Studies at Centre of Development Studies of University of Cape Coast.
- Mr. Sarpong is 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. His studies is funded under the Netherlands Programme for the Institutional Strengthening of Post-Secondary Education and training Capacity (NPT) project being implemented at the College of Agriculture and

Natural Resources (CANR) of the Kwame Nkrumah University of Science and Technology (KNUST).

CHALLENGES OF THE BUREAU

The major challenges of the Bureau are in the area of staff strength. The Department presently has three senior members as against six as at year 2000. Presently, the only female senior member is on a distant doctoral programme. 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 staffing problem has arisen because vacancies created over the years as a result of the departure of some staff members for different reasons have not been filled.

CONCLUSION

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 being the only university-based rural development centre has the potential to grow to become a major centre for excellence in research and development.

DAIRY/BEEF CATTLE RESEARCH STATION

INTRODUCTION

The Station started operation in 1974 to aid teaching and research in the Faculty of Agriculture. It currently stocks cattle, sheep, goats and rabbits for research purposes. The main research areas are livestock production and dairy processing.

RESEARCH

The Station completed the following research programmes in the course of the year under review.

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

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

1. Feed intake, productive performance, carcass yield and meat quality of growing rabbits fed concentrate with or without palm oil supplementation.
2. Influence on intake, digestibility and growth performance of *Piper nigrum* seeds and *Xylocarpus aethiopicus* fruits in concentrate feeds fed to broiler rabbits.
3. Effect of *Leucaena leucocephala* in the nutrition of the domestic rabbit.
4. Concentrate supplementation of native pasture in early weaned N'Dama calves reared under different management systems.

Technical Training

The staff of the Station provided 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 under review. 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.

Community Service

The Station offered advisory services to livestock farmers and yoghurt producers during the year. It sold breeding and live animals for slaughter to the general public. An amount of GH¢ 20,800.00 was generated from the commercial activities of the Station.

AGRICULTURAL RESEARCH STATION (ARS) – ANWOMASO

The Agricultural Research Station (ARS) is located at Anwomaso, about 10 kilometers from the main University campus and covers a total land area of 554.492 hectares (ha) (1,386.23ac) of extensive arable land which is suitable for livestock and crop production, as well as fish farming. It shares boundaries with the following settlements – Anwomaso, Domiabra, Kwamo, Fumesua and Bebre.

ACTIVITIES

The activities of the Station covering the period comprised of the following:

- Research
- Vegetable and arable crop production
- Plantation development.
- Community service
- Briefing visiting students to the Station

RESEARCH

Research being undertaken at the Station include:-

- Effects of oil palm canopy closure on the growth of *Pueraria phaseoloides*.
- Effects of storage length and methods of scarification on the germination of *Cajanus cajan*
- Effects of storage length and methods of scarification on the germination of *Flemingia macrophylla*.

VEGETABLE AND ARABLE CROP PRODUCTION

Vegetable production comprising of tomato, squash, radish, sweet pepper is being undertaken under organic practices of cultivation at the Station. While maize production is done as an intercrop on a two year old oil palm plot. This intercropping practice has enhanced the growth of the oil palm.

PLANTATION DEVELOPMENT AND ARABLE CROP PRODUCTION

The Station has transplantable oil palm seedlings ready for field planting to cover an estimated area of 16 hectares (40 acres). Other activities during the period included maintenance of the oil palm and citrus nurseries and field plantations, harvesting of fresh fruit bunches (FFB) and filling of vacancies of dead seedlings in young plantation plots.

COMMUNITY SERVICE

The Station continued to sell farm produce (main income earner of the Station) viz; oil palm fresh fruit bunches (FFB), citrus fruits and maize to the University community, the Animal Science Department, St Louis Girls' Senior High School, the Okomfo Anokye Teaching Hospital and resident communities around the Station.

STUDENTS' VISIT

The second year regular students of Faculty of Agriculture visited the Station to observe and study the various forage species (legumes and grasses) established at the Forage and weeds museum at the Station. The MSc Students in Crop and Soil Sciences Department too visited the Station for practical lessons in Weed Science.

STAFF DEVELOPMENT

The Assistant Technician at the Station preceded on study leave with pay to pursue a four year BSc Course in Agricultural Science at the College of Education, Winneba-Mampong campus. At the same period one senior technician was recruited for the Station.

PROBLEMS/CHALLENGES

The Station has no residential and office accommodations and therefore continues to operate under an old zinc shed, used for an office. It therefore becomes an embarrassment whenever visiting students as

well as other visitors ask for washrooms while on visit to the Station. Its intension to expand the existing oil palm and citrus plantations to include other plantation crops like cocoa to generate more income, is becoming difficult to realise due to some of the following setbacks:

- Old and aging labour,
- Inability to get casual labour due to low daily rate
- Ineffective security system leading to pilfering of farm produce
- 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.

COLLEGE OF ARCHITECTURE AND PLANNING

INTRODUCTION

The College of Architecture and Planning comprises four (4) Teaching Departments and two (2) Research Units. The College is now working under two (2) tier system.

DEPARTMENTS

Department of Architecture

- *BScArchitecture*

Department of Building Technology

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

Department of Planning

- *BSc Development Planning*
- *BSc Human Settlement*

Department of Land Economy

- *BSc Land Economy*
- *BSc Real Estate*

RESEARCH UNITS

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 at least two undergraduate programmes.

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 Department of Architecture is introducing changes in its postgraduate programmes to meet the demands of the time. The Department is introducing Masters of Architecture Programme to replace the existing Postgraduate Diploma Programme which is being run. Besides, the Department has plans to introduce One Year Masters programme for professional Architects who already have postgraduate qualification. The College has two thousand one hundred and thirty-seven (2,137) students during the 2010/2011 Academic Year, comprising of four hundred and fourteen (414) postgraduate students and one thousand seven hundred and twenty- three (1723) undergraduate students.

RESEARCH GROUPS

The College has established Research Groups in different thematic areas for Senior Members. These Research Groups are meant to facilitate the writing of proposals for Research Activities and eventual publication out of these researches.

REHABILITATION OF THE STUDIO BLOCK

The College is in the process of rehabilitating the studio block to fit modern standard. The technical drawings of the Block have been sent to Development Office and the College is waiting for the bill of quantities from same for Tendering processes.

CONSTRUCTION OF CAR PARK

The Students Association of the College, with the support of the College Administration, has constructed a car park to ease congestion and also to provide parking spaces for Students during lecture hours. This important project could not have been completed without the help of the Ghana Highway Authority. The Ghana Highway Authority provided materials for construction and men to execute the project.

CONSTRUCTION OF ULTRA MODERN AUDITORIUM

The immediate past Vice-Chancellor on 28th September, 2010 cut a sod for the construction of ultra modern auditorium for the College. This facility, if completed, would enable the College to provide extra lecture theatres that would enhance teaching and research activities in the College.

The proposed auditorium would also enable the College to cope with the ever increasing demand for admission from both local and foreign applicants. It is hoped that the University would assist the College to complete the project on time.

VOIP TELEPHONE SYSTEM

The College has installed VOIP in the Offices of all the staff. The project is intended to improve communication among staff. The use of VOIP system would enable the College to reduce the high cost associated with the use of telephone for both domestic and International communication.

STAFF RECRUITMENT AND DEVELOPMENT

The College has recommended six (6) Lecturers for appointment. Three (3) were for full time appointment whilst the other three (3) were for part- time appointment. Two (2) of the Senior Staff have been granted study leave to pursue degree courses. Two applications for promotion to the professorial rank were also processed in the year under review.

LINKAGE WITH INDUSTRY

The College is working 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 (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

Over the past years, the Department of Architecture has faithfully responded to the needs of society academically, environmentally, culturally and socially through its products both locally and internationally; this has been its major aim. In the light of this, all academic programmes developed have been geared towards making it a Centre of Excellence in architectural education, both in scholarship and professional practice.

Students of the Department are provided, through various internationally accredited programmes, quality and versatile training to become effective leaders and competent professionals, with sound theoretical basis for higher academic pursuits and future prospects in their fields of study.

ACTIVITIES

Teaching

Presently, the Department is running both the undergraduate and graduate programmes and at both levels, the studio programme (Architectural Studio) is the core around which all the theoretical courses are structured and taught. In effect, they provide the needed inputs for the architectural content of the students' drawings.

The undergraduate programme has been designed to give a solid basis for a broad architectural education and it is upon this that the graduate programme, recognised by the Ghana Institute of Architects, is built. Students of architecture are therefore expected to take this course if they wish to be professional architects, as such the programme is designed to produce architectural scholars as well as leaders of technical teams responsible for the development of the built environment, through critical and in-depth consideration of climate, culture and construction in every context.

New Programmes

In last year's report, the Department stated its intention to introduce new courses at both the undergraduate and graduate levels. Discussions are still on-going as regards courses at the former level. However, the introduction of the Master of Architecture (M.Arch) programme which was run on a limited basis for about three years have been re-structured and would be started as a fully fledged masters programme next academic year to replace the Post-graduate Diploma in Architecture programme which would be phased out by the year 2012. This means after graduating with the M.Arch degree, students could now take up doctoral programmes in other universities, which hitherto was not the case. In a few years time the Department intends to add Doctoral programmes to its current list of courses.

A one year research-based Master of Architecture (MSc, Architecture) programme would also be started next academic year for practicing architects and students who have completed the PG Diploma in Architecture programme, while a two year Masters programme for students who complete the BSc (Architecture) and do not want to be professional architects, is also in the offing. This programme, if introduced, would provide an alternative for some students who are not interested in design per se, but wish to continue in other aspects of architecture. This programme would be research-based.

These programmes, it is believed, would further help strengthen the theoretical and academic components of the graduate programmes in the Department and prepare graduands for higher or terminal degrees, enabling them to specialise and focus on other relevant and beneficial areas within the context of the built environment.

STUDENT POPULATION AND COMPOSITION

The Department of Architecture has a current student population of approximately 500. The breakdown is as follows:

MPhil	3 students
M.Arch	29 students
PG Dipl. in Arch.	158
BSc (Arch)	304
Total	494

RESEARCH ACTIVITIES

It is part of the curriculum of the Department for the Second and Third year classes to conduct research activities by way of field surveys in both rural and urban areas respectively, each year. These surveys serve as the basis for the respective years' studio programmes. They are also a great source of documented data for staff of the Department to use as resource for writing papers for refereed journals and conferences. The 5th year class (first year post-graduate class) also conducts detailed surveys within the Central Business District (CBD) of any regional capital selected for the year's work.

This year the 2nd year conducted a two week survey of Akyawkrom, near Ejisu whilst the 3rd year conducted theirs in Cape Coast, in the Central Region. For lack of funds and logistics to take the rather

large number of students to other regions, the 5th year, has for the past few years been conducting their field studies and research in the CBD of Kumasi. In addition to this, some members of staff have also conducted research on individual or group basis to facilitate the writing of papers, as could be seen under publications and conferences below.

COLLABORATION

As stated in last year's report, Trasacco Ltd, a major construction firm in the country, expressed its desire to collaborate with the Department for mutual benefit. In the light of this, five students were selected from the final undergraduate year to work in their design offices as well as construction sites after which one student (a lady) was awarded a scholarship package to help her complete the postgraduate programme after which she would be employed.

The Ghana Institute of Architects continues to visit the Department to help with the design studios and facilitate seminars and workshops. This year more than ten (10) of them, from Council Members (this includes the President of the Institute) to Associates members, have already been here.

At their last visit they made a proposal to the Department to provide a list of the Fellows in the Institute to come every semester to facilitate workshops and seminars purposely towards the GIA's professional examinations. This, it is believed, would give the students a better grounding when they are ready after their probationary years to take their professional examinations. This we feel brings the GIA closer to the students than it used to be.

INTERNATIONAL AFFILIATIONS

LINK/ INTERNATIONAL RELATIONS

KNUST/ University of Michigan, USA Academic Link

This link with the University of Michigan has been in existence for over seven years with their students coming over each year except the last two years due to a change of leadership. The professor in charge of the programme retired and it is believed when a suitable replacement is found the programme would continue as before.

KNUST/Katolieke Universiteit Leuven, Belgium

A Memorandum of Understanding (MOU) has been signed between KNUST and the Katholieke Universiteit Leuven in Belgium, to collaborate with the Department in various aspects of research and other academic interests which would be mutually beneficial to both institutions.

KNUST/ Nottingham Trent University, UK

Discussions are also on-going with the Nottingham Trent University of the United Kingdom, for some form of collaboration. The Dean of the School of Architecture, Design and Built Environment, visited the Department early this year to kick start this relationship. The Department recently had a video conference with him and some members of staff of the School to further discuss areas of mutual interests.

DEPARTMENT OF BUILDING TECHNOLOGY

INTRODUCTION

The Department remains the only place where building technology university graduates in Ghana are trained until recently. The first BSc 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.

The Department is phasing out its old programme, BSc Building Technology at the end of 2010/2011 academic year, and the following two new programmes are currently on going at the regular and distance education levels.

- BSc Construction Technology and Management
- BSc Quantity Surveying and Construction Economics

The Department is also running a two-year top-up undergraduate degree programmes in Construction Technology and Management and Quantity Surveying and Construction Economics with the Institute of Distance Learning (IDL). The bridging programme for students who will enter in the 2011/2012 has already started in April 2011.

The following postgraduate programmes are currently offered by the Department:

MSc Construction Management

MPhil Building technology

PhD Building Technology

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.

At the moment staff/student ratio stands at 30:1 as against 1:12 required by the University. A number of service lecturers from other Departments of the University such as, Engineering Surveying, Mathematics and Statistics, English, Operational Research, Financial Management and Introduction to Economics provide assistance to the department in areas.

STUDENTS

Population and Composition

The student population in the Department stands at 503. Out of this number, 474 are undergraduate students, 21 are MSc students, 4 are MPhil and 4 are PhD students.

Graduation

A total of 100 undergraduate students, six MSc and one PhD students are expected to graduate from the Department this 2010/2011 academic year.

RESEARCH

Lecturers in the Department undertake research in various areas. Publications emanating from these research efforts contribute to knowledge and address critical issues relating to the construction industry in Ghana. The Lecturers also assist undergraduate and graduate students in their research projects.

Current research activities in the Department include:

- Lean Construction Approach in the Ghanaian construction industry.
- Local and Foreign Contractors
 - The role of the government in boosting the local contractor's development;
 - factors affecting performance of local contractors as against foreign contractors;
 - joint venture operations between foreign and local contractors in Ghana.
- Client satisfaction criteria for measuring project performance.
- Challenges to research collaboration in the Ghanaian building industry
- Challenges faced by Ghanaian construction firms in trying to establish branches in neighbouring countries
- Motivating female graduate building technologists to remain in the construction industry.
- Causes and solutions to interpersonal conflicts among construction employees
- Improving quality standards in the construction industry
- Assessment of quality control measures adopted by selected construction firms in Ghana
- Global recession and its impact on the Ghanaian Construction industry.

SERVICE TO COMMUNITY

During the period under review, the Department provided the following services to the University and various organisations in the following capacity:

- Cost consultants and quantity surveyors on projects such as
 - rehabilitation of KNUST Teaching Hospital, (KNUST),

- Ghana Commercial Bank sponsored construction of offices and library complex for College of Architecture
- negotiating of new rates for the construction of Examination Halls and Lecturers' offices for the KNUST
- National Council Members of the Ghana Institution of Construction
- National Council Member and Fellows of the Ghana Institution of Surveyors (GhIS)
- External Examiners, Reviewers, and Moderators to various Polytechnics
- West African Examination Council as Examiners
- Representatives of the Chartered Institute of Construction (UK)
- Board Members of some Second Cycle Institutions.

LOCAL/INTERNATIONAL LINKAGE

The Department has strong linkages with all the ten Polytechnics in Ghana, providing services such as external examinations, reviews, and moderation, and also with KAAF University College, Accra. There are also strong linkages with professional bodies in the construction industry such as GhIS, CIOB, GIA and the GIOC.

Our Department is affiliated to the following two Universities:

Dept of Construction Management and Quantity Surveying
Faculty of Engineering and the Built Environment
University of Johannesburg, South Africa.

Faculty of Development and Society
Sheffield Hallam University
Sheffield, UK.

VISITORS/SEMINARS

The Governing Council of the Ghana Institution of Surveyors (GhIS) paid a one-day working visit to the Department on November 19, 2010. Members of GhIS 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 section manufactures tables and chairs for the University community as part of its teaching/research functions.

The Department is an approved Quantity Surveying practice office of the Ghana Institution of Surveyors. Some of the projects currently being handled by the Department include the KNUST Teaching Hospital (KNUST), Ghana Commercial Bank sponsored construction of offices and Library complex for College of Architecture, and negotiation of new rates for the construction of Examination Halls and Lecturers' offices for the KNUST.

NEW PROGRAMMES

The Department is in the process of running a two year MSc Procurement Management programme in the 2011/12 academic year, and preparations are underway to run BSc Procurement and Project Management soon.

DEPARTMENT OF PLANNING

INTRODUCTION

The Department of Planning is one of the oldest Planning Schools in Africa that is committed to the training of 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 tracing 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 with a total of 186 students and Development Planning with a total of 353 students. About 24 percent of the undergraduate students are females. The Department also runs three taught post graduate programmes. These are Regular MSc in Development Policy and Planning (50 students), Sandwich M.Sc. in Development Policy and Planning (98 students). The latter is organised during the holidays. The 3rd postgraduate programme is an international Masters Degree Programme in Development Planning and Management code named "SPRING" which has a total of 41 students.

The Department also offered Research degrees for MPhil (7 students) and PhD (11 students). The total number of students in the Department stands at 761 for the 2010/2011 academic year.

STAFF STRENGTH

The Department has 18 highly qualified and experienced permanent faculty members with diverse academic backgrounds and research interests. Two other faculty members are on study leave in Germany and England. Among the 18 at post are one Professor, one Associate Professor, four Senior Lecturers and 12 Lecturers. It is worthy to note that out of the 18 lecturers at post five are on post retirement contract. The student - teacher ratio (STR) of the Department is 1:43 against the standard benchmark 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 years to improve the STR and also encourage those without terminal degree (50%) to enroll for their PhD degrees and progress upward (i.e. promotions). We are hoping that the two currently pursuing their terminal degrees will return whilst two will also proceed on leave by the next academic year. We also expect to recruit at least three young lecturers to be able to handle our responsibilities.

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 Studies

The BSc Human Settlement Planning Programme, which was introduced in the 2005/2006 academic year is making steady progress with student population standing at 186 up from 179 last year. To ensure that the students who graduate from the programme are posted to the Town and Country Planning Officers in the country, the Department is continuing to engage the relevant stakeholders including Civil Service, the Ministry of Local Government and Rural Development, the Director of the newly established Local Government Service and the Town and Country Planning Department and the National Service Secretariat 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.

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 considerably. 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. However, it has been observed that the completion rate of the sandwich students is not good enough. In view of this, the Department has decided to suspend the programme for a year in order to ensure that all who have enrolled are able to graduate.

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

- i. Renewed its partnership agreement with the Dortmund University of Technology to run the SPRING Programme for another five years with an additional collaboration for a joint PhD Programme.
- ii. Signed a memorandum of understanding with the University of Cape Town, South Africa to implement the City Alliance Project under the auspices of the Association of Planning Schools in Africa.

REVIEW OF ACADEMIC PROGRAMMES

The Department has also initiated an internal review of the two undergraduate programmes and the MSc in Development Planning and Policy Programme. The curriculum of the research degrees has already been reviewed and a new programme aimed at ensuring prompt completion of studies is currently being implemented. The curriculum of the SPRING programme was reviewed jointly with the Department’s five other partner Universities in Dortmund in March 2011. The implementation of the new curriculum is expected to start in the next academic year.

In order to strengthen the Human Settlement Programme and the SPRING Programme the Department of Planning has acquired a set of equipment for the establishment of a GIS Laboratory at a cost of GH¢130,000.00 from its own resources. This is to enable student planners acquire relevant skills in the application of modern technology in planning.

With the return of the former Vice Chancellor of the University, Prof. K. K. Adarkwa to the Department, the publications effort of the Department has had a moral boost through his moral support. The staff of the Department have been able to publish nine articles/monograph and 16 conference papers during the year under review. The former Vice-Chancellor is leading a team to publish a book entitled “The Growth of the Tree” which covers the different aspects of the city of Kumasi. This book is based on an earlier one entitled the ‘Faith of the Tree’ which he edited ten years ago.

CONCLUSION

We are happy to note that the Department of Planning in spite of all the challenges is making every effort to fulfill 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 B.Sc. Human Settlement Planning Programme, the Department has heeded to the national call to train professionals to staff the nation’s ailing Town and Country Planning Department to plan and manage our cities and towns.

DEPARTMENT OF LAND ECONOMY

INTRODUCTION

The integration of economics and law in the study of the dynamics of land use, management and development provides the distinctive character of land economy. In this regard, the Department offers two undergraduate degree programmes: BSc Land Economy and BSc Real Estate in response to contemporary requirements of the land sector of the country. Both degree programmes are of four-year duration. However, while the former focuses on land management issues, the latter has the assessment of risk elements in the land development process of the real estate industry as its focus. Recent stability in Ghana’s macro-economic indicators and the emerging oil and gas industry has

added impetus to the development of the real estate industry. Thus, a major requirement for sustaining this progress is a real estate graduate programme equipped with broad-based theoretical knowledge of real estate principles and the relevant technical skills in risk assessment in the real estate industry which is largely corporate driven. There is also an opportunity for postgraduate study on the two-year MPhil Land Management degree programme. The hitherto long monopoly enjoyed by the Department in the training of land professionals at the tertiary level is gradually being broken. Today, other tertiary institutions are making inroads into the discipline of land economy and real estate. This requires concerted efforts on the part of the Department at staff recruitment and development to ensure that it remains the first choice destination for prospective land professionals, locally and internationally.

STUDENT POPULATION

The student population at the undergraduate level currently stands at 509. Of these, 342 (67%) are male and 167 (33%) female. In terms of programme distribution, however, 118 (23%) students are on the BSc Real Estate programme which is in its second year; while 391(77%) are on the BSc Land Economy programme. The number of undergraduate students who are Ghanaian fee-paying is 53 (10%), while the corresponding figure for foreign students is 6 (1%). At the postgraduate level, 30 (6%) of students are at various stages on the MPhil Land Management degree. A crucial factor in sustaining increases in student intake has been the lack of a corresponding improvement in educational infrastructure that will ensure a healthy environment for teaching and learning. The recommended student-teacher-ratio (STR) of 1:15 has been exceeded by more than two fold and but for the support of service lecturers, it would have been extremely difficult for the existing fulltime staff to deliver to the quality standards required.

PROFESSIONAL AND LOCAL AND INTERNATIONAL COLLABORATIONS

The Department is accredited as a training establishment for professional membership of the Ghana Institution of Surveyors. There is therefore a cordial and productive active professional relationship between the Department and industry, with feedback from industry periodically used to review programme contents. As a recognition of the role of academia by industry, members of the Governing Council of the Ghana Institution of Surveyors, visit the Department once annually for stakeholder consultations and discussions. As a result of the visit in November, 2010; the Department is collaborating with the Ghana Institution of Surveyors for an educational seminar on the real estate industry in Ghana in July 2011 under the auspices of the African Real Estate Society (AFRES). Similarly, in collaboration with the Institute for Housing and Urban Development Studies (IHS) of the Netherlands, a refresher course was organised for alumni of IHS in the West Africa sub region on the theme: Making Urban Settlements Work for the Poor: Were Land Reforms Enough in West Africa? This took place at the Engineering Guest House of KNUST, from November 15-26, 2010 and staff of the Department made a significant number of presentations as resource persons. During the year under review, the Department as part of its collaboration with the Millennium Development Authority in Ghana (MiDA), made available fifteen students to assist in undertaking systematic land title registration in the Awutu Senya pilot registration district of the Central Region. The rationale in engaging the services of students was a stop gap measure aimed at quickening the pace of work in the first ever land title registration exercise in a rural part of Ghana since the promulgation of the Land Title Registration Law, PNDCL 152 of 1986 with the view to improving tenure security of property rights holders. Plans are also afoot for research collaboration and student exchange programmes between the Department and the University of Aalborg of Demark following a visit to KNUST by Karin Haldrup of the University of Aalborg in December 2010.

CENTRE FOR SETTLEMENTS 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 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 Settlement 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 other aspects of human settlements in line with the Ghana National Development Policy framework on poverty reduction and wealth creation. The Centre's current issues of concern within research and development of the human habitat, include: population and employment, urbanisation, housing, vulnerability, livelihood analysis, gender, poverty, infrastructure and service, land use planning and physical development, governance and decentralisation, and settlements management.

The Centre's outreach programmes comprise the development and management of settlements and services for capacity building of relevant institutions. The Centre is involved in both undergraduate and postgraduate teaching and research in the College of Architecture and Planning of KNUST, Kumasi.

Promotion of knowledge

MPhil Programme in Urban Management Studies

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

The Centre has since the year 2009 successfully been running the two (2) short courses for lecturers, researchers, postgraduate students and staff of other tertiary institutions during the long vacation.

Building Construction Regulations and Environmental Management

The Centre continues to successfully organise 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. The workshop takes place during the long vacation.

TEACHING ACTIVITIES

The Research Fellows of the Centre for Settlement Studies participate in the teaching programmes (including students' project supervision) of the Departments at the College of Architecture and Planning, KNUST, Kumasi. These comprise the Departments of Architecture, Building Technology, Planning and Land Economy.

INCOME GENERATING ACTIVITIES

The Production Units of the Centre (i.e. Welding and Block Moulding Workshop) produce door and window components and furniture for sale to the public and on order from the various units of the University. These activities do not only generate income for the Centre but publicise the research quality value added by the Centre.

CENTRE FOR LAND STUDIES

The Centre for Land Studies is a research department within the College of Architecture and Planning of the Kwame Nkrumah University of Science and Technology; Kumasi, Ghana. It was formerly

known as Land Administration Research Centre (LARC) when it was established in 1971. The name was later changed to Land Resource Centre within the Institute of Land Management and Development (ILMAD) in 1996 and finally changed to Centre for Land Studies in 2005 when it became part of College of Architecture and Planning.

FUNCTIONS

The functions of the Centre for 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:

- a) Land Tenure and Policy Studies;
- b) Land Law and the Environment;
- c) Land use Planning and Management; and
- d) 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 and non-governmental organisations. At the international level, the Centre has provided services for agencies such as United Nations Development Programme (UNDP), German Technical Cooperation (GTZ), Department for International Development (DFID), United States Agency for International Development (USAID), World Bank, International Food Policy Research Institute (IFPRI), etc. The Centre has also carried out collaborative research with a number of international universities including the University of Wisconsin, USA; Greenwich, UK; University of Wallingford, UK; University of Birmingham, UK; University of Munich, Germany; etc.

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 nationalisation, which hitherto has been a thorny and rather politically sensitive issue is no longer part of the debate in the land reform process in 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 Reforms

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 focal 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 (2010/2011 academic year) the Centre conducted the following research projects.

- **Education and Awareness Creation on the Implementation of the new Lands Commission Act 2008, Act 767**

This project was undertaken under the Small Grant Program of the Land Administration Project (LAP) whose aim is to support activities of civil society and non-governmental organisations in institutional building advocacy, governance and participatory efforts in national land matters.

The focus of the project was on education and awareness in the forms of and in the interest of land acquisition and registration/documentation procedures and implications of the new Lands Commission Act, 2008, Act 767 for traditional leaders and land owning communities.

- **Equitable Forest Reserve Plantation Revenue Sharing in Ghana**

The Centre in collaboration with the Forestry Research Institute, Kumasi, successfully completed and published a research report on the Equitable Forest Reserve Plantation Revenue Sharing in Ghana.

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).

CONCLUSION

The Centre progressively achieved its mandate in the past. It is now uniquely positioned to do self marketing in order to generate enough funds for research. This is linked with efforts to recruit and revamp the staffing situation in the Centre.

COLLEGE OF ART AND SOCIAL SCIENCES

FACULTY OF ART

With the review of the Collegiate system being operated by KNUST, the then Faculty of Fine Art and Faculty of Industrial Art were merged into one, namely the Faculty of Art.

Hitherto, each of the Faculties was headed by a Dean but with the merger, one Dean was appointed to head the Faculty of Art.

The Faculty of Art currently has six departments which run various academic programmes at both the undergraduate and graduate levels.

The Departments are as follows:

Department of Communication Design

Department of General Art Studies

Department of Industrial art

Department Integrated Rural Art and Industry

Department of painting and Sculpture

Department Publishing Studies

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 well 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 eighty-six (586) students and the breakdown is as follows:

	<u>Textiles</u>	<u>Metals</u>	<u>Ceramics</u>	
First Year (Foundation)				165
Second Year	69	41	35	145
Third Year	66	25	27	118
Fourth Year	54	52	32	138

Sub total	189	118	94	566
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Post graduate MFA	12	3	520	
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Undergraduate and

Postgraduate

Total	189	121	99	<u>586</u>
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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 with Ceramics, Textiles and Metal Product Design 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 degree courses leading to BSc Ceramic Technology, BSc Textiles Technology and B.Tech. Clothing and Fashion.

The Department has been running postgraduate courses in Ceramics, Textile Design and Metal (Jewellery and Metalsmithing) since 2005.

DEPARTMENTAL COLLABORATION

- Collaboration with Development Dimensions Limited for the establishment of KNUST Jewellery Design and Technology Centre for the production of jewellery at the Metal Product Design Section - 2010 .
- Feasibility on production of glass containers and Glass blowing unit has been completed and an MOU between Georgia South Western State University and the Department has been signed and awaiting funding to start the mounting of the equipment.
- A linkage has been formalised by the Department for the Textiles Section and the GTP, ATL and Printex Ghana Limited for students' practical attachment. Occasionally, the Department also receives materials from these companies for textile students.

DEPARTMENT OF PAINTING AND SCULPTURE

ADMISSIONS

The Department of Painting and Sculpture admitted the following number of first year students into the BFA and MFA Programmes for the 2010/2011 academic year.

The details are:-

(1) BFA Programme

Painting and Sculpture	-	92 Students
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(2) MFA Programme

i. MFA (Painting)		4 Students
ii. MFA (Sculpture)	7	“
iii. MFA (Painting/Sculpture)	1	

Total Admission		104
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PROPOSED PROJECTS

The Department's Vision

The Department of Painting and Sculpture has been exploring the artistic and industrial properties of the *Broussonetia Papyrifera* or Paper Mulberry plant in the development of beautiful handmade papers in its printmaking programme.

This is a vision that is geared towards:

- 1) The integration of hand papermaking in the art education curriculum in Ghana.
- 2) Controlling the aggressive threat the plant poses to forest reserves in

their areas of propagation.

- 3) Building the capacity for exploring the possibility of transforming it into a major raw material base for many artistic and industrial products including roofing tiles, packaging and paperbacks.

CONSTRUCTION OF SCULPTURE GARDEN

The Department has initiated the move to develop a “Sculpture Garden” for the University to showcase Sculpture works of students, enhance the exterior landscape of the Museum edifice and help generate income for the University. This is yet to meet the University's assent.

UPGRADING OF PAINTING AND SCULPTURE DEPARTMENTS

Proposals for upgrading of the Painting and Sculpture sections to separate departments is yet to meet the University's assent.

THE DEPARTMENT OF PUBLISHING STUDIES

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 studies with students specialising in:

- Publishing Management/ Administration
- Printing Technology
- Book Design and Illustration

Two-Year MA in Publishing Studies

A 12 month Post-graduate Diploma in Publishing.

Short courses are available for industry players in various areas of the Book Industry

based on a thorough needs assessment.

DONATIONS

The Public Knowledge Project (PKP) Canada has donated an LCD Projector and books valued at one thousand four hundred and forty dollars \$1,440 towards the establishment of the Centre for Online Scholarly Publishing in Africa in our department.

COLLABORATION WITH INDUSTRY

The Ghana Book Publishers Association in collaboration with the Department organised a three (3) day Book Bazaar at the Prempeh Assembly Hall, Kumasi from 26th May 28th May 2011 to commemorate the World Book and Copyright that fell on April 23, 2011.

DEPARTMENT OF COMMUNICATION DESIGN

INTRODUCTION

The Faculty of Art comprises six 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-calibre 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.

TEACHING STAFF

It has been difficult over the years to recruit qualified and willing persons from industry to join the academic staff of the Department even though the conditions of service have improved considerably in the last few years. The staff-student ratio in the Department stands at 1:57 instead of the approved ratio of about 1:18. This continues to put stress and strain on the staff in the department. Efforts are still being made to recruit new staff.

UNDERGRADUATE STUDENT NUMBERS

1 st Year-	109
2 nd Year-	140
3 rd Year -	121
4 th Year -	130
	<hr/>
	500

GRADUATE STUDENT NUMBERS - 10

1 st Year-	6
2 nd Year	- 4
	<hr/>
	10

Total Number of Undergraduate and Graduate Students - 510

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

Foundation courses taught in 1st & 2nd years are drawing, photography and computer graphics.

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 fourth 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. Actually Miss Ralista Debra in November last year became the 1st successful candidate for this program and has already passed the College appointment and promotions interview. She is awaiting the University appointment and promotions interview.

AWARDS/SCHOLARSHIPS

Master Kwadwo Owusu Asante, 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.

Each year since 2007, the Best Final Year Student is given all-expenses paid Design Achiever's Award in *South Awards*. Master Kwadwo Owusu Asante has won this year's award and arrangements are being made for him to travel to Pretoria, South Africa to receive his prize.

Mr. Adam Rahman was awarded the University of Michigan African Presidential Scholar (UMAPS) and traveled to the United States of America for six months to undertake research activities in completing his PhD work and two other academic papers.

He also received a Certificate in Designing Learning from the American Society for Training and Development, Chicago, United States of America in December, 2010.

Mr. George Kushiator has also won the same fellowship for the 2010-2011 cohorts.

EXHIBITIONS/SEMINARS/WORKSHOPS

Poster for Tomorrow workshop organized and founded jointly by a France based organisation (Poster for Tomorrow) and the Communication Design Department of KNUST, Kumasi.

It was a one week workshop held at the Department of Communication Design for 1200 2nd year students of this Department.

The organisation paid the facilitator, Natalie Delgado's air ticket and per diem for this one week workshop. She was nominated from the University of Canada.

This was the second of such workshop held in Africa and we are hoping this will lead to a further collaboration between Poster for Tomorrow and KNUST.

The Department of Communication Design and the Canadian Embassy organised the Animation Festival in Kumasi and had exhibitions as part of the event. This was the first time the Department has hosted such an event.

The Festival had the theme "*Animation Express*" which was held on 20th April, 2011.

ANIMATION FESTIVAL 2011

Animation Express, a collection of award winning animation films were screened in Kumasi on Wednesday, 20th April, 2011. The event which was part of the Canadian film week programme was organised by Animation Africa with the support of the Canadian High Commission.

Madam Akua Ofosuhene, a UK based animator discussed her plans to train selected good animation students from the Department of Communication Design for a 3D animation film production. Preparations are underway to submit portfolios of the potential students for this production. Training will be done in South Africa and fully funded by Madam Akua's production company.

On the whole, participation from both students and lectures was remarkable. Reports obtained from the Animation Africa Company indicates that the Canadian High Commission was very satisfied with the organisation of the event and are looking forward to such collaborations with KNUST.

The event was an opportunity to bring quality animation of diverse style and techniques to the University community and provide a platform for discourse between academia and industry.

PACKAGING EXHIBITION 2011

The Department also participated in a Packaging Exhibition which was sponsored by Inductech held at the Prempeh Assembly Hall from 13th to 22nd April, 2011.

Mrs. Stuber, Senior Lecturer, made a presentation on “Finishing and Packaging”.

OPEN EDUCATIONAL RESOURCES (OER)

The Department is still contributing to the OER project in both infrastructure and personnel. Currently, two final year students are working on projects which will be used by the Open Education Resource.

The Department has assigned one room as a permanent OER office for technical production of all projects.

EQUIPMENT

The Provost’s Office donated two (2) cameras for our Video Production Section.

The Department purchased about four (4) cameras and two (2) projectors.

REHABILITATION

Rehabilitation of the old 2nd year lecture room is almost complete and students attended lectures and wrote their final year end of semester examination in this building.

The delay in releasing funds from the Finance Office has stalled the ceiling and other works such as fitting fans and lights in the rooms.

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 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 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, Art Therapy, African Art, Art History, Research Methodology and Thesis Writing to first, second and third year undergraduate students in the Faculty of 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 Researchers, Art Educators, Art Critics, Art Historians, Art administrators, Curators and experts in allied fields. The Department is also absolutely 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.

The academic staff is supported by two administrative staff, one messenger and one grounds man. The combined staff ensures the provision of quality education to the students in the Department.

NEW PROGRAMMES

The Department has recently restructured its academic programmes to make them more research based/oriented.

The Department is also in the process of finalising 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, a big research studio and a well-stocked library.

ACHIEVEMENTS

The past year witnessed a quantum leap of developments in the area of facilities, staff recruitment and development, research and collaboration with other institutions. Notable amongst them are:

New Project

Completion of studio, toilet facilities, 1 store room and an office

The Department since its inception has no toilet facilities and permanent spacious studio for graduate students. Now the students can boast of 4 ultra modern toilets which they have started using since the beginning of the second semester (2011). With the assistance of the Ghana Commercial Bank(¢700.00), Donyma Steel Complex, Kumasi(¢560.00), Dr. Joe Adu-Agyem(¢5,200.00), Agya Owusu Ltd(¢100.00), Adom Super Blocks which supplied about 100 blocks), J.A. Adjei Enterprise (¢100.00), contributions from the Students' Association (AESA) and a few individual students, the project which cost a total of ¢32,000.00 was fully completed within a record time of six months.

Refurbishment of lecture rooms

Research, teaching and learning received a boost with the painting of all the lecture rooms with two of them airconditioned to make them more comfortable for seminar presentations, viva voce and lectures. This is unprecedented in the sense that it is the first of its kind in the Faculty of Art.

During the year under review, the Department was able to graduate 18 PhDs which is also unprecedented in the annals of the history of the University since its inception. Another set of 18 candidates shall graduate with PhD degrees during the coming 45th congregation this year.

Staff Recruitment and Development

The Department has heightened its drive to recruit high calibre of faculty members to beef up the existing staff to efficiently improve and replace these retired and others on contract as well. During the period under review, only Dr. Eric Appau-Asante has been appointed as lecturer to the

Department. The rest, about five(5) in number have successfully gone through the interview at the College and Appointments Committee level for appointment as lecturers and currently waiting for the second phase of the interview at the University level. They would be mentored to eventually take over the academic responsibilities of our retired senior members as well as those on contract.

Staff development also received special attention. Two of the senior academic members were promoted to the rank of Senior lecturers.

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 to build the capacity of our MA and MPhil Art Education students to design and create multi-purpose instructional materials suitable for teaching various subjects across the Basic, Secondary and Teacher Training curricula.

There is a collaborative research project between our Department, Local Primary, Junior High, and Senior High Schools, and the International Paint Pals of Atlanta, Georgia, USA.

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 DSP, one Dr. Anthony Dadzie who is an alumnus 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 a few M.A. Art Education students to gain experience and also help in teaching inmates of the prisons to acquire vocational and technical skills. In view of this, Dr. Joe Adu-Agyem donated ₵100.00 on his own behalf to assist the reformation school to purchase stationery for their practical work of which a letter of appreciation was sent to him by the Deputy Director of Prisons/Regional Commander, Mr. Ackom Gyeedu Kwame.

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. 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.

The Department has designed and published a “Format for Presentation of Graduation thesis for students” (Dec. 2010) to assist in their thesis writing.

Donations

In January 2011, two copies of a book titled: “Basari Fire Dance As a Source of Cultural Tourism were donated to the University Library, through the Head of Department which was acknowledged on 2nd February, 2011.

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.

FACULTY OF SOCIAL SCIENCES

The Faculty of Social Sciences is still the largest faculty in the entire university in terms of number of departments and hence the number of undergraduate programmes. The seven constituent academic departments of the faculty are:

- 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 Chief Officers of the Faculty are:

- Professor J. Ohene Manu - (Dean of the Faculty)
- Ms. Cecilia Addison - (Faculty Secretary)

- Mr Seth Gerchia - (Faculty Accounting Officer)
- Mr Nicholas Nyamekye - (Faculty Librarian)
- Mr Felix Asante - (Faculty Examinations Officer)

The Cultural and Tourism section which offers a BA Degree in Culture and Tourism comes under the administration of the Department of Geography and Rural Development. Plans are being advance to up-grade that section into a Department of Culture Tourism and Hospitality. Each Department runs its own undergraduate programme(s). In all the faculty offers eleven undergraduate programmes. The Department of History and Political Studies runs separate bachelor programmes for History and Political Studies. The Department of Geography and Rural Development offers two programmes; and the Department of Modern Languages also offers two separate programmes in French and Akan. At the beginning of 2011/2012 academic year the Department of Sociology and Social Work will offer two separate programmes, one in Sociology and the other in Social Work.

All the undergraduate programmes are also offered under our Part-Time/Parallel option. Indeed we are proud to mention that the first batch or pioneer graduates under the Part-Time/Parallel programmes option are scheduled to receive their certificates during this august Congregation together with their regular counterparts.

The students-lecturer ratio is still much higher than the mandatory ratio. We are therefore still in the process of building greater staff capacity to reduce the teaching load per staff especially at the undergraduate level to enable lecturers have sufficient time to do research.

The Faculty has benefited from the benevolence and cooperation of institutions, national and international agencies, and private personalities. These have been featured in the various Departmental Reports. We continue to collaborate with some universities from Denmark, China (UEST), Canada, United Kingdom, the USA and a host of institutions across the African continent. The French embassy in Ghana, as usual provided technical and financial support especially to the Department of Modern Languages during the year under review.

The vision of the faculty has not changed. We seek academic excellence in teaching and research to support socio-political and eco-cultural advancement of Ghana. Our mission therefore is to build the desired human resources and capacities to achieve our strategic goals.

The lack of adequate physical infrastructure is still our greatest challenge. We therefore appeal to all and sundry i.e. government agencies, the University authorities, the alumini and friends of the Faculty to support us in our bid to put up a building complex to house the Faculty of Social Sciences so that we can serve the University and the nation more effectively. In particular we appeal to the University authorities to grant us the permission and indeed the land for us to put up a Social Sciences Faculty Building. This way, our current premises would be exclusively reserved for and inhabited by the Faculty of Arts and the Humanities. We believe that the time has come for two faculties namely the Faculty of Social Sciences and the Faculty of Arts and the Humanities to operate side by side even in an institution dominated by Science and Technology such as ours.

DEPARTMENT OF ENGLISH

INTRODUCTION

The Department of English, in spite of the challenges it has faced this past academic year, has provided all services required of it by the University. The challenges were posed by its relocation to the former premises of the Mathematics Department on the first floor of the Social Sciences building,

and by the difficulty of recruiting more qualified staff to handle the surge in demand for the teaching of English to non-English speakers, and for graduate teaching and supervision.

TEACHING

The Department continues to teach English language and literature to its undergraduate students. It also provides similar services in the special areas of Communication Skills and Literature in English to all first and second year students of the University. Challenges that emerged during the year in the provision of the latter services were promptly addressed with the assistance of lecturers, many of whom quickly stepped in to complete the year's teaching schedule.

The Department also recruited graduate students comprising its own fresh graduates as well as many from sister universities to pursue their MPhil and PhD. Though lack of qualified personnel has kept graduate numbers low over the years, it is envisaged that with more senior members of the Department on the verge of completing their doctorate degrees the numbers should double by the 2012/2013 academic year. The Department is especially proud to announce that in November of 2010, two of its first PhD candidates graduated. One of them should join the Department in the 2011/2012 academic year.

PROJECTS

Institutionalisation of English for foreign students

At the beginning of the 2010/2011 academic year, the Academic Board tasked the Department to work on a proposal for the institutionalisation of English for students from non-English speaking countries. This request had been prompted by the large number of such students currently seeking admission to study at KNUST with very little spoken and written English. The Department has been working on such a proposal and is currently working out the budget for a Language Laboratory facility which would facilitate the kind of immersion in the language that such students require. By the end of the academic year, the entire proposal should be ready for the Academic Board. In the meantime, the Department, during the year, has responded positively to requests from individuals and Department for small numbers of such students to undergo a fast tracked six-week English immersion programme. When the proposal passes scrutiny, the Department should be better equipped to provide this service on a larger scale. The Vice-Chancellor has granted us the use of a large space within the New Examination Hall building for the establishment of the Laboratory. The Department is liaising with the Development office for its internal design.

Review of English Courses

The Department was very busy at the beginning of the year to prepare itself for the visit of the National Accreditation Board. This visit came at an auspicious time because the Department was poised to review its courses. Discussions held with experts were very eye-opening, and some of their suggestions have been incorporated into the review which, upon approval, should provide undergraduate students with better preparation in both language and literature which should benefit them in their chosen careers more practically. The Language Lab would also play a significant role in the study of English.

ENDOWMENTS

English, having become a fully established international language receives very little attention from international and even local institutions that are fully aware of the importance of English to national development. Therefore the Department receives no assistance from international agencies such as the British Council or the USIS/USAID. However, old students of the Department occasionally organise "book drives" the results of which benefit the Department in no small way. During this academic year, several boxes of books were donated to the Department by Dr. Yaw Adu-Gyamfi of the Liberty University in Virginia, USA.

CONCLUSION

In spite of the challenge of a dearth of qualified teaching staff, and of furnishing and equipping the new offices of members of staff, the Department has faced these challenges squarely to sustain itself and the services it provides to the University community.

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 characterised with scientific modernity.

ACADEMIC STAFF AND THEIR EXPERTISE

The Department is staffed by qualified persons who combine academic excellence with a strong sense of moral and religious commitment. The following represent the core academic staff and part-time lecturers and their areas of specialisation:

STUDENT POPULATION

The Department has a total of 283 Students. The breakdown is as follows:

Undergraduate

	Male	Female	Total
Year 1	29	11	40
Year 2	67	42	109
Year 3	28	13	41
Year 4	42	23	65
			<u>255</u>

Post-graduate

	Male	Female	Total
Year 1	11	-	11
WritingUp Stage	15	2	<u>17</u>
			<u>28</u>

The Students Teacher Ratio (STR) is about nineteen to one (19:1).

STAFF RECRUITMENT

To strengthen the academic staff, Rev. Fr. Dr. Victor Selorme Gedzi, Rev. Fr. Dr. Joseph Oppong and Rev. Fr. Dr. Patrick Osei-Poku have successfully gone through an interview at the College Appointments and Promotions Committee level for appointment as lecturers and are currently awaiting the second phase of interview at the UAPC level. Sheikh Zakaria Seebaway a part-time lecturer has been interviewed at UAPC to change his status from part-time to full time.

ACADEMIC ACHIEVEMENTS

Within the year under review the Rev. K. Opuni-Frimpong completed and successfully defended his PhD thesis.

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.

CONCLUSION

Even though as a very young Department, we are confronted with many problems, the past years have been good and the future prospects appear bright. No doubt the Department of Religious Studies has come to stay. The Department intends making progress every year.

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 organised 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.

EDUCATIONAL TRIPS

The Final Year History students went on a field trip in March 2011 to the Greater Accra and Eastern Regions. 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 Akrofi-Christaller Institute of Theology and Culture, the Cocoa Research Institute and also interacted with traditional leaders at Sesame, Osu and Sempé. The students wrote and submitted reports that revealed the knowledge acquired through these trips.

The Political Studies Students' Association organised 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 on 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. The Department procured two LCD Projectors.

The Department hosted Professor Charles Adom-Boateng a Political Studies Lecturer from Kean University, USA who has been on sabbatical for the academic year. He has been teaching first, second and final year Political Studies students. His stay in the Department has made it possible to add new and exciting courses to the programme.

PHD TRAINING IN THE DEPARTMENT

Three PhD students trained in the Department as part of the University's Staff Development Programme successfully defended their theses in January 2011 and are expected to be awarded their certificates in Historical Studies during the 45th Congregation in June. It is anticipated that they will join the ranks of the Department to boost the staff strength.

The Department also hosted three official representatives of the U.S. Embassy who delivered a paper to staff and students on the following topics

- President Obama's prospect for a 2nd term in office
- US History and Politics,

- Studying in the US and how to apply successfully for U.S Visas

Also in conjunction with the Centre for Democratic Development, the Association of Political Studies students watched a film and deliberated on conflicts in Africa on 15th February 2011.

DONATIONS, GRANTS AND COLLABORATIONS

The Department received book donations from two sources:

1. Two copies each of Mr. Ben Ephson's books, *Countdown to 2004 Elections*, *The Countdown to 2008 Elections* and *Ben Ephson on the 2008 Elections*.
2. 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.

CONCLUSION

The Department has had an active and fruitful academic year. Both Senior Members and students have participated in academically challenging and rewarding programmes in the course of the year and anticipate that the trend will continue in the coming year.

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 the programme is still high. The Department delivers over forty-eight (48) courses on the average, per semester to an undergraduate student population of about one thousand, two hundred and twelve (1,212) with staff strength of thirteen (13) excluding four (4) who are either on sabbatical or study leave. This makes it one of the largest Departments in the University in terms of student numbers.

The Department also provides service lectures to the following Colleges in the University: Science, Health Sciences; Agriculture and Engineering.

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 range of courses comprising 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 Degree and the Vice Chancellor's Initiative of MPhil/PhD at the Post-graduate level with the Three (3) year PhD Geography and Rural Development Programme offered separately.

Senior Members in the Department consist of One (1) Full Professor, One (1), Senior Lecturer and fifteen (15) Lecturers. The head of department is assisted by one (1) Administrative Assistant.

STUDENTS' ACHIEVEMENT AND PARTICIPATION

Staff and Students' participation in club activities and field trips to promote teaching and learning have 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 GEOSA's vision of assisting the Geography and Rural Development Department to secure a Remote Sensing and G.I.S. Laboratory for students has reached an advanced stage. Currently a large Hall has been secured adjacent to the old Department of Computer Sciences computer laboratory and twenty (20) state of the art computer tables donated by GEOSA 2010 group, installed. These tables go with twenty (20) modern chairs donated by the Provost's office of College of Art and Social Sciences last year (2010) and twenty five (25) LCD computers donated to the Department by SUNY Geneseo since 2010 through the help of the former Head of Department, Dr. (Mrs) Eva Tagoe-Darko.

The Department's cartographer, Mr. E.K. Garsonu has started teaching our students with installed software in Remote Sensing practicals awaiting eventual installation of internet connections (networking) to the hall. Estimates have since March 2011 been submitted through the technical expertise of Mr. Abraham Brew-Sam and the Faculty ICT officer for procurement.

Further, the GEOSA 2011 group have targeted the purchase of a photocopier machine to photocopy materials for students at a reduced cost and also to earn some money for the Association. This has also been submitted to the Director of Procurement and GEOSA Executives have since 27th April, 2011 defended the purchase on behalf of the Association before the KNUST Procurement Committee.

Through the efforts of the two Students Associations namely, GEOSA and the Tourism Students Association (TourSA) in the Geography Department, students benefited from field trips to Lake Bosumtwi, Volta and Northern Regions during the 2011 academic year. These complemented the assistance of the Department and Faculty in facilitating field trips for Third year Geography and Rural Development students to Asante Mampong and Central Region in March 2011 as field exposures to match theory with practice in their various courses in the Department.

FOREIGN COLLABORATIVE/PARTNERSHIPS

Our international linkages remain with the following foreign universities. 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. As a result of the collaboration with SUNY Geneseo, the Department has set up a Remote Sensing and Geographic Information Systems Laboratory to service its students at the post-graduate and the undergraduate levels respectively.

A process of initiating another linkage with the University of Delaware USA for the Culture and Tourism programme to help develop our Hospitality section of our Tourism programme has started.

Another linkage with the University of Oklahoma in the United States of America is in the pipeline. An initial visit by three Senior Members (Professors) from Oklahoma to the Geography and Rural Development Department of KNUST took place in 14th December, 2010 which was quickly followed by a book and publications donation to our newly created Department at Reading Room/Publications on 25th April, 2011. This was in fulfilment of a promise by the advance team of three when they visited and took pictures of the room earmarked for such purpose.

FUTURE PROJECTIONS

The Department's hope of seeing itself in more spacious office accommodation appears to have been met for now with the allocation of the former Computer Science Department office to the Department of Geography and Rural Development, through the intervention of the Vice-Chancellor's Office and the Dean of Faculty of Social Sciences. Additional three (3) offices with the capacity of accommodating six (6) lecturers have been allocated to the Department at the New Examinations Hall Complex.

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 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 departments in the Faculty of Social Sciences in the College of Art and Social Sciences.

DEPARTMENT OF MODERN LANGUAGES

INTRODUCTION

The Department of Modern Languages made up of two sections, French and Akan, has fervently engaged in the core areas of teaching at both graduate and undergraduate levels. It is also involved in research and service to the community

TEACHING

French and Akan – Bachelor of Arts Programme

French Language, Linguistics, French and Francophone Literatures, the Akan Language, Linguistics and Literature are still the primary focus of teaching and research at the undergraduate level in the Department of Modern Languages.

The year abroad programme, from which the students of French have once more benefitted, (thanks to the generosity of the Ghana Government) still constitutes a significant component of the French Section's BA programme.

MPhil, PhD Programme

In the year under review, fifteen candidates were admitted to read the MPhil French programme and one candidate for the PhD programme, bringing the number of PhD candidates to five.

The Department is in the process of reviewing its academic programmes and adding more courses; foreign and local languages, with the aim of rebranding them to make them more attractive in view of current developmental needs of Ghana.

OUTREACH PROGRAMMES

The Department continues to offer a number of service courses to the University community such as French for communication (Beginners and Intermediate levels) and Akan for medical students. These outreach programmes have gradually transformed the Department into undoubtedly one of the largest academic Departments of the University. For lack of Chinese volunteers the Basic Chinese programme could not come on. Plans are far advanced to get it back next academic year.

STAFF

The strength of permanent teaching staff for the year under review was 13 and for part-time 2. Mr. George Appiah was appointed to strengthen the teaching of Akan, thus reducing the heavy work load of the Akan teaching Staff. The Department also made use of four demonstrators in the teaching of service courses and tutorials. 10 national service persons were also taken on to help with work in the Department.

RESEARCH

Members of the Department are actively carrying on individual and joint research projects and several of these have been accepted for publications. For the purposes of organising research, a Research Unit has been set up in the Department to encourage collaboration and enable senior colleagues to mentor the younger ones in their research to boost publications.

SERVICE TO THE COMMUNITY

The Department undertakes translations of all texts (literary and scientific, functional or basic) from French to English, from English to French.

The Department continues to enjoy high patronage of the learning of French as a service course. Akan is offered as a service course at the School of Medical Sciences, KNUST.

OTHER ACTIVITIES

The Department of Modern Languages was for the first time represented at the Trade and Technology (TRATECH) Fair, held at KNUST to market and enhance the image of the Department.

The French Section in collaboration with the Alliance Française in Kumasi celebrated the Francophone week which was well patronised and sponsored by Latex Foam, Nouvelle Parfumerie Ghandour, Sir Max Hotel, Coca Cola Bottling Company, MTN, Capital Radio and Azar Paint.

At the Student Level, the Ghanaian Language Students Association (GLASA) was inaugurated and the Department had the privilege of hosting the renowned Prof. Kofi Agyekum of the University of Ghana, Legon and Peace FM fame as the Guest Speaker.

INCOME GENERATING ACTIVITIES

Even though the Department has not registered remarkable returns in terms of income generation, it has during the year under review, made some income for itself and its members from translations.

Plans are far advanced to step up income generation activities in the Department where more work in the area of Teaching of French for Specific Purposes, Akan for Foreigners and Basic Chinese are intended.

A Transbureau for a more coordinated service of translation and interpretation of languages in the areas of business, literary, scientific and technological innovations as well as conference interpretation services is included in the latest development on income generation activities.

COLLABORATION WITH UNIVERSITIES

A Memorandum of Understanding was signed between the University of Strasbourg and a consortium of universities in the West African sub-region including KNUST. This collaboration culminated in the Department of Modern Languages hosting the 3rd Inter-University Seminar for Doctoral Studies in Literature with a visiting Professor from Strasbourg, Prof. Romuald Fonkoua. Senior Members and Doctoral students from the four public universities were present.

BENEFACTORS

The French Section of the Department of Modern Languages continues to receive support from the French Embassy. Once more over the past year, the French Embassy made valuable donations in journals, basic texts and reference books. To help in capacity building, five lap-top computers were also donated by the French Embassy to the five PhD students in the Department.

The French Embassy has provided support for the refurbishment of the Graduate classroom in the bid to making it a multimedia research centre for graduate studies. They also sponsored the third Inter-University Seminar for doctoral studies hosted by the Department in April 2011. They have also sponsored various cultural activities on the campus organised in collaboration with the Alliance Française.

The French Section is, indeed greatly indebted to the French Government for its constant support and encouragement in all activities. We are equally grateful to our numerous sponsors.

CONCLUSION

The Department of Modern Languages is working towards positioning itself to training and equipping more students to meet the developmental needs of the nation and also making them very relevant for the growth of the sub-region and humanity in general.

On the whole, both academic and administrative staff of the Department have worked assiduously to meet its core responsibilities in the areas of administrative work, 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 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.

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. Students can pursue the programme through Distance Education or Parallel Degree Programme (evenings), or as regular students. With the current student population of 880 the Department is one of the largest in the University. The breakdown of the student population is as follows:-

Department	Year One	Year Two	Year Three	Year Four	Total
Sociology & Social Work	267	178	218	217	880

Beginning 2011/2012 academic year, the Department would run two degree programmes: Bachelor of Arts in Sociology and Bachelor of Social Work. In addition the Department is planning to mount sandwich and top-up courses for diplomates in Sociology, Social Work, and Social Administration.

GRADUATE PROGRAMME

The first batch of students for the Department's MA in Sociology Programme are graduating this year, 2011. The total number of graduate students currently stands at fifteen (15).

The Department is working on proposals for consideration by the School of Graduate Studies to offer MPhil/PhD in Sociology. This will facilitate staff development and also reduce the cost of further studies abroad. The proposed programme would be ran with Department of Sociology of the State University of New York (SUNY) Geneseo, USA.

DEPARTMENTAL ACTIVITIES/EDUCATIONAL TRIPS

1. The Department and the Sociology and Social Work Students Association organised an educational campaign on Child's Right at the Kumasi Children's Home in September during the 2010 Universal Children's Day. Speakers spoke on 'the Plight of the Ghanaian Child'. A number of items including sanitary items and consumables were donated to the inmates of the Home.
2. The Department again embarked on an educational tour to the Gambaga witches camp in the Northern region of Ghana on 5th March, 2011. Once again donation was made to the inmates. Clothing, footwear, and exercise books for the children of the inmates were among the items donated.
3. Students of Deviance and Criminology from the Department also undertook educational tour to the Kumasi Central Prison on 7th April, 2011. The visit enabled the students to gain practical appreciation of the functions, problems and challenges of the Ghana Prison Service. A number of sanitary items were donated to both Kumasi Central Prison and the Kumasi Female Prison.
4. Ms Harriet Takyi pursued a five-month Fulbright Program at the California State University Sacramento (CSUS) USA. from 1st September, 2010 to 31st January, 2011.

5. As part of Department's collaboration with the College of Social Work, University of Utah, USA, two of our students had scholarship to pursue masters in Social Work at the University of Utah, USA.

COLLABORATION WITH OTHER UNIVERSITIES

The Department continues to enjoy a fruitful collaborative relationship with the underlisted Institutions.

- i) College of Social Work, University of Utah, Salt Lake City, USA.
- ii) School of Social Policy and Practice University of Pennsylvania, Philadelphia, USA
- iii) Department of Sociology, State University of New York (SUNY) Geneseo, USA
- iv) Discussions are going on for possible collaboration with Institute of Diversity, University of Georgia, Athens, USA and Department of Social Work, Western University, Chicago, USA.

BENEFACTORS

The Department wishes to express its profound gratitude and appreciation to the Kumasi Metropolitan Assembly (KMA), Oson's Chemist Ltd, KEK Insurance Company, Regional Commander and staff of Kumasi Central Prisons and other institutions and individuals who offered the necessary assistance, both in cash and logistics, that made it possible for the Department to achieve its objectives for the year under review.

INCOME GENERATION

The Department is participating in the parallel B.A Degree Programme in the Faculty. In addition a committee has been tasked to submit a proposal for sandwich and top-up courses for diplomates in Sociology, Social Work and Social Administration.

The Department is also contemplating on offering consultancy services to individuals, institutions and the general public for a fee.

CHALLENGES

The Department is one of the largest in the University but is faced with inadequate teaching staff. Consequently all the lecturers are saddled with the teaching and supervising of so many courses and students at the detriment of their health, research, and community service. Office space to accommodate staff is also inadequate. As such lecturers have to share small cubicles which do not augur well for academic work and research.

CONCLUSION

In spite of these challenges, the Department is carrying out its duties with dedication. We are hoping the teaching staff would improve to relieve staff of some of their teaching load so that they can do more research and service to the community.

DEPARTMENT OF ECONOMICS

INTRODUCTION

The Department of Economics is one of the 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 high 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 programme and others who take Economics as a 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. Postgraduate student population for the year was 28.

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). Discussions have been initiated for collaboration with the Economics Section of the State University of New York at Geneseo.

FACULTY OF LAW

INTRODUCTION

The Faculty of Law continues to offer undergraduate degree programmes leading to the award of Bachelor's Degree in Law (LL B).

The LL B is a taught course with emphasis on both theory and practice. The practical aspects include moot courts, field trips, public outreach and vacation training programmes which are to help enrich students' practical experience and orientation.

The Faculty also continues to admit students from jurisdictions other than Ghana with Nigerian students constituting the majority of foreign students. For the 2010/2011 academic year, twelve (12) foreign students were admitted into the Faculty.

ACCREDITATION OF PROGRAMME

The National Accreditation Board visited the Faculty for the second time and endorsed efforts being made to place the Faculty at par with international standards

RESEARCH AND PUBLICATION

In recognition of his research output, the Dean of Law was elected to Senior Associate Fellowship of the Institute of Advanced Legal Studies, University of London.

A significant number of academic papers and books have been published by Senior Members of the Faculty.

SERVICE TO THE COMMUNITY

The Faculty members continue to offer their skills and expertise, through consultancies, legal advice and training programmes to members of the University community and the outside public. Lecturers continue to serve on investigatory committees set up within KNUST.

In addition, the Faculty offers service courses to several other Faculties/Departments in KNUST including School of Business, Department of Building Technology, Department of Land Economy, Faculty of Biosciences and Faculty of Social Sciences.

STAFFING

The Faculty of Law has very experienced and hardworking academic staff made up of eighteen (18) members. The staff consists of one (1) Professor, one (1) Senior Lecturer, thirteen (13) Lecturers and three (3) Assistant Lecturers. Three more lecturers are expected to join the teaching staff for this academic year. Five (5) lawyers and products of the Faculty of Law who were called to the Bar have been engaged as Teaching Assistants to support the teaching staff.

The Faculty also has efficient and effective administrative staff with an additional transfer from the Central Administration of a Senior Assistant Registrar in the person of Mr Kofi Appiah Koranteng to strengthen the Faculty's administration.

ACADEMIC EXCELLENCE AT THE GHANA SCHOOL OF LAW

Our students have been excelling at the Ghana Law School. At the 2010 Enrolment and Call to Bar of new lawyers at the Ghana School of Law, eight (8) out of thirteen (13) students who were awarded prizes were from the KNUST Law Faculty.

ESTABLISHMENT OF LAW CLINIC

The Faculty is putting in place a Law Clinic with the assistance of the Canadian lawyers abroad (CLB) and the University of Ottawa. One of the Teaching Assistants, Mr Ebenezer Adjei Bediako is currently undergoing training at the University of Ottawa Law Clinic. He will be appointed at the Law Clinic at KNUST on completion of the training.

STAFF STUDENT RATIO

With increase in the number of teaching staff and decrease in student numbers, the teacher student ratio has improved considerably to maintain quality of output.

STAFF TRAINING AND DEVELOPMENT

Two members of staff have been awarded scholarships, one for PhD studies in the UK under the Commonwealth Scholarships Scheme, and the other under Fulbright Fellowship Scheme.

The Faculty Librarian undertook training at the Institute of Advanced Legal Studies Library in London at the beginning of the academic year.

SIR ARKU KORSAH LAW LIBRARY

The Faculty has improved the stock by procuring additional text books, law journals and law reports for the Sir Arku Korsah Law Library.

DONATIONS

Dr Elizabeth Archampong, a Lecturer and Head, Department of Private Law has donated a sizeable number of law books in the area of gender studies to the Sir Arku Korsah Law Library.

LL M PROGRAMME

Plans are far advanced to start the LL M Programme in October 2011. The programme has been endorsed by the National Accreditation Board and the Academic Board of KNUST.

OPENING OF A CAMPUS OF THE GHANA SCHOOL OF LAW AT KNUST

A campus of the Ghana School of Law in Kumasi was inaugurated at the Faculty of Law by the Ghana Legal Council in October, 2010, ushering in the first batch of students from the KNUST Faculty of Law for the professional programme.

CONSTRUCTION

Construction of a new office for the Dean – Works are nearing completion

SCHOOL OF BUSINESS

COLLABORATIONS WITH INDUSTRY AND EDUCATIONAL INSTITUTIONS

Accreditation by the Chartered Institute of Logistics and Transport (CILT)

The Chartered Institute of Logistics and Transport (UK) is the world's leading professional education body in Logistics and Transport. This initiative is a collaboration between CILT Ghana and KNUST to jointly run CILT programs at KNUST. CILT has elected KNUST as a Corporate Member of the Institute and this opens up a mutual collaborative relationship for strengthening Logistics and Supply Chain training and development at KNUST. This project was initiated over a year ago when a team from CILT paid a courtesy call on the former Vice Chancellor, Prof. K. K. Adarkwa who is a fellow of the institute. After several visits by the CILT assessment team during which the team toured KNUST and KSB's facilities, KSB's application for accreditation was approved and payment of £2,054 was made by KSB for accreditation to run the following CILT Professional Programmes;

1. Certificate in Logistics and Transport
2. Diploma in Logistics and Transport
3. Advanced Diploma in Logistics and Transport.

In addition to the accreditation to run CILT professional programmes, accreditation has been given for KSB's Bachelor and MBA Programmes in Logistics and Supply Chain. This will provide KSB students with CILT exemptions when they seek professional membership.

CURRENT STATE OF INITIATIVE

Accreditation has been received and plans are underway to launch the CILT-KNUST programs on the 18th of February, 2011. The first batch of the CILT programme will start in April this year.

The Faculty Academic Board has approved the running of CILT Programmes. KSB hopes to present the CILT proposal at the next College Board Meeting.

IMPACT OF INITIATIVE

KSB's collaboration with CILT is borne out of the current trend to provide demand-driven programmes which provide a win-win situation for the parties involved.

The accreditation to run CILT programmes will expand KSB's programme offerings and position KSB in Ghana as a leading tertiary institution for the training of students in logistics and Supply Chain to enable them take advantage of employment opportunities that the oil discovery present.

SPECIAL INITIATIVES ADVANCED BY THE DEPARTMENT OF INFORMATION SYSTEMS AND DECISION SCIENCES (ISDS)

WEST AFRICAN INSTITUTE FOR SUPPLY CHAIN LEADERSHIP

The West African Institute for Supply Chain Leadership (WAISCL) - KNUST, is a Supply Chain Management (SCM) focused education, research and training unit within the KNUST School of Business. WAISCL is a collaboration between KNUST School of Business (KSB), the PanAvest Foundation and Dr. Douglas Boateng. The WAISCL project is housed within KSB. WAISCL hopes to become the leading SCM education and training partner of choice for selected organisations and the most relevant supply chain education and training partner in Western Africa.

Currently, WAISCL is the first of its kind in the sub-region and in the future will be establishing international partnerships with both industry and academia in order to enable it provide cutting edge research that is industry relevant as well as provide world class training solutions and executive education.

The institute aims to provide innovative, practical and tailored supply chain management education, training and sector specific research that will enable enterprises to become not only sustainably profitable, but also have the capabilities to continuously outsmart the competition in their chosen markets. The aim of WAISCL will be observed through executive education offerings as well as series of events; workshops, seminars and conferences.

Current State of Initiative

WAISCL was launched on the 15th of April, 2010 at the Great Hall by the then Pro Vice Chancellor, Prof. W. O. Ellis. An MOU between KNUST, PanAvest and Dr. Boateng has been reviewed by the Legal Services Unit of KNUST and awaiting approval by the Vice Chancellor for appending of signatures by the parties involved.

KSB has already allocated resources for the housing of WAISCL at its new building and a plan is underway to roll out WAISCL programs immediately the MOU is signed. The Faculty Academic Board has also approved the establishment of WAISCL. KSB hopes to present WAISCL proposal at the next College Board Meeting.

Impact of Initiative

The setting of WAISCL at KSB reflects KSB's position as an innovative Business School. WAISCL will greatly impact businesses in Ghana and in the sub-region through its executive education programmes and industry relevant research. WAISCL in collaboration with KSB also hopes to establish post-graduate programmes in Supply Chain Management which will provide opportunities for further training in the area of SCM to KNUST students and the general public.

JOINT UNDERGRADUATE PROGRAMME IN PROCUREMENT MANAGEMENT (collaboration with procurement authority)

This collaboration was initiated by the Procurement Authority as part of its Millennium Development Goals (MDG) funded by the Millennium Challenge Account (MCA). Through this project, the Procurement Authority hopes to sponsor the introduction of an undergraduate programme in Procurement Management (BSc Procurement Management) at KNUST as well as three (3) to six (6) months short courses in procurement aimed at professionals in industry. The Procurement Authority will provide support in the area of;

1. Joint Curriculum Development
2. Text Books Provision
3. Instruction sessions in the form of seminars to students, lecturers and staff of KNUST.

The Procurement Authority is embarking on this project because of internal efforts within the Ministry of Finance (MOF) to establish a directorate that will manage the procurement profession. This directorate will provide a well structured career path for procurement professionals. When this is established there will be a need for these professionals to be duly certified and that is where these programmes would be useful. According to data from the Procurement Authority there is an abundant market for these programmes and immediately they commence applications will flood in.

Current State of Initiative

The Procurement Authority has presented the curriculum for both the undergraduate programme in Procurement Management and that for the three (3) to six (6) months short courses to KSB. The curriculum is currently under review. The Authority is also in the process of procuring text books for the programme.

The Procurement Authority proposal will be presented at the next Faculty Academic Board meeting for approval.

Impact of Initiative

This collaboration will enhance KSB's programme offering and provide more opportunities for post secondary students and working professionals to get university and professional education in the area of procurement management.

JOINT RESEARCH PROJECT WITH HANKEN SCHOOL OF ECONOMICS

The Department of Marketing, Hanken School of Economics, Helsinki, Finland and the Information and Decision Sciences Department of the KNUST School of Business have been collaborating in teaching and research since 2007. The fruitful cooperation between the two institutions started in 2007 when Dr. Owusu visited the KNUST School of Business. Prof. Buatsi (the then Dean of KSB) also visited Hanken in 2007 and in 2008. Prof. Spens and Dr. Kovacs also visited the KNUST School of Business to participate in the first International Conference on Humanitarian Logistics in 2007. That programme was chaired by the then Provost of the College of Art and Social Sciences.

The two institutions are currently undertaking a research project titled 'Investigating Risk and Control in Supply Chains in Africa'. The project partners at Hanken are Dr. Richard Owusu (Assistant Professor) and Mr. Imoh Antai (PhD Candidate). Dr. Owusu and Mr. Antai visited KNUST School of Business in May-June, 2010 to discuss and test the research plan and data collection instruments.

Current State of Initiative

Currently, the research instruments (qualitative and quantitative) have been completed and data have been collected from the field. A joint analysis of the data is being done and very soon joint publications on the project will be made.

Impact of Initiative

MBA students of the Department were involved in the data collection and analysis and this gave them an exposure to research of an international scope. As a result, some of the students are working on thesis in this area and we believe this will positively influence the quality of the research work and dissertations.

It is hoped that faculty members involved in the research project will in the near future be given the opportunity and funding to present these research papers at international conferences to improve their research portfolios and experience.

WORLD COCOA FOUNDATION AGRICULTURAL LOGISTICS SKILL DEVELOPMENT PROGRAMME

The World Cocoa Foundation (WCF) as part of its ongoing ECHOES Alliance program has selected the ISDS Department of KSB to plan, develop and implement a two-level educational programme of Agricultural Logistics Skill development. The first level will involve the post primary (vocational) group of trainees and the second level will involve the post secondary (technical) group of trainees. The programme is being sponsored by WCF and its partners. KNUST as a partner is serving as the educational lead responsible for curriculum development, programme hosting and training delivery. The programme hopes to recruit candidates for the logistics programme from the communities in the area surrounding ADM's (a project partner) Kumasi processing facility as well as through the normal KNUST intake routes.

Proposed Project Time Frame: 15 months.

Phase 1 Timeframe: 5 months

Phase 2 Timeframe: 4 months

Programme Location: KNUST-Kumasi/Ashanti Region, Ghana.

Currently, the collaboration is in its fifth (5) month and at the end of January/early February ISDS Department will recruit the first cohort of vocational students to start the programme.

ABOUT WCF

The World Cocoa Foundation (WCF) is an international membership foundation that promotes a sustainable cocoa economy through partnership programmes focused on economic and social development and environmental stewardship in cocoa-growing communities worldwide. WCF works through partnerships that bring together companies, governments, private foundation, international institutions, non-governmental organisations (NGOs), academia and research institutes globally. WCF's corporate membership includes more than 70 major branded manufacturers, cocoa processors, supply chain managers, and other companies worldwide, ranging in size from small, locally-based business to large international corporations. Other funding partners include the Bill & Melinda Gates Foundation, USDA, and the International Finance Corporation.

Current state of Initiative

ISDS has completed the request to provide a curriculum to guide the programme development as well as a programme budget. Currently, the WCF headquarters is reviewing the budget for approval after which funds will be allocated for the project and thus commence the training programme.

Impact of Initiative

This project fulfils the University's mandate of providing service to community and KSB's own vision of impacting society. Through this program, KSB will be able to reach an important group that otherwise would never have benefitted from KSB's activities. This project/collaboration with the World Cocoa Foundation also confirms KSB's position as a World Class Provider of business education.

INCOME GENERATION

The usual part-time programmes run by the School.

OTHER NECESSARY INFORMATION

GORDON NEWLOVE ASAMOAH

Research visit to Open University, UK, as part of the project of Advancing Business Learning for Employability (ABLE-Ghana) for the Business Schools in Ghana.

DEPARTMENT OF MARKETING AND CORPORATE STRATEGY

- i. Steps are far advanced towards the establishment of a business journal- KNUST Journal of Business.
- ii. Consultations are ongoing toward the offering of a Master's Degree in Oil and Gas Management.

MBA EDUCATIONAL TOUR IN THE UNITED STATES OF AMERICA (USA), KNUST SCHOOL OF BUSINESS, OCTOBER 1-10, 2010

The KNUST School of Business in collaboration with ACE Consult organised an educational trip to the USA to familiarise/exchange ideas with students and lecturers in four (4) top Business Schools of Excellence including the following:

- Kogod School of Business, American University, Washington D.C.
- University of Maryland, Maryland
- The Wharton School, University of Pennsylvania
- Columbia Business School, University of Columbia

COLLEGE OF ENGINEERING

VISION AND ORGANIZATION

Within the overall vision of the University, the College seeks to become an internationally acknowledged centre of excellence in engineering education with focus on national industrial development. The College is now organised under a two-tier system under the leadership of the Provost who provides among other things, leadership in the College to achieve this vision.

DEPARTMENTS AND PROGRAMMES

The College of Engineering comprises nine (9) Teaching Departments and two (2) Research Centres as listed below. Among the teaching Departments in the College, the Department of Chemical Engineering runs three (3) undergraduate programmes, Mechanical Engineering, Electrical and Electronics Engineering and Computer Engineering runs two undergraduate programmes each. The remaining five Departments run one (1) undergraduate programme each. The Departments and the programmes they offer are as follows

Departments	Undergraduate Programmes
Agricultural Engineering	BSc Agricultural Engineering
Chemical Engineering	BSc Chemical Engineering BSc Petrochemical Engineering BSc Petroleum Engineering
Civil Engineering	BSc Civil Engineering
Computer Engineering	BSc Computer Engineering BSc Biomedical Engineering
Electrical and Electronics	BSc Electrical and Electronics Engineering BSc Telecommunication Engineering
Geological Engineering	BSc Geological Engineering
Geomatic Engineering	BSc Geomatic Engineering
Materials Engineering	BSc Materials Engineering
Mechanical Engineering	BSc Mechanical Engineering BSc Aerospace Engineering
Research Centers	
Technology Consultancy Centre	
The Energy Centre	

All the Departments run Postgraduate programmes in the College. The College will soon introduce M.Sc. Engineering Management to meet the demands of the time. The College has three thousand six hundred and seventeen (3,617) undergraduate students and two hundred and thirteen (213) postgraduate students during the 2010/2011 academic year.

ADMINISTRTION OF THE COLLEGE

The year under review saw a change in the leadership of the College. Prof. Samuel Innocent Kofi Ampadu was appointed the new Provost to succeed Prof. F.W.Y. Momade who completed his Second Term of Office.

The following constitutes the administrative personnel at the Provost office.

Provost	Professor Samuel Innocent Kofi Ampadu
College Registrar	Mr. Benjamin Otuah Andoh
Ag. College Finance Officer	Mr. Abdulai Suglo
Ag. College Librarian	Mrs. Agatha Tawiah Frempong
Assistant College Registrar	Mr. Benjamin Boampong Owusu

ACTIVITIES

During 2010/2011 academic year, the College undertook the following development activities:

College Board Retreat

The College of Engineering Board held a retreat from 22nd October to 24th October 2010 at the Anglogold Ashanti Anyinam Lodge in Obuasi. The retreat was to provide opportunity for the new Provost of the College, Prof. S.I.K. Ampadu to outline his vision and objectives for the College and to enable the College Board also to discuss, make inputs and adopt these objectives. Finally the retreat also sought to put in place concrete strategies for achieving the objectives. The retreat was moderated by Mr. Kwadwo Asare-Bediako, formerly the Human Resource Manager of Multi Media Group of Companies and now a Human Resource Consultant. In his presentation, the Provost of the College mentioned that his vision for the College complements that of the Vice Chancellor for the University as a whole which he stated as "to reposition the University as a Global institution for Science and Technology" with national development as the focus and mentioned the five priority areas of science and technology research, graduate studies with emphasis on science and technology, information and communications technology and capacity building. Within the framework of the Vice Chancellor's vision, the provost also presented his vision for the College.

At the end of the retreat the Board adopted the following four objectives:

1. Improving and maintaining the quality of products from our undergraduate programme
2. Increasing the number of academic staff and providing opportunity for improving themselves
3. Increasing the number of post graduate programmes and improving their quality
4. Improving the efficiency of College administration and management

The alumni were identified as a key partner in the achievement of these objectives and various strategies to mobilise and involve the alumni were discussed and adopted. Key amongst these strategies was the compilation of a College of Engineering alumni database and keeping alumni informed about developments in the College through a vibrant website and the identification of coordinators in different parts of the country and also different parts of the world.

Committees

In order to involve as many people as possible in the running of the College, eight new committees have been established.

Rehabilitation of Infrastructure

The College is currently pursuing an aggressive programme of maintenance of its facilities. The various buildings in the college are undergoing redecoration, while public address systems are being installed in lecture rooms. In accordance with the College Board decision to involve the alumni in the work of the College, in response to presentations made to alumni one engineering firm- Associated Consultants Ltd. owned and operated by a group of alumni offered to rehabilitate the College's Conference Room at no cost to the College. The rehabilitated conference room which cost the firm Gh¢30,000 now offers excellent environment for meetings and for receiving guests to the College. In appreciation of the firms offer, the College Board has christened the conference room "Associated Consultants Conference Room".

Construction of the N-Block

As part of preparations to contribute its quota to empowering Ghanaians to benefit from the oil and gas find in the country, the College is re-establishing itself as the foremost institution for petroleum engineering education in Ghana and in line with our vision, to become a world renowned centre of excellence in petroleum engineering. The Government through the World Bank is supporting the College to achieve this objective with a sum of USD6.0 million to equip the laboratories and to improve the human resource available for petroleum and petrochemical engineering. The College through its own internally generated funds and with the support of the Ghana Government is constructing a laboratory complex to house the laboratories and the equipment being procured. This block which was commenced as the N-Block has been designated the Petroleum Building.

Linkages with Industry

This year saw a number of firms approaching the College to hire students directly from the lecture rooms. The week after examinations was devoted to career fairs where firms took turns to address graduating students and to interview and pick students to first serve their national service with them before hiring them. The companies included Schlumberger, Cummins, Knight Piesold, Golden Star (Bogoso/Pretea) Ltd., Transocean Offshore International Ltd and AngloGold Ashanti.

The vacation training for continuing third year students also received emphasis this year. Vacation training placements were centralised and each student has been given a letter of introduction for the places they intend to have their training.

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. 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 seventh batch of graduate students has been admitted since the graduate programme started in 2004/2005 academic year. Currently, there are two (2) PhD students and twenty-three (23) MSc students in the following areas of study:

- Soil and Water Engineering,
- Food and Postharvest Engineering,
- Agricultural Machinery Engineering, and
- Agro-Environmental Engineering.

Thirteen (13) MSc and one (1) MPhil students went through a successful viva and will graduate this year.

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 or PhD in Chemical Engineering are also offered in the Department.

STUDENT POPULATION

The student population has increased steadily over the recent years. The undergraduate student population in 2010/2011 academic year stood at 659 as compared to 611 in 2009/10.

STATISTICS

BSc Chemical Engineering Programme

	TOTAL NUMBER	MALE	FEMALE	FOREIGN STUDENTS
Year 1	114	89	25	15
Year 2	116	94	22	16
Year 3	70	55	15	6
Year 4	73	61	12	9
Year 5	5	4	1	-
Year 6	2	2	-	-
TOTAL	380	305	75	46

BSC PETROLEUM ENGINEERING PROGRAMME

	TOTAL NUMBER	MALE	FEMALE	FOREIGN STUDENTS
Year 1	55	48	7	12
Year 2	74	59	15	10
Year 3	50	41	9	3
Year 4	28	26	2	3
Year 5	1	1	-	1
YEAR 6	2	2	-	-
TOTAL	210	177	33	29

BSC PETROCHEMICAL ENGINEERING PROGRAMME

	TOTAL NUMBER	MALE	FEMALE	FOREIGN STUDENTS
Year 1	33	25	8	7
Year 2	36	30	6	4
TOTAL	69	55	14	11

MSC/MPIL/PHD CHEMICAL ENGINEERING PROGRAMME

	TOTAL NUMBER	MALE	FEMALE	FOREIGN STUDENTS
Year 1	5	5	-	-
Year 2	3	3	-	-
Year 3	3	3	-	-
Year 4	1	1	-	-
YEAR 5	1	1	-	-
YEAR 6	4	3	1	-
TOTAL	17	16	1	-

STAFFING

Currently there are 14 lecturers at the Department, out of which one is on extension of study leave, one on post sabbatical leave of absence, two of them are on post retirement contract and one is on part time basis.

SERVICE TO THE COMMUNITY

The Department continues to offer teaching services to various departments at KNUST.

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. The Civil Engineering Department focuses on undergraduate and post-graduate training and it is the main source of Civil Engineers in Ghana. This report presents an overview of the developments that have occurred in the Department during the 2010/2011 Academic Year in relation to teaching and research.

PROGRAMMES OFFERED IN THE DEPARTMENT

Undergraduate Programme

The Department continues to run the four-year undergraduate B.Sc degree programme in Civil Engineering. The total enrolment in the BSc Civil Engineering programme for the academic year is 514 as shown in Table 1.

Table1 Undergraduate Enrolment in Civil Engineering for 2010/2011

Year	Number		Year	Number
Year 1	129		Year 4	120
Year 2	159		Year 5	19
Year 3	82		Year 6	5
Total				514

Admission to the Department continues to be highly competitive and the “cut-off” depends on the number and calibre of candidates applying in a particular year. Majority of students enter from the SSS stream in accordance with the entry requirements. A small percentage of students entered as mature students who satisfied the minimum conditions for that category of applicants.

Locally, there has been an expressed need for the upgrading of HNDs obtained from the country’s Polytechnics to degree status. Such upgrading is expected to improve the professional fortunes of HND holders and enhance their ability for further studies. Last year, the Department completed the preparatory works for mounting a Top-Up Course in this direction. The course is designed to be delivered on modular basis during the vacation periods and is supposed to last a total of two (2) years.

In accordance with the University regulations, the main undergraduate programme was also subjected to a review process. Consultations were made with key industry players and other stakeholders and a revised course structure has been approved by the Departmental Board for implementation in the 2011/2012 Academic Year.

Post-graduate Programme

The Department runs three taught MSc courses in addition to MPhil and PhD programmes by research. In collaboration with UNESCO-IHE, in The Netherlands, a joint MSc Programme in Water and Sanitation has been introduced where students would spend six months of the course programme in The Netherlands. The total enrolment in post graduate programmes currently stands at 58 at the beginning of the academic year. The breakdown of the enrolment in the individual programmes for the 2010/2011 academic year is shown in Table 2. Enrolment in postgraduate programmes now accounts for about 11% of total enrolment in the Department.

Table2 Postgraduate Programmes and Enrolment

Postgraduate Programme	Enrolment in 2010/2011
MSc Water Supply and Environmental Sanitation	17
MSc Water Resources Engineering and Management	11
MSc Road and Transportation Engineering	19
MPhil Civil Engineering	3
PhD Civil Engineering	7
Total	57

ACADEMIC AND SENIOR SUPPORT STAFF

The academic staff strength in the Department during the reporting year was 21. Four out of this number are on study leave pursuing their PhD's.

Table 3 Status of Academic Staff

Regular Continuing	Staff on Full Time Study Leave	Total
17	4	21

The student: lecturer ratio for the Department based on undergraduate student enrolment improved marginally to 25:1 on account of the reduced enrolment of students. Currently, 55% of academic staff are above the rank of lecturer while the Professorial rank has improved to about 24%.

<i>Rank</i>	<i>Number</i>
Full Professor	1
Associate Professor	4
Senior Lecturer	6
Lecturer	10
Total	21

The academic work is supported by technical staff consisting of five technicians led by a Principal Technician with a BSc degree in civil engineering. The administrative work is organised by the departmental administrative officer of Senior Administrative Assistant grade.

RESEARCH

For the purposes of teaching and research, the Civil Engineering Department is organised into five main sections with specialisations in civil engineering practice.

1. Structural Engineering
2. Geotechnical Engineering
3. Highway and Transport Engineering
4. Water Resources Engineering
5. Environmental Quality Engineering

STRUCTURAL ENGINEERING SECTION

Research Activities

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 promotion 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 continued its research collaboration with the GHA into the use of the DCP to determine the resilient moduli of subgrade through a correlation with the Falling Weight Deflectometer.

HIGHWAY AND TRANSPORTATION ENGINEERING

Research Activities

The division continued its research into traffic operations and road safety in Ghana. Over the past year it has concentrated its efforts at traffic studies in Kumasi especially at the various signalised intersections. Studies have also been conducted into public passenger transport services and how to improve urban mass transit in Ghana. Evaluation of various road safety engineering measures, as well as activities carried out under the National Road Safety and Strategy II was also carried out.

WATER RESOURCES ENGINEERING

Research Activities

The Section continued its research in the following areas:

1. Assessment of water resources in river basins in Ghana.
2. Urban flood modeling
3. Update of the Water Audit of the Volta Basin.

4. Climate Change and integrated water resources management.
5. GIS and Remote Sensing for Water Management in the Volta Basin.
6. Ground water modeling

ENVIRONMENTAL QUALITY ENGINEERING

Research Activities

1. Water Quality Assessment of selected surface water bodies in the Kumasi metropolis
2. Rain water harvesting
3. Water quality monitoring and assessment of wastewater treatment plants of mining Industries.
4. Adsorptive removal of contaminants (fluoride, arsenic, manganese and iron) in groundwater used for drinking water supply.
5. Water Quality fluctuations in distribution lines of GWCL – causes, effects and repercussions.
6. Wastewater treatment and re-use in aqua-culture
7. Municipal solid waste management
8. Energy generation from combustion of plastic waste bags and sachets
9. Pathogen removal mechanisms in macrophyte and algal waste stabilization ponds.
10. 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
11. Water pricing, subsidies and cost recovery for sustainable water service delivery.
12. Public private partnerships and regulation for water supply service delivery
13. Public private partnerships for solid waste management

SUPPORT TO THE DEPARTMENT

The Department continues to benefit from the benevolence of certain institutions and organisations. Key amongst these institutions are as detailed below:

No.	Description	Nature of Assistance
1.	The Ministry of Transportation	Support for the M.Sc in Road and Transportation Engineering. Under the Government's Urban Transport Project (UTP) and Transport Sector Project (TSP).
2.	NUFFIC, Netherlands	Establishment of a joint MSc programmes in Water and Sanitation
3.	UNESCO-IHE Global Partnership Fund (UPaRF),	Support for post-graduate research into various areas in water supply and sanitation.
4	EU- support for SWITCH	Support for training, research and best practice demonstration to water sector practitioners.
5	CAPWA	Grant to capture water and energy auditing
6	SNOWS	Support for capacity building in environmental health and water supply.
7	CPWF	Support for MSc and PhD research work in the area of water resources management.
8	WASCAL	Support for PhD research work on land and climate change
10	ESA-TIGER	Research support of a Data Dissemination System
11.	ABP Consult	Support for Civil Engineering Design Course in the BSc

		programme
12.	Comptran Engineering Services	Support for Transportation Design Project course in the MSc. Road and Transportation Engineering Programme

The Ghana Highway Authority, Department of Urban Road and the Department of Feeder Roads of the Ministry of Road and Highways as well as WBHO continued to support our student vacation training programme.

COLLABORATIONS

The Department, during the year under review, signed the following memorandum of understandings detailed below:

Stockholm Environmental Institute (SEI)

Challenge Programme for Water and Food (CPWF) Volta V1: “Targeting and scaling out” with other partners including Institut National de l’Environnement et de Recherche Agricole (INERA), The Savanna Agricultural Research Institute (SARI), and the Department of Geography of the University of Ouagadougou

European Space Agency (ESA)-TIGER

Provision of Data Dissemination System for transfer of satellite imagery for research in the field of remote sensing for water management. This is in partnership with the Volta Basin Authority based in Ouagadougou.

Welcome Trust Funded Project

This is in collaboration with eight (8) other institutions in Africa and Europe that seeks to build research capacity in environmental health and water supply in some selected Universities and Research institutions in Africa.

DEPARTMENT OF COMPUTER ENGINEERING

INTRODUCTION

The Department of Computer Engineering offers a four-year B.Sc. Degree programmes in the following areas:

- Computer Engineering
- Bio-Medical Engineering

The BSc Degree programme in Bio-Medical Engineering is relatively new. The first batch of students to the programme will be graduating in the 2011/2012 academic year.

The Department also offers the following postgraduate programmes:

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 313 is made up of 275 Ghanaian and 38 foreign students. The student population for postgraduates is 7.

STAFFING

Two new teaching staffs were recruited in the 2011/2012 academic year, one each for the Computer and Biomedical Engineering programmes. The academic staff strength in the Department now stands at 9. The drive to further increase the staff strength to the required established levels continues.

PROFESSIONAL TRAINING

The Department hosts a Cisco Local Academy that provides opportunity for students to enhance their employment skills in the field of Computer Networking.

RESEARCH ACTIVITIES

Active Research areas during the year under review centred mainly on computer communication and networks. In the area of product development, the prepaid meter, designed and developed by staff and students of the Computer Engineering Department for local manufacture in the previous year, was further improved upon into smart meter. The areas where research is going on include:

- Application of Neural Network in Financial Market.
- Mobility modelling in mobile Ad hoc Networks Using Queuing theory.
- Modelling demand for a Telecommunication System Based on the Box-Jenkins methodology.
- A Study on the Effect of the Weather on KU Band Digital Satellite Television system in Kumasi.
- Application of Residue Number System in Bioinformatics
- Development of Voice-activated Database Assistant
- 2D Image Filtering
- Development of a Blended Learning Model for Less Endowed Tertiary Educational Institutions
- Security in Wireless Networks
- Application of Text-to-Voice conversion in Mobile Communication
- Development Smart Energy Metering.

DETAILS OF LINKS WITH OTHER UNIVERSITIES AND INDUSTRY

The Departments of Electrical/Electronic and Computer Engineering maintained their links with Texas Instruments. Under this linkage programme, four students are currently pursuing postgraduate programmes at the Texas A & M University while three others have completed.

Again this year, Texas continued to support three final year students to do their final year first semester studies at the Texas A & M University. Plans are also under way for additional 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 Departments of Electrical/Electronic and Computer Engineering have established a VLSI laboratory for both teaching and research.

SERVICE TO THE COMMUNITY

The staffs of Computer Engineering continued to render services to the nation through consultancy services to the University and outsiders in areas of electrical, electronic, computer and telecommunication engineering at the Polytechnics, other Universities and National Accreditation Board.

INCOME GENERATION AND DONATIONS

Production units and consultancy services constitute the main income generating activities. The Cisco Local Academy and laboratory services provided the main income for the Department.

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 Departments of Electrical/Electronic and Computer Engineering.

DEPARTMENT OF ELECTRICAL & ELECTRONIC ENGINEERING

INTRODUCTION

The Department of Electrical and Electronic Engineering runs a four-year BSc Degree programme in Electrical & Electronic Engineering, a four-year BSc Degree programme in Telecommunication

Engineering as well as a two-year MSc Taught programme in Telecommunication Engineering. There is also a research programme leading to Master of Philosophy (MPhil) degree. The first batch of students admitted to the BSc Degree programme in Telecommunication Engineering graduated in June 2009.

The undergraduate programmes continue to enjoy high patronage from both Ghanaian and foreign students. The intake for the year under review for the two Electrical and Telecommunication Engineering degree programmes was 200 of which 31 were foreign students.

RESEARCH

Academic staff continued to engage themselves in research activities. Active research areas during the year under review include comparative assessment of the performance of imported and local conductive backfill materials for vertical and grid ground electrodes, potential of smart grid and distributed generation technologies to enhance distribution system performance, prepayment metering systems, quality assessment of cables in Ghana as well as impact of the nationwide CFL rollout plan on energy consumption, mobile phone-based GSM security systems and telemedicine.

Also, six (6) candidates successfully defended their MSc theses.

SERVICE TO COMMUNITY

Members of staff continued to render services to the Nation through consultancy services to the University and outsiders in areas of electrical and electronic engineering, acting as external moderators for the Polytechnics, through membership on the National Board for Professional & Technician Examinations (NABPTEX), as well as offering teaching services to the KNUST Institute of Distance Learning (IDL). Laboratory services were also rendered to some tertiary institutions like Kumasi Polytechnic (K-Poly), Sunyani Polytechnic (S-Poly), Takoradi Polytechnic (T-Poly) and the Regional Maritime University (RMU).

INCOME GENERATION

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 on campus.

INNOVATIONS

With the support of Texas Instruments Inc (Dallas TX), the Department established a VLSI Cadence Laboratory for both teaching and research. After a few years, a VLSI chip has been successfully designed and tested, and is yet to be fabricated.

INTERNATIONAL LINKS

The Department maintained its links with Texas Instruments. Under this linkage programme, Texas Instruments continued to support three (3) Final Year students of the Department to do their Final Year First Semester studies at the Texas A & M University. The MOU signed between KNUST and the University of Electronic Science & Technology of China (UESTC) continues to yield benefits, with the UESTC awarding full scholarship this year to one (1) staff to pursue PhD programme.

LOCAL SCHOLARSHIP AWARDS/COLLABORATIONS

Five (5) students of the Department continued to benefit from the instituted scholarship schemes for academically bright students under the Poku Transport and Bamfo Kwakye Memorial Awards. Furthermore, collaborations between KNUST and the VRA, GRIDCO, ECG, VODAFONE GH and TIGO continued to be deepened.

TIGO increased the value of its award for the best graduating male and female Telecommunication Engineering students this year to GHC 1,500 per student.

Career fairs were also organised by TIGO and VODAFONE GH for students with the view to exposing them to the state-of-the-art technologies being deployed in the telecommunication industry.

A professional orientation seminar was also organised by the 1996 Electrical Engineering Year Group for our students.

HIGH VOLTAGE LABORATORY

As its commitment to the full realisation of the collaboration with the Department, the ECG has solely funded the establishment of a 140 kV High Voltage Laboratory, which is yet to be commissioned.

DEPARTMENT OF GEOMATIC ENGINEERING

BACKGROUND

The Department of Geomatic Engineering 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 Geodetic Engineering and 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 visualisation 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.

In view of the broad disciplines of Geomatics, the Department of Geomatic Engineering has being divided into the following sections:

1. Land Surveying;
2. Geodesy and Hydrography;
3. Photogrammetry and Remote Sensing;
4. GIS and IT; and
5. Cartography

TEACHING

The Department of Geomatic Engineering has:

17 Teaching staff with:

5 senior lecturers; and

11 lecturers (1 on study leave, 1 on contract and 1 on part time)

1 Chief Technician

1 Secretary and 1 Clerk.

7 Supporting staff

11 National Service Persons

The Department is currently offering postgraduate degrees, undergraduate degrees and special programmes categorised 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

Short Courses in GIS and GPS - 2 weeks

The Department currently has 1 MPhil candidate, 5 MSc candidates and 334 BSc candidates.

The Department of Geomatic Engineering and the Institute of Renewable and Natural Resources (IRNR) in collaboration with the International Institute for Geo-Information Science and Earth Observation (ITC), The Netherlands jointly runs MSc programme in GISNaturem.

The postgraduate programmes are research-based and the undergraduate programmes are all taught courses comprising, in each case, both theory and practical components. Field trips and vacation training programmes are integral part of our training, this enrich the practical orientation of our students. The short courses are organised for various Departments with special needs.

The year under review saw expansion in the provision of service courses in post-graduate and undergraduate as follows:

Postgraduate MSc degree programmes

For the post-graduate MSc degree programmes the following departments benefited from one or more of our service courses:

Department of Civil Engineering

Department of Land Economy

Department of Environmental Science

Department of Planning

Department of Planning (Spring programme)

Department of Material Engineering

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

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 Global Positioning System (GPS), Theodolite and Total Station instruments; as well as the use of the Geographic Information System (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:

- GPS and its related application;
- Reference network;
- Flooding;
- 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;
- Cartographic Visualisation and Computer Programming; and
- Photogrammetry

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, as one of the implementing agencies of the Land Administration Project (LAP), is doing all within its power, to ensure the success of the project in the country.

In the past year the Department undertook the following consultancies for the University and the national community:

Topographic surveys for proposed Teaching Hospital
Preparation of Land Use Map in collaboration with Planning Department
Demarcation, survey and provision of spot levels and base maps for new hostels
Demarcation of the Campus boundary along the Kumasi Accra road
GIS training for the staff of Department of Geomatic Engineering
GIS training for the staff of Department of Planning
GIS and GPS training at the national level

BENEFACTORS

The Department is grateful to the Land Administration Project (LAP) for donating 4 X 4 Nissan Pickup and Toyota 33-seater bus. The Department is also grateful to CADCONSULT for donating sophisticated Trimble Surveying and GPS equipments.

The Department continues to enjoy the support of Survey Department in the provision of GPS receivers and Total Station. We are also thankful to all the firms, especially Newmont Ghana, Survey Department, Rudan Limited, Sambus Limited, AVRL, CSIR, DeMappers, Geodata, Geotech, Ghana Ports and Harbours Authority, Urban Roads, Feeder Roads, etc., who welcome our students on their field trips and technical attachments.

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 utilisation of these natural resources as in mining, construction, water, petroleum and related industries.

PROGRAMMES OFFERED BY THE DEPARTMENT

The Department offers a four-year programme leading to an award of BSc Degree in Geological Engineering. Postgraduate research programme leading to an award of MPhil and PhD degrees are also offered. The enrolment in the programme for the academic year is as follows:

BSc

Year	Number of Students
One	106
Two	66
Three	30
Four	43
Total	245

Post Graduate

Year	Number of Students
One	2

ACADEMIC STAFF

The academic staff strength of the Department is eight (8), out of which two (4) are part-time lecturers and one (1) is on study-leave. The current average staff-student-ratio of 1:60 is an increase over that of last year's of 1:42. The Department has recently recommended for appointment three (3) new academic staff members and one (1) senior technician whilst further efforts are being made to engage some more academic staff personnel. The academic work is currently 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
- Pozzolana use in masonry works

During the academic year, Red Back Mining Ghana Ltd. a subsidiary of the Red Back Inc. operating in the Western Region of Ghana has donated Diamond Drilled Cores worth \$113,870.00 to enhance learning and prepare students for the mining industry.

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 programs, with the exception of Materials Science and Engineering, were transferred to the College of Engineering as a full-fledged Department.

ACHIEVEMENTS

The Department's incapacitated X-Ray Diffraction equipment was resuscitated with funding from the Volta River Authority. The XRD is uniquely the only one in the country today. We are very appreciative of the assistance of VRA. The funding enabled us to replace some essential parts, acquire updated software and to contract an expert technician from Germany to carry out the servicing. Some rehabilitation work has also been carried out in the laboratories to improve student practical work. Some other broken down laboratory furnaces and distillation unit have also been repaired.

We have signed an MOU with Southern University for staff exchange and availability of equipment for analysis.

PROGRAMMES OFFERED BY THE DEPARTMENT

Undergraduate Programs

The Department currently runs the Materials Engineering programme. Excitingly, last year, approval was given for the start of a Metallurgical Engineering programme as well. This programme will focus on dealing with metal-related problems in the nation.

Post Graduate Programs

The Department currently runs an MSc programme in Environmental Resources Management. We are currently drawing up a curriculum for an MSc in Materials Engineering.

STATISTICS

Students

The membership of students currently stands at 175 undergraduate students and 38 post-graduate students. The breakdown is as indicated below:

BSc Materials Engineering

First Year	-	66
Second Year	-	50
Third Year	-	32
Fourth Year	-	27

For the MSc Environmental Resources Management programme, the breakdown is as follows:

MSc Environmental Resources Management

First Year	-	21
Second Year	-	17
MPhil Materials Engineering	-	0
PhD Materials Engineering	-	1

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 the Department can train young engineers who can face 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 the 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 five programmes that can best be handled in four distinct 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 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 Department also runs a two-year top-up programme for HND holders. The fourth batch of BSc graduates in Aerospace Engineering are passing out onto the job market. Four of the students who graduated a couple of years ago have been employed by the Ghana Air Force.

The Department has introduced undergraduate programme options in Industrial Engineering, and Automobile Engineering to address the need for specialists in those fields. Similarly, the Department has received Academic Board's approval to run top-up programme for HND and equivalent Diploma certificate holders leading to the award of BSc Mechanical Engineering. The special feature of the top-up programme is that, it addresses 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 a composite MSc Mechanical Engineering Programme, spanning two years, with the following optional specialities currently available:

- (Thermo fluids and Energy Systems programme)
- (Design and Production Programme)
- (Applied Mechanics Option)

The first year of the composite MSc programme is used to cover taught causes and the second year is for supervised research. In addition to the Masters programmes, the Department also runs a PhD Degree programme based solely on research. There are currently two doctoral students who are working hard to complete their thesis on schedule.

The teaching staff level now stands at 26 with a total of 547 students giving a student teacher ratio of 21:1. Out of the 26 academic staff, three (3) are on contract, two (2) are on part-time, and three (3) are Visiting Scholars.

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 have earned their PhD degrees. Another lecturer who was on study leave for his PhD at the NCA&T has just resumed duty after successful completion of his studies.

The Department has forwarded two (2) applications for appointment as adjunct lecturers. For a full complement of the teaching staff, the pending applications in respect of Dr. Kwame Koduah Agyapong, Dr. John K Afriyie, Mr. Kofi Lartey Danquah and Mr. Faisal Wahib Adam must be given an accelerated push to enable the Department function as required.

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 such as Energy Systems Engineering, Industrial Engineering and automobile engineering to focus on design of machinery, development of processing technologies, and creation of mechanisms for infusion into design and manufacture of machinery. In summary, two final year options (in asterisks) have been introduced into the BSc Mechanical Engineering programme:

- Applied Mechanics
- Design and Manufacturing Engineering
- Thermodynamics and Energy Systems Engineering
- Industrial Engineering*
- Automobile 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 envisaged will produce well trained engineers in the above disciplines with technical self-confidence to enter existing job markets and also have confidence in creating their own jobs due to the acquisition of focused knowledge and expertise. Well-constituted committees will be charged to provide exhaustive details of the new programmes.

In another achievement, the Department has received approval for the running of 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 of 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 mechanised 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 Dr. Francis Davis of KNUST 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.

Dr. Agyei-Agyemang a staff member has completed his work on the topic “Impact attenuation System Using Friction Dumpers.” 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.

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 defended his thesis 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 organisations 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 organisations:

- The Ghana Air Force (GAF) donated seventy (70) reams of A4 sheets to the Department.
- The Ghana Air Force (GAF) donated 4 computers, 2 printers and accessories to the Department for the Aerospace Programme last year. 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.
- The following individual also donated towards the painting of the Mechanical Engineering Offices, Laboratories and Workshops as ranked below:
 - i. Prof. F. K. Forson, Head of Department, Mechanical Engineering
 - ii. Dr. Kwame Owusu-Achaw, Department of Mechanical Engineering, KNUST
 - iii. Mr. Adams Tetteh Larbie, an alumnus of the Department of Mechanical Engineering, KNUST, now at CFAO
 - iv. Prof. Elijah Kannatey-Asibu, Michigan State University, and a visiting scholar to the Department of Mechanical Engineering, KNUST
 - v. Prof. Abeeku Brew-Hammond, Department of Mechanical Engineering
 - vi. Mr. Seth Mensah, an alumnus
 - vii. Dr. P. Y. Andoh, Department of Mechanical Engineering, KNUST
 - viii. Mr. Amoabeng Owura Kofi, First Year, Postgraduate Student of the Department of Mechanical Engineering, KNUST
 - ix. Dr. Anthony Agyei-Agyemang, Department of Mechanical Engineering, KNUST
 - x. Dr. Francis Davis, Department of Mechanical Engineering, KNUST
 - xi. Mrs. Eunice Akyereko Adjei, Department of Mechanical Engineering, KNUST

TECHNOLOGY CONSULTANCY CENTRE

INTRODUCTION

The Technology Consultancy Centre (TCC) of the College of Engineering was founded in 1972 with a mandate to work with KNUST's academic departments to research, co-develop and transfer technology to support small and medium scale industries in Ghana. To realize this objective, the TCC currently runs five programme units: Each Unit conducts community-based and enterprise impact research, often working in collaboration with academic departments as well as international institutions. The five program units are:

1. Intermediate Technology and Transfer Unit (ITTU)
2. Applied Industrial Ceramics and Rural Enterprise Development (AIC-RED) Unit
3. Food, Agriculture and Natural Resource Development (FAND) Unit
4. International Development Unit (IDU)
5. Graduate Entrepreneurship Training and Youth Empowerment (GET-YE) Unit

INFRASTRUCTURE DEVELOPMENT

The TCC runs a number of laboratories and workshops both on and off-campus. These include the Food Processing laboratory, Applied Industrial Ceramics laboratory, Intermediate Technology Transfer Unit (ITTU) workshop in Suame Magazine Cluster, Brick manufacturing workshop at Afari and the proposed site for the KNUST Technology Park at Adako Jachie. In a bid to create facilities for collaborative research, technology transfer, teaching and consultancy services, the TCC is embarking on renovation of senior members' offices and library in the annex building; and modernisation of its main office at the administration block II.

RESEARCH AND DEVELOPMENT

Ghana Jatropha Research Project (GHAJA)

In collaboration with the Nucleo Ricerca Desertification (NRD), University of Sassari, Italy, the TCC is working with Savannah Agriculture Research Institute (SARI), Ministry of Food and Agriculture (MOFA), Tamale and New Energy, Tamale, on an EU eligible funding of €169,000 for TCC action in a project titled - Use of Jatropha plant to improve sustainable renewable energy development and create income-generating activities: an integrated approach to ensure sustainable livelihood conditions and mitigate land degradation effects in rural areas of Ghana. This project started in April 2009. The TCCs main activities include the design and manufacture of Jatropha cracker, decorticator, expeller; study of Jatropha-based products with focus on extraction methods, quality improvements, and alternative uses and market analysis. The TCC is also to train farmers in the processing of the oil into other useful products etc. The TCC has collaborated with the Department of Agricultural Engineering to develop a Jatropha seed cracker whose performance has been evaluated. Through its ITTU workshop, the TCC has developed a Jatropha decorticator for processing of Jatropha seeds.

Intermediate Technology and Transfer Unit (ITTU)

The ITTU continues to provide technological expertise and equipment through prototyping and product development. The ITTU also provides workshop facilities for KNUST students to apply classroom learning in the workshop during their final year students' project work and industrial attachment. During the period under review, the ITTU developed the following equipment and machinery:

- Commercial size cassava grater and screw press for the Kenyasi No.1 cooperative group to use for commercial processing of Gari at Kenyasi in the Brong-Ahafo region.
- Jatropha decorticator for de-husking Jatropha fruits. It is envisaged that a total of seven (7) decorticators will be produced for installation in the West Mamprusi district of the northern region, Ghana.

Food Agriculture and Natural Resource Development (FAND) Unit

In collaboration with students and faculty members of Olin College, USA the Food Agriculture and Natural Resource Development (FAND) Unit of TCC is embarking on several research activities including R&D into beeswax-based products for crayons, lotion and other cosmetic products etc. To date literature on beeswax-based products has been reviewed. Other researches include;

- Working with KNUST's Department of Physics to determine the best material for Ghanaian bee hive production.
- Collaborating with KNUST's Department of Herbal Medicine to develop technology with the potential for expanding beekeeping in Africa.
- Assessing the value of intercropping in Jatropha plantation to take advantage of technological developments in harvesting and provide increased opportunities for honey and oil production
- Exploring diversified fruits production in Ghana

Applied Industrial Ceramics and Rural Enterprise Development (AIC-RED) Unit

Researchers in this Unit carry out research and development activities in water and sanitation with focus on household ceramic water filters, defluoridation of ground water and industrial waste treatment. Other research areas include **clean energy development technologies for high efficiency cook stoves**, bio-briquettes for clean smokeless and portable biogas system (PBS) development.

Graduate Entrepreneurship and International Development Units

These units support and offer students the opportunity to apply classroom learning in the field to gain an insight into international development through the running of summer schools. In collaboration with the Kumasi Business Incubator (KBI) and Ibis-Tek, graduate entrepreneurship programmes will be implemented very soon. The collaborative vision is to promote greater foundational growth for knowledge-based enterprise development.

Major Research by Staff

The following research activities are being undertaken by academic staff of the Centre:

- Waste vegetable oil (WVO) as a potential feedstock for biodiesel production
- Study of Jatropha-based products: methods of extraction, quality improvement and market analysis
- GIS-based energy access: review of policies and plans for increasing energy access in Ghana
- Solar Photovoltaic Electrification and Impacts on education, health, ICT, agriculture and micro-enterprises.
- Needs assessment of metalwork and agricultural mechanization clusters in Kumasi
- Development of beeswax-based products
- Technology and Innovation services for establishing KNUST Technology Park
- Design and construction of institutional cookstoves
- Study of household ceramic water filters
- Defluoridation of ground water in Northern Region of Ghana
- Development of bio-briquettes for clean smokeless cookstoves
- Design and manufacture of portable biogas system (PBS) development.

NATIONAL COLLABORATIONS

TCC-Millennium Development Authority (MIDA) Project (2010-2011)

During the period under review, the TCC signed two (2) Task Orders as a MIDA Training and Technical Service Provider (TTSPs) to train farmer-based organisations (FBOs) in the Sekyere West District of Ashanti region. The objective of the training activities was to accelerate the development of commercially oriented skills and capacity among FBOs including the ability to produce market responsive outputs in an efficient manner. To date the TCC has trained over 2000 farmers from over 30 FBOs in both Sekyere West and Ejura Sekyere Dumasi districts of Ashanti region. Earnings accruing from the training activities have contributed tremendously to the running of the Centre's activities.

TCC-Ghana Private Sector Development Facility (GPSDF), Ministry of Trade and Industry (MOTI), Accra, Ghana.

In September 2010, the TCC won a competitive bid amounting to GHC 21,000 to carry out a needs assessment of the capacity building for cluster development of the agricultural mechanisation and metalwork subsector in the Kumasi Metropolis. The study was sponsored by the Italy/Government of

Ghana, Ghana Private Sector development Facility (GPSDF) and it covered about 510 enterprises in Kumasi. The TCC developed a database, organised a technical validation workshop and had submitted a report to the GPSDF, MOTI, in Accra.

INTERNATIONAL COLLABORATIONS

To create innovative solutions to socio-economic challenges, the TCC continues to offer opportunities to students and entrepreneurs through the development of equipment and expertise for entrepreneurship. During the period under review, a number of faculty members and students from the following international Universities visited the Centre for collaboration on international development and entrepreneurship.

TCC-Howard University, Washington DC Collaboration

Under the theme “Appropriate Technology for Water and Sanitation: Solutions for a Thirsty Planet” the TCC collaborated with CSIR, African University College of Communication, Chicago State University to support Howard University to organize the 4th International Conference on Appropriate Technology (ICAT) in November 24-27, 2010 at the University of Ghana’s Centre for African Wetlands in Accra. Dr. George Y. Obeng and Mr. Donald Amrago served on the local organising committee. The conference was part of an ongoing process to bring appropriate technology to the forefront of discussion and practice in science and technology with focus on education, policy, research, development and deployment.

TCC-MIT Design Lab Collaboration

From January 9 to 22, 2011 a team of eight (8) students and two faculty members from the Massachusetts Institute of Technology (MIT), USA visited the TCC and ITTU. This collaboration focuses on the provision of the environment and facilities for students to implement community impact projects in the niches of education, water and sanitation, health, agriculture, rural enterprises etc. The Centre is discussing with the International Development Initiative (IDI) of MIT to establish a similar model of design lab (D-Lab) at the ITTU to enhance teaching and learning capacity and capability in sustainable design solutions.

TCC-MIT 2011 International Development Design Summit (IDDS)

The IDDS 2011 event will be held from June 22 to August 7, 2011 at the KNUST campus. This will be the second event to be held outside of the United States. Building on the success and experience from the hosting of IDDS 2009 on KNUST campus, IDDS 2011 will contribute to strengthen the collaboration between Massachusetts Institute of Technology (MIT) and KNUST through the TCC and ITTU. IDDS 2011 seeks to increase the involvement of KNUST students and faculty members who will serve as design reviewers. In line with KNUST community impact objective, IDDS 2011 will involve local communities around Kumasi, Suame Magazine and New Longolo in the Brong-Ahafo region.

TCC-OLIN College, Babson College, Boston, Massachusetts Collaboration

The TCC is collaborating with Olin College and Babson College of Boston, Massachusetts in an initiative known as Affordable Design and Entrepreneurship (ADE). The purpose of the initiative is to create facilities that will enable students to address the well-being of people living in low income and resource poor communities through business and technical innovation. One of the major goals of the initiative is to provide students with international collaboration experience essential for participating in today's global society. To this end five (5) students from the Departments of Agricultural Engineering and Mechanical Engineering Department have been proposed to travel to Olin College in Boston, USA to use their design laboratories to co-create relevant design solutions with students from Olin and Babson who visited the TCC in March 2011.

TCC-University of Pennsylvania (U-PENN) International Development Summer Institute Africa Program (IDSI-AP)

In collaboration with Penn-Engineering and the African Studies Center of University of Pennsylvania, the TCC will co-host the International Development Summer Institute (IDSI) class of 2011 from May 14 to June 2011. This year, seven (7) KNUST students comprising 3 females and 4 males have been interviewed and selected to participate in IDSI 2011. The programme provides students with the opportunity to have an applied learning and cross-cultural experience. It also gives students the

chance to apply classroom learning in the field and gain an insight into the world of international development. The program consists of 5-weeks of pre-programme preparation at University of Pennsylvania, USA and a 4-week long training programme on the campus of KNUST, Kumasi.

TCC-Ibis-Tek KNUST Technology Park Implementation

The KNUST Technology Park is a Public Private Partnership (PPP) between KNUST and Ibis-Tek to create facilities for creative thinkers and doers. The collaborative vision is to promote greater foundational growth for companies that will reside at the Park. Two milestones have been reached, namely signing of KNUST/Ibis-Tek MOU and sod cutting ceremony was held in February 2010. During the period under review the TCC, Ibis-Tek and the College of Engineering co-hosted a working meeting on 4th March 2011 at the Engineering Guest House, KNUST, Kumasi. The purpose of the working meeting was, among others, to identify architectural design challenges and adopt innovative response strategies and at the end make recommendations for accelerated implementation. The working meeting was attended by 15 members and recommendations were made and submitted to the University.

TEACHING

Senior members of the Centre continue to provide service teaching in some academic departments of the University.

- Dr. George Yaw Obeng continues to teach ME477 and ME 478 Production Engineering I &II and supervises students' work in the Mechanical Engineering Department, College of Engineering, KNUST, Kumasi.
- Dr. Peggy Oti-Boateng has been teaching Human Nutrition and supervises students' research projects at Biochemistry and Biotechnology Department, College of Science, KNUST, Kumasi.
- Dr. Evans Dawoe teaches Agro-forestry, undergraduate and post graduate courses in Agroforestry at the Department of Agro-forestry, College of Agriculture and Natural Resources, KNUST, Kumasi.
- Mr. Michael K. Adjaloo is currently teaching Apiculture at the Department of Agribusiness. Faculty of Agriculture, KNUST. He taught Entomology at the Department of Theoretical and Applied Biological Science.
- Mr. Donald Amrago co-supervises final year students from Materials Engineering and Department of Integrated Rural Art and Industry, KNUST, Kumasi.

COLLEGE OF HEALTH SCIENCES

INTRODUCTION

The College of Health Sciences comprises the Faculty of Pharmacy and Pharmaceutical Sciences, School of Medical Sciences, Faculty of Allied Health 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

Ag. Provost	-	Prof. K. A. Danso
Ag. College Registrar	-	Mr. H. H. Akosah
Ag. College Accountant	-	Mr. Johnson Owusu
Ag. College Librarian	-	Mr. Kwabena Ofori Asiamah

ACTIVITIES

Infrastructure/ Projects

- Plans are far advanced to put up a College Classroom and Library Complex. The five-storey building comprises lecture halls, laboratories, library and offices. A Business Plan for the project has already been prepared.
- Work on the Faculty of Allied Health Sciences Administration Block has been completed
- The Animal House of the Department of Pharmacology has been given a new face. All whole-animal experiments will now be carried out in this new facility.
- A borehole has been sunk to provide water to every part of the Faculty of Pharmacy and Pharmaceutical Sciences buildings.
- The Faculty of Pharmacy and Pharmaceutical Sciences new block is being renovated.
- 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 a cost of GH¢250,000.00.
- The old administrative wing of the Komfo Anokye Teaching Hospital (KATH) has been refurbished with assistance from the GETFund and IGF for the clinical training of students of the Dental School. Facilities in the building include:
 - 20-seater lecture room
 - A Library
 - 3 Rooms for clinical care
 - Central Supply and Sterilisation Department (CSSD)
 - A Laboratory
 - Offices
- Plans are being made for work on the KNUST Teaching Hospital to begin

Open Educational Resources (OER) Project

A policy document which was drafted by the College on OER project has been approved by the Academic Board. The Open Educational Resources (OER) project aims at making the creation and publication of open educational resources an integral part of the University knowledge creation and dissemination processes. Through the OER project, students in the collaborating institutions comprising KNUST, University of Ghana, University of Cape Town, University of Western Cape and the University of Michigan would be able to access lecture notes, classroom discussions and laboratory work through the internet.

A sample of the completed programmes on OER can be accessed freely on the website: knust@edu.gh/oer

The Ghana Emergency Medicine Pilot Training Linked programme

The Ghana Emergency Medicine Training Programme under the Medical Education Partnership Initiative (MEPI) is a five-year pilot programme. It seeks to create innovative, interdisciplinary, team-based medical training in emergency medicine (EM) to improve the management of injury and acute medical conditions throughout Ghana, while retaining more skilled providers in the country. The

programme which began in December 2010 focuses on training medical students, nurses and residents as well as current emergency care providers. Kwame Nkrumah University of Science and Technology (KNUST) through the College is partnering with the Komfo Anokye Teaching Hospital (KATH), Ministry of Health (MOH), Ghana College of Physicians and Surgeons (GCPS) and the University of Michigan (UM).

The Ghana Michigan Post-doctoral and Research Trainee NETwoRk (PARTNER) Programme

The Ghana Michigan Post-doctoral and Research Trainee NETwoRk (PARTNER), funded by the Fogarty International Center in the US National Institutes of Health, is a one-year programme expected to enhance the research efforts within the College. It is a collaboration between KNUST, University of Ghana (UG), Ministry of Health (MOH) and Ghana Health Service (GHS). Its overall objective is to strengthen interdisciplinary research capacity in Ghana in order to address global health challenges faced by low and middle income countries. One of the key strategies to accomplish this goal is a four-month intensive training of twelve post-doctoral research fellows and a year-long training of two post-doctoral research fellows at the University of Michigan.

3RD SCIENTIFIC CONFERENCE

The College organised its 3rd Scientific Conference at Anita Hotel, Ejisu from 26th to 27th August 2010 under the theme 'Reproductive and Child Health- Current Trends and Challenges.

WORKSHOPS

- A day's workshop on application of Microsoft Access in Database Management was organised for Administrative Assistants/Secretaries on 3rd August, 2010.
- A workshop on the theme 'Fulfilling the Mission and Vision of the College of Health Sciences was organised for Deans, Heads of Department and Principal Officers of the College from 18th to 20th November, 2010 at Eusbett Hotel, Sunyani.

CURRICULUM DEVELOPMENT

Plans are being made to harmonise curriculum for the teaching of common courses in the College. To this end, the College is liaising with the College of Science to equip and use some of their lecture theatres/laboratories.

INTRODUCTION OF NEW PROGRAMMES

Proposals for the following Programmes have been considered by the College Board and sent to the School of Graduate Studies for further action:

- MSc degree in Audiology
- MSc degree in Speech Language Pathology

The following programmes have been mounted:

- Top-up Diploma programme in Midwifery for Midwives in the Ghana Health Service
- BSc degree in Emergency Nursing

Proposals have been submitted to the Planning and Resources Committee for the mounting of the following Programmes.

- BSc degree in Disability and Rehabilitation Studies
- BSc degree in General Nursing for Registered Nurses
- BSc degree in Midwifery
- BSc degree in Physician Assistants Studies

NEW VEHICLE

The Dental School and the Faculty of Allied Health Sciences have taken delivery of a Nissan Pick-up each.

HUMAN RESOURCES DEVELOPMENT

Four staff have been sponsored to pursue the following programmes abroad.

- MSc degree in Nursing
- MSc degree in Medical Laboratory Technology

- PhD degree in Medical Laboratory Technology
- PhD degree in Anatomy

FACULTY OF PHARMACY AND PHARMACEUTICAL SCIENCES

INTRODUCTION

The Faculty of Pharmacy & Pharmaceutical Sciences, a foundation Faculty of the University was established sixty (60) years ago. The primary responsibility of the Faculty is to train healthcare providers in the area of Pharmacy and Herbal Medicine and this it has performed with great distinction. Over time, through its Bachelor of Pharmacy (BPharm) programme, it has trained over ninety-five (95) percent of the Pharmacists in the country. Again, through the Bachelor of Science degree in Herbal Medicine, it has significantly changed the practice of Herbal/ Traditional Medicine in the country. The Faculty is made up of six (6) Departments namely: Pharmacology, Pharmacognosy, Pharmaceutics, Pharmaceutical Chemistry, Clinical and Social Pharmacy and Herbal Medicine. The Faculty as a whole continues to discharge its responsibilities in teaching, research and extension services creditably.

CAPACITY BUILDING

The Faculty offers postgraduate training in the various pharmaceutical sciences. In addition to MPhil and PhD training in these fields, the Faculty offers MSc degree programmes in Pharmaceutical Analysis and Quality Control and Clinical Pharmacy. The Faculty hopes to start similar programmes in Pharmaceutical Technology, Toxicology and Natural Product Science. Graduates of these Programmes, it is expected, would contribute greatly to the development of this nation.

Three Senior Members of the Faculty, Dr. Kofi Annan, Dr. Christian Agyare and Dr. (Mrs) R. A. Dickson have been selected to participate in the Novartis Scientific Exchange Fellowship in Cambridge, MA, from 13 June-12 August 2011. The programme is part of Novartis' 2011 diversity and inclusion goals towards scientific capability building in Africa. The selected staff will have the opportunity to work with top scientists of Novartis using their state of the art facilities.

One Senior Member of the Department of Pharmaceutics is in University of Michigan, USA to enhance his skills in research.

INFRASTRUCTURE

The Faculty's new block is currently being rehabilitated (mainly painting) with funds from the GETfund. The five main lecture rooms of the Faculty are being fitted with air conditioners. When the renovations are completed, the Faculty will become a neat and pleasant environment for teaching and learning.

During the year under review, the Faculty took delivery of glassware of various types worth One Hundred and Twenty-Six Thousand, One Hundred and Seventy Dollars (US \$ 126,170.00), to upgrade teaching and learning in the various Departments. This was funded from our internally generated funds.

CURRICULUM REVIEW

The Faculty has reviewed its BPharm curriculum to the Doctor of Pharmacy (Pharm D) Programme. A stakeholders meeting will be held in Accra in May/ June 2011 after which it will be submitted to the College and Academic Boards for approval and implementation. All these have been possible with financial and kind support of the WHO Office in Ghana, the Pharmacy Council and the Pharmaceutical Society of Ghana.

SERVICE TO COMMUNITY

The Faculty has continued to collaborate with the Ministry of Health and its agencies to provide support in health delivery. Staff of the Faculty also continued to serve on many important committees in the University. Senior Members of Staff also served as members of various National Committees

including: 'Better Medicines for Children', a WHO Committee, sub-committees of the Food and Drugs Board, Pharmacy Council and Traditional Medicine Practice Council. Other Staff served as members of the Pharmacy Council, the Council of Centre for Scientific Research into Plant Medicine and Traditional Medicine Practice Council. One senior member serves as the Editor in Chief of the West African Pharmaceutical Journal published by the West African Postgraduate College of Pharmacists; two others have been appointed as Chairman and Member of the Drug Advisory Council of the same institution. Yet, another serves on the WHO Expert Committee on National Drug Policies.

INTERNATIONAL COLLABORATION

The Faculty has maintained its links with Universities abroad. Staff of the Faculty continued with their collaboration with agencies like the West African Postgraduate College of Pharmacists, the West African Health Organisation (WAHO) and the International Federation of Pharmacists (FIP) to define the training needs of Institutions of Pharmacy and improve the quality of pharmacy education globally. Currently the Faculty is actively involved with the harmonisation of Pharmacy Education in the West African Sub-region.

CHALLENGES

While the Faculty has made progress in staff development and rehabilitation of facilities, the situation is still below optimum as seen in the inadequate lecture room space as well as laboratory spaces. Additional sources of income are required to cater for the supply of some basic equipment needed in the various laboratories.

Although the Faculty can boast of training over 95 % of the pharmacists in the country, it does not track its alumni for meaningful interaction. There is therefore a wide gap between the Faculty and the alumni. In order to get round this challenge, the Faculty has initiated a project to track and interact with its alumni. An Alumni Co-ordinator has thus been appointed who is establishing a database to address this concern.

BENEFACTORS

During the year under review, we received support worth well over Ten Thousand Ghana Cedis (GH¢10,000.00) from corporate bodies as well as individuals. We received chemicals from Kinapharma Limited and Ernest Chemist Limited, a set of furniture from TVS Pharma Limited, and a set of pipettes of various capacities from Mr. Abdul Razak Al-Abdneger-Issifu, an alumnus. We also had our signboard redone by KAMA Group of Companies.

We also had a number of our alumni visiting to talk to our final year students, by way of mentoring the future Pharmacists. We are indeed grateful to all our benefactors.

DEPARTMENT OF PHARMACOGNOSY

INTRODUCTION

The Department of Pharmacognosy is one of the six departments in the Faculty of Pharmacy and Pharmaceutical Sciences, College of Health Sciences. Pharmacognosy is a specialised area of pharmacy and is defined as the study of the physical, chemical, biochemical and biological properties of drugs or potential drugs or drug substances of natural origin as well as the search for new drugs from natural sources. It is a specialised area of applied science that represents one of the major disciplines of pharmacy education and deals with natural products that affect the health of humans and animals. Due to the widespread use of botanicals in developing countries as well as their resurgence in use in industrialised nations, significant concerns have been raised about their quality, safety and efficacy. Pharmacognosy plays a critical role in ensuring the authenticity, purity and consistency of the materials employed in this regard. It contributes significantly to the practice of Pharmacy and Herbal Medicine.

TEACHING

The Department of Pharmacognosy offers various courses as part of the 4-year undergraduate Bachelor of Pharmacy (BPharm) and Bachelor of Science in Herbal Medicine (BSc Herbal Medicine) degree programmes. The courses cover areas in botany and chemistry of medicinal plants, their cultivation and evaluation and their role in promotion and maintenance of health in both man and animals. At the graduate level, the Department also offers research training in various aspects of medicinal plants to its M. Phil and PhD students. Currently there are ten (10) postgraduate students: MPhil five (5) and PhD five (5).

MAJOR RESEARCH BY STAFF

The Department continued to achieve excellence through its research efforts by staff. Various researches into natural products particularly those from medicinal plants have been undertaken. Notable among these are standardisation of medicinal plants, phytochemical evaluation of medicinal plants with respect to essential oil constituents and other secondary metabolites, and validation of various herbal remedies. In this regard, medicinal plants with antibacterial, antifungal and antioxidant activities as well as wound healing, antiinflammatory, antidiabetic, antihypertensive, antiasthmatic, anthelmintics, antipediculocidal effects and mosquito repellent properties among others have been investigated. Other research areas include veterinary medicine where anti tick agents from indigenous Ghanaian plants are also being investigated.

PRESENTATIONS AT CONFERENCES AND SEMINARS

The Department, under the leadership of the Country Coordinator - Dr (Mrs) Rita Akosua. Dickson and Vice Country Coordinator - Dr Kofi Annan- of the West African Network of Natural Product Scientists (WANNPRES) organised a one-day National Symposium on Natural Products Research in Ghana with the theme "Natural solutions to 21st Century Health Problems: From Research Laboratories to Commercialization" held at the Faculty of Pharmacy and Pharmaceutical Sciences, KNUST. This scientific meeting attracted natural product scientists in sister and research institutions including University of Cape Coast, University of Ghana (Legon), Noguchi Memorial Institute for Medical Research (NMIMR) and Centre for Scientific Research into Plant Medicine. The key note address was given by Prof. K. A. Danso, Acting Provost of the College of Health Sciences, KNUST.

MAJOR SERVICE TO THE COMMUNITY

Senior Members continued to offer services to the University in various capacities, serving on the College Board and its various Sub-committees, the Faculty Board and other committees in the Faculty. Emeritus Professor Kwame Sarpong continued to serve as the Chairman of the GUSSS Management Board and Management Committee of KNUST Provident Fund Association. He is the Chairman of the Arch-diocesan Health Services Board, Kumasi and a Member of the Diocesan Health Services Board, Koforidua.

Dr. A.Y. Mensah was appointed as the Pharmaceutical Society of Ghana's representative on the governing council of the Centre for Scientific Research into Plant Medicines, Mampong-Akuapem and also serves as the Chairman of the Academic and Social Wing of the Pharmaceutical Society of Ghana. Dr. (Mrs.) Rita Akosua Dickson served and continues to serve as council member of the Ghana Baptist University College. Mr. Gustav Komlaga served as a Board member, Faculty of Allied Sciences and also as a part-time Lecturer to the School of Pharmacy, University of Ghana and the Department of Pharmacy, Central University College.

The Department has been collaborating with the Food and Drugs Board in analysing and characterising herbal products prior to the issuing of license for sale on the market. Again the Department in collaboration with the Herbal Medicine Department and the Ghana Federation of Traditional Medicine Practitioners Association (GHAFTRAM) organised a workshop for herbalists in the southern part of the country under the theme: Introducing Basic Science into Traditional Medicine Practice (Part I).

At the international level, Emeritus Professor Kwame Sarpong served as the Chairman, Drug Advisory Committee, West African Postgraduate College of Pharmacists. Dr (Mrs) Rita Akosua

Dickson is serving as the Country Coordinator for the West African Network of Natural Product Research Scientists (WANNPRES).

DEPARTMENT OF PHARMACOLOGY

INTRODUCTION

The Department has a great responsibility in the University as the only Department that teaches 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 is proud of this special role and ensures that courses are designed to meet both the background and the needs of students in the various programmes in the College, without compromising on the basic principles and implications of drug action in humans and animals.

TEACHING

The Department provides courses in Basic and Clinical Pharmacology and Toxicology to the following undergraduate students in the College of Health Sciences:

- BPharm programme at the Faculty of Pharmacy and Pharmaceutical Sciences
- BSc Herbal Medicine programme at the Faculty of Pharmacy and Pharmaceutical Sciences.
- Medical and Dental students undertaking the BSc (Human Biology) programme at the School of Medical Sciences
- BSc Nursing, BSc Emergency Nursing and BSc Medical Laboratory Technology at the Faculty of Allied Health Sciences.
- O.D Optometry programme at the College of Science

The Department expects her teaching load to increase in the coming years with the recent introduction of new courses in Sonography and Veterinary medicine.

Academic Members and Staff Development

The major challenge of the Department is the limited academic staff to cope with the increasing teaching load. The situation became rather acute this year when Prof. A.K Abaitey left the Department after completing his post-retirement contract. We expect improvement in the staffing situation this year with the arrival of Dr. D.D. Obiri from Germany, following successful completion of his doctoral studies. We are also hopeful to get at least two of our graduate students who have completed their doctoral studies in the Department under the Vice-Chancellor's special initiative for staff development appointed by the next academic year.

CONFERENCES AND MEETINGS

This year, members of the Department took part in the continuing education for pharmacists organised 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 organised by the Pharmaceutical Society of Ghana in Kumasi. The Department was also actively involved in the organization and participation of the WANNPRES (West African Network of Natural Products Research Scientists, Ghana Chapter) held at the Faculty of Pharmacy and Pharmaceutical Sciences, KNUST, Kumasi.

The Department is also vigorously preparing to host the 36th Conference of the West Africa Society for Pharmacology to be held at KNUST from the 12-16 July 2011. Delegates for this Scientific Conference are expected from the whole of the West African Sub-region.

POSTGRADUATE TRAINING

The Department has stepped up the training of post-graduate students in Pharmacology in recent years. The Department graduated her first PhD student last year. We expect two to graduate at this year's congregation in June and two more in the November congregation.

The Department presently has fourteen (14) MPhil and six (6) full time PhD students at various stages of their projects.

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 has recently strengthened its links with the Centre for Scientific Research into Plant Medicine, Mampong Akuapem. Additionally, the Department collaborates with the Molecular Toxicology Unit of Imperial College London in the area of possible anticancer agents from plant sources.

EXPANSION OF RESEARCH FACILITIES

With the increasing number of students for graduate studies in pharmacology, the Department has expanded its research facilities. The Departmental animal house has been expanded and plans are underway to renovate the old animal house. With the arrival of equipment ordered under our TALIF grant for the Department's new laboratory, facilities for graduate work have improved considerably. We are looking forward to the cell culture laboratory to become fully operational to complement animal work to enhance studies into mechanisms of action of the plant products.

SERVICE TO THE COMMUNITY

The Department continues to provide 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 also continue to provide professional services to various governmental and private agencies such as the Traditional Medicine Directorate and Food and Drugs Board all of the Ministry of Health, the Pharmaceutical Society of Ghana and the Ghana College of Physicians and Surgeons. Members also offer services to international organisations including West African Health Organisation (WAHO) and the West African Postgraduate College of Pharmacists. 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.

DEPARTMENT OF PHARMACEUTICAL CHEMISTRY

INTRODUCTION

The Department of Pharmaceutical Chemistry teaches and researches in Chemistry as it is applied to drugs and their behaviour 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*, *Xylopia aetheopica*, and *Cryptolepis sanguinolenta*.

The Department has purchased and installed the following equipment under the TALIF project: one UV spectrophotometer, one IR spectrophotometer, a centrifuge, an analytical balance, an electronic melting point apparatus, two pH meters and HPLC chromatograph. These have enhanced research

activities in the Department so that eight MPhil/MSc candidates have completed their research within two years.

SERVICE TO COMMUNITY

The Department continues its traditional role in providing analytical services to some hospitals and pharmaceutical companies in the country. Senior members serve on various boards of the university, national and international bodies. Prof R. K. Adosraku was a member of a West African Health Organisation (WAHO) committee of expert persons who were tasked to visit and inspect national Quality Control Laboratories in all West African countries. This activity took place in the first two weeks of March, 2011. Prof N. N. A. Okine has undertaken various assignments of accreditation in various tertiary institutions 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 post-graduate training in the Department.

GRADUATE STUDENTS

The Department is currently training ten (10) 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.

DEPARTMENT OF PHARMACEUTICS

INTRODUCTION

Pharmaceutics is concerned with the scientific and technological aspects of the design and manufacture of dosage forms. It encompasses Physical Pharmacy, Biopharmaceutics, Dosage Form Design, Compounding, Pharmaceutical Technology and Pharmaceutical Microbiology. Pharmaceutics is the foundation of Pharmacy and is associated with steps and processes used to convert a drug into a medicine.

Pharmaceutics is normally divided into two sections, namely: General Pharmaceutics and Pharmaceutical Microbiology. General Pharmaceutics deals basically with subject areas such as Dispensing, Drug Delivery Systems, Packaging and Storage Science, Formulation of Dosage Forms, Rheology, Pharmacokinetics, Biopharmaceutics and Physical Pharmacy. Pharmaceutical Microbiology offers in-depth information on all major groups of micro-organisms and their relationship to man and animals. The subject covers areas such as Pathogenesis and Immunology, Chemotherapy, Sterilisation & Disinfection and Preservation. Industrial fermentation and biosynthetic processes used for the production of compounds of both medical and industrial importance such as antibiotics, vitamins and blood expanders, are also covered.

PROGRAMMES OFFERED BY THE DEPARTMENT

The Department teaches Dispensing theory and Dispensing laboratory in the BSc Herbal Medicine programme and the following courses in the Bachelor of Pharmacy Programme: Orientation and Dispensing, Dispensing Laboratory I, Physical Pharmacy, Dispensing Laboratory II, Sterilization and Disinfection, Pharmaceutical Microbiology Laboratory I, Pharmaceutical Technology I, Pharmaceutical Technology Laboratory I, Applied Pharmaceutics, Pharmaceutical Technology Laboratory II, Immunology, Pharmaceutical Microbiology Laboratory II and Industrial Pharmacy.

The Department also runs 2-year MPhil and 3-year PhD degrees in Pharmaceutical Microbiology 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 on the Ghanaian market. Some of the research topics currently under investigation in the Department are the following:

- Wound healing activities of some isolated compounds and extracts from medicinal plants
- Search for bioactive compounds from medicinal plants against *Leishmania major*, *Onchocerca volvulus* and *Onchocerca ochengi* (neglected diseases)
- Antibiotic resistance in poultry and other animals
- Antimicrobial activities of some Ghanaian medicinal plants
- Availability and quality of artemisinin-based 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, characterisation and antibiotic susceptibility testing of some organisms isolated from the environment and patients
- Antibiotic resistance modulators from natural sources
- Identification of commonly encountered nosocomial microorganisms in Ghanaian hospitals and their antibiograms
- Evaluation of antifungal activity of tablets made from the stem bark of *Magnifera indica*
- Evaluation of antimicrobial activity of tablets made from the roots of *Paulina pinnata*
- Identification of antimicrobial metabolite-producing microorganisms from water bodies in Ghana

CONFERENCES, WORKSHOPS AND SEMINARS

Senior Members in the Department attended and actively participated in local and international conferences, workshops and seminars in the year under review. Senior members attended and presented papers at the 3rd Annual Scientific Conference of the College of Health Sciences, KNUST, held at Anita hotel, Ejisu, Kumasi, from 10 – 11 September, 2010. Senior Members were also active participants at the 75th Pharmaceutical Society of Ghana (PSGh) Conference which was held at the Great Hall, KNUST, Kumasi, from 5 – 10 August, 2010. Dr Ofori-Kwakye was a member of the scientific committee of the 75th PSGh Conference. He was a participant in a two-day stakeholder meeting on the Doctor of Pharmacy (PharmD) programme curriculum development organised by the Ghana Pharmacy Council at Miklin Hotel, Accra, 2 – 3, August, 2010. Senior Members also attended the Pharmacy Council organised continuing education program for pharmacists held at Miklin Hotel, Kumasi.

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

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 still 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 the community level. Pharmacy Practice research, and society's attitude and health-seeking behaviours which impact on health outcomes, continue to dominate our research.

SERVICE TO COMMUNITY

Senior Members of the Department have been involved with workshops for training of practitioners and revision of drug policy documents for the Ministry of Health. Most practice at the community level. Service to the University community has also improved with all Senior Members serving on more committees

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 four undergraduate students from Finland to Ghana.

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 modernise and improve 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. We have completed the revision of the curriculum of the programme. The new syllabus will strategically position the graduates to excellently promote herbal medicine practice in the country and beyond.

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 included Ghana Atomic Energy

Commission. Global Institute for Bio-Exploration (GIBEX-Africa), Agribusiness in Sustainable Natural African Plant Products (ASNAPP) and Department of Botany, University of Ghana, Legon.

CONFERENCES AND MEETINGS

Senior Members of the Department actively participated in and presented papers and abstracts at the following Conferences and Workshops: The College of Health Sciences's 3rd Scientific Conference 2010, held at Anita Hotel, Kumasi; the 3rd Global Summit on HIV/AIDS, Traditional Medicine and Indigenous Knowledge, held at Miklin Hotel, Kumasi; and the National Symposium of the Western African Network of Natural Product Research Scientists (WANNPRES) Ghana Chapter, held in March 2010 at KNUST, Kumasi. Members also attended the Annual General Meeting of the Pharmaceutical Society of Ghana.

Prof. MLK Mensah participated in the Capital Natural Health Fair and Exhibition conference organised by the Capital 02 NATURAL HEALTH CO. LTD. from 23rd - 26th November, 2010. Prof. T. C Fleischer also participated in a seminar on "Investing in Technology for the right results in the area of Separation Science" organised by Process and Plant sales in conjunction with Leco Africa (PTY) at Novotel, Accra, on 26th May, 2010.

Service to the Community

During the year under review, Senior Members of the Department 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 sub-committees.

Members continued to serve as resource persons and/or experts on various Technical/ Expert Committees of the Traditional and Alternative Medicines 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 Boards (GSB) and West African Health Organisation (WAHO). Prof. MLK Mensah was nominated as a member of the Technical Advisory Committee on Safety by the Food and Drugs Board. Dr Kofi Annan continued to serve as a Member of the West Africa Health Organisation (WAHO) Expert Committee on Traditional Medicine. He was also appointed a member of the Kumasi Metropolitan Assembly and as a part-time lecturer to the School of Pharmacy, University of Ghana (Legon).

The Department in collaboration with West African Health Organisation (WAHO) and Ghana Federation of Traditional Medicine (GHAFTRAM) successfully organised training workshop for Herbalist and Traditional Medicine Practitioners in Ghana on the Theme: "Introducing Basic Science into Traditional Medicine Practice" on February 5, 12 & 19, 2011.

SCHOOL OF MEDICAL SCIENCES

INTRODUCTION

The School of Medical Sciences continues to make strides in its quest to train more health care personnel to improve health care delivery in Ghana and to achieve academic and professional excellence. During the past year, the School initiated several ventures to facilitate its operations.

DEPARTMENTS

The School has 15 Departments teaching courses leading to the award of BSc (Human Biology) and MB ChB degrees respectively. The Heads of Department assist the Dean in the administration and facilitate the academic work of the School.

ENROLLMENT LEVEL

For the first time in the life of the School, 227 students were admitted for the 2010/2011 academic year as the largest class ever to pursue 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 the health institutions at various levels towards the realisation of quality health care delivery in the country. A

batch of 121 students would be graduating at the end of 2010/2011 academic year in July. Currently the School has a student population of nine hundred and thirty five (935).

HUMAN RESOURCE

During the year under review a few new appointments of Senior Members were made. The total number of senior members now stands at 110.

PARALLEL PROGRAMME

The Academic Board gave approval to the School to increase intake and to also run Parallel Programme for the Human Biology and the MBChB Programmes. This has begun in earnest.

NEW PROGRAMMES/POSTGRADUATE PROGRAMME

The MPhil in Anatomy and Cell Structure programme started during the year under review with twelve (12) students. Responding to the request of the Ministry of Health to train middle level health personnel, efforts are well advanced to mount a BSc programme in Physician Assistantship to begin in the 2011/2012 academic year. A curriculum has also been developed for the MSc Audiology and Speech Pathology programme hopefully to also commence next academic year.

ELECTIVE PROGRAMME

In line with our international reputation as an excellent place for academic and professional medical training, the School hosted a lot of foreign medical students from Europe, Canada, America and a few from Nigeria for their elective programmes.

REVIEW OF CURRICULUM

The School completed the review of its curriculum which began last year. The review included:

- Replacement of all the Chemistry Courses in Year 1 with a new course called Basic Medical Chemistry;
- Rescheduling of the placements of the various courses in the Basic Sciences Programme;
- Introduction of 'terminal' end of semester examinations for all courses in the Basic Sciences Programme; and
- Re-organisation of the respective syllabuses in line with the semester examinations
- Abolition of oral examination in the Basic Sciences courses

TEACHING SITES FOR CLINICAL PROGRAMME

The School has made a lot of strides in pursuing the affiliation of outlying hospitals as teaching sites for clinical training. This is to expand the range of hospitals for clinical training, strengthen the community-oriented training philosophy of the School, assist in improving health care delivery at the district level and peripheral hospital, and ultimately ease the congestion at the Komfo Anokye Teaching Hospital. So far, some hospitals in the Ashanti and Brong-Ahafo regions have been contacted to be included in the 'network of teaching sites.' These are:

- Anglo Gold Ashanti Hospital, Obuasi
- Bekwai Government Hospital, Ashante Bekwai
- Agogo Presbyterian Hospital, Asante Akyem Agogo
- Juaben Government Hospital, Asante-Juabeng
- St. Patrick Catholic Hospital, Offinso
- St. Michael's Catholic Hospital, Jachie-Pramso
- KNUST Hospital
- Sunyani Regional Hospital

Preliminary discussions had been held with the directorates of all these health facilities with an overwhelming support from all of them. To facilitate the commencement of the programme which is

envisaged to start in August 2011, the School Board has constituted an implementation Committee of the Programme.

LEARNING / FACILITIES FOR TEACHING

In pursuit of its work plan for learning and teaching needs for the various Departments to be implemented in phases, the School procured the second consignment of the facilities comprising microtomes and accessories for tissue processing for the teaching of Anatomy and Pathology, fifteen new flat screen computers for the School's Computer Laboratory and other laboratory equipment for the Department of Molecular Medicine for practical work. Discussions are also underway with Telecommunication Companies for possible integration of ICT into teaching particularly video conferencing to link classrooms in real time for teaching and learning. The School also has acquired a Conference Call Telephony under the TALIF Project to facilitate communication with its international collaborators.

SKILLS LABORATORY

The construction of a Skills Laboratory located at the Students' Hostel at KATH is progressing steadily. Order has been placed for the procurement of the manikins which is expected to be delivered before the end of the academic year. The facility is expected to be ready for use at the beginning of the new academic year to enhance clinical teaching.

TUTORIALSHIP/MENTORSHIP SYSTEM

The re-introduction of the tutorialship and mentorship system began in earnest during the year under review. This has improved the student-lecture relationship. It is expected that the system would be sustained in the coming years.

RESEARCH AND CONFERENCES/ STAFF DEVELOPMENT

Members of the School actively participated in the Third Scientific Conference of the College of Health Sciences which was held in August 2010. Plans are underway to have the 4th Conference.

PHYSICAL DEVELOPMENT

Centre for Disability and Rehabilitation Building

The construction of the first phase of this building for the Disability Programme was completed and commissioned in December, 2010. The Project Office has now been moved to the Centre which is adjacent the Business School Complex.

Laboratory Facility for the Human Biology Programme

Following the directive by the Vice-Chancellor to promote common use of facilities in the University, the School is negotiating for two laboratories in the College of Science complex building for use. Unfortunately the rooms do not have water and gas pipe systems. Efforts are being made to get this done.

INCOME GENERATION ACTIVITY

The mortuary continues to serve as the main source of income generation for the School. Other areas such as processing of tissues and introduction of fee paying programmes are being explored to generate more income for overall institutional development.

COLLABORATION

The School continues to maintain its collaboration with Doctors Academy in the United Kingdom to develop teaching aids for Clinical training as well as the Universities of Utah and Michigan both in the United States of America.

DONATION

The School received an amount of sixty thousand Ghana cedis (GH¢60,000.00) from the COCO Board.

CHALLENGES

The School continues to experience challenges in the following areas:

- Inadequate academic staff to deal with the large students' population;
- Inadequate modern facilities for teaching and laboratory work;
- Inability of the School to admit majority of the qualified applicants who apply to pursue the BSc Human Biology Programme annually;
- Unavailability of modern laboratories for postgraduate Programmes and research

WAY FORWARD

- To develop and introduce more Post-graduate programmes
- Would continue to pursue its recruitment drive to improve the number of lecturers for teaching
- To improve and expand ICT facilities for teaching, laboratory work and research
- To explore more innovative ways of generating more income to support teaching and learning as well as staff motivation.

DEPARTMENT OF ANAESTHESIOLOGY & 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:

1. Anaesthesia
2. Intensive Care
3. Pain Relief

AIMS AND OBJECTIVES

- a. Undergraduate training in the basics of anaesthesia, intensive care and acute and chronic pain management. The training includes practical training in the anaesthesia clinic, the theatres, post anaesthetic care units (PACU) and intensive care units.
- b. Postgraduate training of surgeons and obstetricians/gynaecologist in the basics of anaesthesia, intensive care and pain management.
- c. Post-graduate training of physicians in airway management, artificial ventilation and invasive monitoring.
- d. Training of medical and non-medical personnel in Basic Life Support and Advanced Cardiac Life Support.
- e. Training of undergraduate students in anaesthesia and emergency medicine.

ACTIVITIES

1. The Department collaborates with the University of Ulm, Germany to train post-graduate doctors and do joint research.
2. 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.
3. 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.
4. The Department organised an update in Anaesthesia conference for Anaesthetist practitioners in Ghana and some parts of the sub-regions.
5. In conjunction with the Ghana Association for the Study of Pain, the department organized the first ever pain seminar in Kumasi bringing together Doctors, Nurses, Pharmacists, Physiotherapists, Psychologist and Radiologists.

ACHIEVEMENTS

1. The Department has established a pain clinic which is run by the consultants in the Department to take care of patients with chronic pain.
2. The Department received accreditation from the Ghana College of Physicians and Surgeons to run a post-graduate training in Anaesthesia. Two residents have already been enrolled in the programme.

PROJECTIONS

The Department wishes to pursue the following activities in the ensuing years:

1. Recruitment of teaching staff to augment the existing staff strength.
2. Repackaging of the existing syllabus for medical students to make the profession more attractive to young doctors.
3. 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

INTRODUCTION

The Department plays a unique role in the University as the only department involved in the teaching of Human Anatomy to almost all the students in the College of Health Sciences and to Optometry students in the College of Science. The staffing situation of the Department remains at five senior members (academic staff), and 18 technical and supporting staff. We continue to depend on the support of the technical and supporting staff for the day- to-day running of the Department. In view of the unique role of the Department in providing teaching to several Departments in the University, there is the urgent need for qualified lecturers to join the Department to augment the current staff strength. The Department has responded to this need by admitting 4 MPhil students through collaboration with the Departments of Biological Sciences, KNUST and Anatomy, UGMS. In addition, the Department has been given the approval to start an MPhil programme in Human Anatomy and Cell Biology in the 2010/2011 academic year. The MPhil programme in Human Anatomy and Cell Biology is a unique two-year programme that combines research with taught courses in Gross, Microscopic and Developmental Anatomy, Cell Biology, Cytogenetics, Molecular Biology, Neuroscience, and Anatomical Techniques employed in the preservation and preparation of human material for teaching and research.

TEACHING

Our members of staff continue to work tirelessly to improve teaching in the Department to higher standards. The Department encourages research-led teaching and promotes student-centred learning and independent learning by students. The Department has been very successful in motivating the students to develop an interest in Human Anatomy. This has been done through the identification of academically weak students and spending considerable hours with them on one-to-one basis. The result is the dramatic change in the perception of the subject. In addition, the Department continues to organise small group tutorials, and demonstrations and Computer-Assisted Learning (CAL) LAB Anatomy tutorials to the students. The Department offers courses at the undergraduate level in areas including Medical Sciences (both medical and dental), Medical Laboratory Technology, Nursing, Sports Science, Sonography and Herbal Medicine. The Department also provides courses at the MPhil level in Reproductive Anatomy, Reproductive Health, Disability and Rehabilitation and at the Medical Professional level (Primaries) for West Africa College of Surgeons and the Ghana College of Surgeons and Physicians. The instituted measures to cope with the large numbers of students and dedication of staff is reflected in the results of the final Anatomy examination which shows a gradual but consistent increase in the number of students who pass their Anatomy examinations with distinction, credit and good pass.

RESEARCH AND COLLABORATION

The Department has research links with the Departments of Obstetrics and Gynaecology (SMS), Pharmacology, Pathology (SMS & UGMS) and Biological Sciences, KNUST. We have also made

progress on student thesis supervision and are currently supervising 6 final year Medical Laboratory Technology students and four MPhil students in various projects.

SERVICE TO THE COMMUNITY

Members of the Department continue to give invaluable services as external examiners to sister Universities and consultancy services to the Ghana Police Service.

INCOME GENERATION

The Department continues to generate income through embalming and storage of cadavers brought in by the public. Currently there is more storage space for the large numbers of student cadavers required for the increasing student population, for staff and their dependants and also for the public.

DEPARTMENT OF BEHAVIOURAL SCIENCES

INTRODUCTION

Behavioral Sciences is primarily concerned with the observation, understanding, prediction, and control of behavior. This department has been in existence in the medical school since 1982.

AIMS

As a department, we have aimed over the years to

- help fulfill the general School of Medical Sciences' vision of training of all round, high calibre and highly sensitive doctors with high ethical, moral and social standards
- fulfill the above aim by instilling into the young and budding medical students the importance of behavioral/ psychosocial factors in the genesis, course and treatment of physical and mental ill health
- research into mental health illnesses and related issues, and
- provide a much needed mental health services, thus doubling as a Psychiatric Unit at the Komfo Anokye Teaching Hospital (KATH)

ACADEMIC ACTIVITIES

Our core mandate as with every department includes; teaching, mental health service provision and research.

UN - EXECUTED DEPARTMENTAL PROJECT

Staff of KNUST are often beset by psychosocial/ behavioural (drugs, alcohol, marital, job stress and dissatisfaction, staff – staff conflicts, rape, children) problems that take awful amount of time and psychological energy to deal with. This goes against the University by way of lost man - hours with absenteeism and lost concentration on the job. The Department planned to undertake a project in collaboration with the Human Resource Department of KNUST to offer special psychological services to take care of these needs. Unfortunately however, this could not be done in the year under consideration because of pressure of work for the two Clinical Psychologists. Members of the Department for 2011/12 are urged to pursue this planned project.

SERVICE TO COMMUNITY

The Department is a major service provider for mental health services not only for Kumasi metropolis but also for the entire northern part of Ghana. The 2010/ 2011 academic year saw a major rehabilitation and expansion of the Department into a modern edifice providing such invaluable service to community – thanks to authorities of Komfo Anokye Teaching Hospital (KATH). An additional space for use as a recovery ward was provided in the process. Also under the directives of Dr Yaw Osei, a dedicated pharmacy window was constructed solely for our patients and that has greatly enhanced our service delivery.

Services provided by the Department included Psychiatric (Medical and Nursing); Psychotherapy; Clinical and Forensic Assessment and reports as well as preventive mental and educational health talks. We also rendered specialised services to our affiliated satellite organisations such as Kumasi Cheshire Home, Garden City Special School, Asokore Mampong and Community Psychiatry in Tafo

in the year under review as usual. Internally, the Department runs liaison services for other KATH directorates as and when consults are requested, and contributed regularly to emergency care of patients at the Accidents and Emergency Centre.

HEALTH TALKS/ RESOURCE PERSONS

In the year under review staff of the Department served as resource persons for various media programmes on mental health and various health talks as follows; “Keeping a Sound Mind” for Sisters Convent, St Louis Senior High School, “Stress and its relationship to Psychological illness – Assemblies of God, Kronom and “Causes of Madness” – St Dominic & St John of the Cross Catholic churches, Bremang & Kronom respectively. We also organised two separate workshops on “Psychological preparation of Patients for the World” and “Building Self Esteem in the Environment of Stigmatisation” for graduates of Cheshire home – our half way psychiatric satellite home. Daniel Fodjour (National Service Personnel) and Christian Amoah provided the above services as resource persons.

All year round the Nursing Department organises regular health talks on selected relevant mental health topics such as; “Importance of Drug Compliance”; “Handling Autistic Children”; “Causes and Management of Epilepsy and Other Mental Health Disorders”; “Stigmatisation and Discrimination Against the Mentally Ill”; to mention a few.

INTERNATIONAL AFFILIATIONS

The Department maintained linkage with partners in the United Kingdom, Ireland and Australia by way of teaching and research. In the year under review, a total of four lecturers (Richard, Jonathan Langhans and colleagues) found time to come over to help with Clinical Teaching. Contribution by Dr Vincent Agyapong – an alumnus of S.M.S currently with Trinity College, Ireland is also worth mentioning. Not only did he find time to lecture our Clinical students, he and his Professional colleagues in Ireland organised the first ever nationwide live telecast Medical School debate. It is worthy to note that in this debate KNUST’s 4th year medical students emerged as winners. As mentioned earlier Dr Adjapong is championing a “Child and Adolescent Mental Health Centre” to be set up in Kumasi (KATH) and with inputs from the Dean has authored a course handbook for Clinical students for possible adoption for use as a guide for rotation in the Department.

OUR NEEDS

- We still need additional staff (Clinical Psychologists; Full time Consultant Psychiatrists and Social Workers) to ease up pressure on us to be able to do more research.
- Lack of office spaces on campus for Senior Members hampers research, teaching and even service provision as most students and staff needing psychological services often come to us for help on campus.

DEPARTMENT OF CHILD HEALTH

INTRODUCTION

The Department of Child Health runs the Child Health Course for the MB ChB programme of the School of Medical Sciences, College of Sciences, at the Komfo Anokye Teaching Hospital. The Directorate of Child Health, as it is called at the Komfo Anokye Teaching Hospital, is a 320 bed paediatric health facility that provides tertiary care to the Ashanti, and Brong Ahafo regions as well as to some communities in the northern parts of the Western region and Northern Ghana. The directorate also provides primary care to surrounding communities in Kumasi. More than 36,000 out-patients and 10,000 in-patients were attended to in the year 2010.

The clinical directorate comprises three main Units, namely, a Mother-Baby Unit (MBU, which is a 120-bed facility for neonatal care), a Paediatric Emergency Unit (PEU), and three General Paediatric Wards that also provide subspecialty paediatric care in the areas of pulmonology, cardiology, haematology/oncology, nephrology and malnutrition. The directorate functions with a team of about

72 doctors including 22 specialists (and University staff), 96 nurses as well as about 80 ancillary and other support staff.

The facility is also accredited by the Ghana and West African Colleges of Physicians (GCP, WACP) as well to train post graduate Specialist Paediatricians in Ghana and the sub-region to address effectively the challenges of child health care and practice. Currently, a total of 24 Residents are in training to qualify as Junior Specialists in Child Health.

ACTIVITIES

Masters in Public Health Course

The Department runs the Child Survival and Development course of the Masters in Public Health programme organised by the Department of Community Health.

Emergency Nursing programme.

It also partners with the Department of Nursing to run the newly-established Emergency Nursing programme organised by the Department of Allied Health Sciences.

Utah Collaboration

We have a long-established collaboration with the University of Utah which has grown since 2001. It started with a team of paediatric sub-specialists visiting yearly to provide updates and offer some teaching to medical students. In the last couple of years we jointly organised 3-day conferences yearly for 40-60 paediatric care givers on Paediatric Advanced Life Support (PALS), Neonatal Advanced Life Support (NALS) and current topics in child health care in which faculty members from Utah paired with local faculty members to provide the updates. It is hoped that this will improve child health care in the region and strengthen links between the teaching hospital and the other health care institutions.

Assistance to UDS, Tamale

Members of our faculty also assisted the School of Medical and Health Sciences, University for Development Studies, Tamale in providing lectures and bedside teaching as well as conducting clinical examinations in Child Health for their medical students for the 2010-11 academic year.

VISITORS

A team of paediatrician and nurse educators from University of Newcastle-Upon-Tyne, United Kingdom visited the department with the objective of helping to establish a Paediatric Nursing Course at KNUST, a long-awaited venture which is expected to improve child health nursing competencies and improve care and professionalism. An academic medical team from Michigan, USA also visited to explore possibilities for collaboration.

ELECTIVE STUDENTS

The Department continues to be popular among European and American medical students for electives. A total of 35 elective students visited the Department within the academic year from Germany, Belgium, Washington, Slovenia, Luganska, Ukraine, Refensburg, Switzerland, Spain and Poland

SERVICE TO THE COMMUNITY

Collaboration with GHS on neonatal care in Kumasi

The Neonatal Unit of the Department is in partnership with the Metro Health Services (Ghana Health Services), Kumasi and the Government of Israel to develop neonatal care centres and improve neonatal survival in the city of Kumasi. In this regard, faculty members and doctors from the Komfo Anokye Teaching Hospital in partnership with Israeli paediatricians have developed training modules for neonatal care that are used in the training sessions since 2007. Two neonatal care centres have been developed in Kumasi at Kumasi South and Suntresu Hospitals to support services offered at KATH. Paediatricians from the Department provide support to these facilities with the hope that they would eventually become autonomous in neonatal care.

Collaboration with Ghana Health Service

The Department continues to collaborate with the Ghana Health Service on emerging concerns of child health care and service delivery in Ghana. Members of the faculty serve as facilitators on numerous child health training programmes and also on committees for review of various child health care policy documents and strategies including the Scaling up of Newborn Screening for Sickle Cell Disease, HIV/AIDS management and Poliomyelitis eradication. Facilities at the Komfo Anokye Teaching Hospital continue to be used regularly for training of health staff on Breast Feeding and Lactation Management and Integrated Management of Childhood Illness (IMCI), and more recently neonatal care. Having the only well-established neonatal care centre in Kumasi and the northern sector of Ghana, the Department provides the model for neonatal care for the northern half of Ghana. The Department also regularly participates in the biennial meetings of the Reproductive and Child Health Division of the Ghana Health Service.

Our faculty members also regularly play key roles in the Child Health aspects of Continuous Medical Education Programmes (CMEs) for the Northern Sector of Ghana as well as participate in radio programmes on Child Health issues in Kumasi.

RESEARCH

Research continues to be a major activity in the Department. The following research activities were in progress in the Department in the year 2010/11.

- Rotavirus Sentinel site Surveillance (as part of few selected sites in Ghana) (WHO/AFRO)
- Paediatric Bacterial Meningitis Surveillance Programme (WHO/AFRO)
- Newborn screening for Sickle cell Disease (NCSD)
- Barekuma Collaborative Community Development Programme (KATH-Univ of Utah-Atwima Nwabiagya District Assembly) (Community Support)
- Efficacy and Safety of Rectal Artesunate Study- Randomised control study (WHO/TDR)
- Ocular changes in patient with cerebral malaria
- Prevalence Studies on childhood Burkitts lymphoma
- Prevalence Studies on childhood Epilepsy
- Outcomes in newborns delivered by vacuum extraction -(OBGy & DCH collaboration)
- Acceptability of KMC in the Community
- Response to ARV in HIV infected children

CHALLENGES

The student-lecturer ratio continues to dwindle while the Department is challenged by the limited space at KATH both for patient care and for coping with teaching large numbers of medical students. Plans are well underway to establish external clinical teaching sites and to appoint adjunct lecturers at these sites to address the challenges.

The Department continues to provide excellent teaching and learning opportunities and strives to improve the environment for clinical practice and service provision which will in turn provide the appropriate environment for sound clinical training and research for both undergraduate and post-graduates students. It is hoped that the coming year will find us well on course in the strides of realising our objectives in the service for our nation and mankind.

DEPARTMENT OF CLINICAL MICROBIOLOGY

INTRODUCTION

The Department of Clinical Microbiology has a staff strength of 8 full-time Senior Members, 2 part-time academic staff, and 3 Technical staff, supported by a secretariat manned by an Administrative Assistant. Three national service personnel support practical lessons and other ancillary activities in the Department.

The Department teaches courses in Bacteriology, Parasitology, Mycology, Virology and Immunology to undergraduate medical students in the School of Medical Sciences, the School of Dentistry, and the Faculty of Allied Health Sciences. At the Faculty of Allied Health Sciences, beneficiaries include

students of Nursing, Medical Laboratory Technology, and Sonography. Our technical laboratory staff also support practical classes to the Veterinary School.

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 their prevention and control is emphasised, especially those with epidemic potential in Ghana and the sub-region. Infection control in the health setting and host response to infections is also addressed. 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 and sonography undertake basic clinical microbiology with emphasis on infection control procedures in clinical settings.

The breakdown of, the undergraduate student population for the Department for 2010/2011 were; 131 medical students, 8 dental students, 131 medical laboratory students, 116 nursing students and 22 students of sonography.

The Department also runs PhD, MPhil and MSc programmes in Clinical Microbiology. Currently there are 3 PhD students, 8 MPhil students, and 12 MSc students enrolled.

Apart from teaching, research and mentoring in the University, the Senior Clinical Staff also serve as Specialist Clinical Microbiologists/Senior Technical Staff at the Komfo Anokye Teaching Hospital. At the hospital, postgraduate clinical teaching for the Ghana College of Physicians and Surgeons and the West Africa Postgraduate Medical College forms part of our responsibilities.

The Department completed the furnishing of its Virology and Molecular Biology laboratory with funding from a TALIFF grant this year. This would greatly augment its teaching and research activities.

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 characterisation 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, the National Institute for Medical Research, Tanzania, Bernhardt Nocht Institute, Hamburg the Boston University Centre for Global Health, and the United States Agency for International Development. We also collaborate with the University of Liverpool (UNILIV), The Abdul Salam International Centre for Theoretical Physics (ICTP), Institute Pasteur de Dakar (IPD),

University Chich Anta Diop de Dakar (UCAD), University of Malawi (Polytechnic and College of Medicine) (UNIMA), Universitaet zu koeln (UOC), University of Pretoria and Centre de Suivi Ecologique (CSE).

DEPARTMENT OF COMMUNITY HEALTH

ACTIVITIES

Teaching

The Department continues with its three-part training programme in the School of Medical Sciences and the School of Research and Graduate Studies.

- a. Undergraduate medical training in Community Health
- b. Graduate training in Health Services Planning and Management, Health Education & Promotion and Population & Reproductive Health
- c. Certificate course in Health Education
- d. Short courses in Epidemiology & Biostatistics, Reproductive Health & Development, Leadership in Reproductive Health, Community-imci, Reproductive Health Research Methods and Contraceptive Update and Counselling
- e. Undergraduate community health training for students in Nursing, Herbal Medicine, Sports and Exercise Science, and Engineering

The Department has received commendation from the UNFPA, WHO and UNICEF for the introduction of the above-listed short courses at the graduate level.

Senior Members provide mentorship to students from various universities across the globe: Johns Hopkins University, Amsterdam Medical Centre, University of Utah, University of Michigan, London School of Hygiene and Tropical Medicine, University of Greifswald, Columbia University among others.

NEW PROGRAMMES

The Department has introduced leadership training into the curriculum for both undergraduate and postgraduate training programmes. The need to produce health managers has become more important now than ever before. This introduction will give products of the School of Medical Sciences a competitive advantage over the peers from other similar schools.

COMMUNITY SERVICE/CONTRIBUTION TO SOCIETY

The Department through its undergraduate medical programme places students in rural Ghana where the students undertake community health activities such as community diagnosis and community-based operational research. The postgraduate training programmes offer similar services to rural communities. The results of such community health activities are fed back to community-based agents, the Ghana Health Service, traditional authorities and local government for appropriate health action at the community level. Senior Members of the Department serve in various capacities to contribute meaningfully to society.

The Department with support from UNICEF is collaborating with Ghana Health Service and Ghana Red Cross to implement community-integrated management of childhood illness (C-IMCI) in Upper East Region. C-IMCI has been identified as one of the most cost-effective health interventions in the survival, growth and development of children under 5 years old. Direct results of the Department's efforts in the field of child survival are: the current national policy on the use of antibiotics for the management of non-severe pneumonia at the community level, the policy on community case management of uncomplicated malaria and the policy on the use of Zn tablets in diarrhoea case management at the household/community level.

The Department has provided a special monitoring team for the Global Fund for Malaria activities in the Roll Back Malaria intervention in Ghana.

CONFERENCES/SEMINARS

Senior Members of the Department are frequent participants at seminars and meetings either as resource persons or facilitators or participants. The Department has been involved in policy formulation seminars in reproductive health, malaria control in pregnancy and the malaria drug policy change for Ghana.

INNOVATIONS

The Department has proposed to source scholarships for short courses in the following areas:

- Epidemiology and Biostatistics
- Reproductive Health & Development
- Community-Integrated Management of Childhood Illnesses
- Reproductive Health Research Methods
- C-imci

The Department has the view to 'change the way things are done for the better' through the use of ICT materials and methods. This would greatly enhance teaching and learning and provide the opportunity for a greater number of people to benefit from the academic and research programmes of the Department.

Faculty at the Department have produced CD copies of all lecture notes of courses so that residents, students and others can access them. These power point presentations are reviewed each year and the direction is to add voice to these presentations to improve their acceptability.

PROJECTIONS

Despite the popularity and the demand for the current postgraduate programmes and the proposed short courses, there have been disadvantaged through underfunding. The Department is of the opinion that the introduction of fees to meet the cost of running the various programmes will greatly enhance programme delivery and will place the name of KNUST on the international map of training centres for health issues. The current level of fees charged for the graduate programmes does not adequately meet the running cost and hence the sometimes mediocre nature of components of these programmes. For example, academic mentors are unable to undertake field supportive supervisory and coaching visits to residents during the field residency component of the training programme. The result is that students produce dissertations that do not meet standards for publication in peer reviewed journals.

The Department continues to mobilise additional resources from local and international sources to try to meet the requirements of running such training programmes.

INTERNATIONAL AFFILIATIONS

The Department has some links with health-related United Nations Agencies such as WHO, UNICEF, UNDP and UNFPA. The Department has close contact with DANIDA, the World Bank, DFID, USAID and JHU-CCP. The Department together with the Department of Obstetrics and the Gates Institute, Johns Hopkins University School of Public Health have begun the 5-year phase II of the collaborative linkage project. The Department is holding discussions with the Columbia University-Mailman School of Public (USA) to support emergency medicine in rural hospitals in Ghana.

CONCLUSION

The Department is convinced that the future is bright. The Department is working hard to attract lecturers to beef up its current number so as to ensure smooth running of academic work.

DEPARTMENT OF EENT

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 Brobbey, 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 specialties. 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. Our department has achieved this goal. 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.

DEPARTMENTAL AIMS/ OBJECTIVES

The Department Aims to:

- i. Fulfil the general purpose of SMS through the pursuit of excellence in teaching, service, ethical and character training.
- ii. Provide basic clinical training in Eye, Ear, Nose and Throat through lectures, practical and clinical demonstrations through tutorials, seminars etc.
- iii. Promote and conduct research into the various facets of Ophthalmology, Otorhinolaryngology and Clinical Audiology and Speech Pathology.
- iv. Provide postgraduate training for the 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.
- v. Provide the requisite health care service to the general public and to offer advice on good ear care practices.
- vi. 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:

- a. Master the care of patients with a tracheostomy; identify signs of danger and act to correct these.
- b. Describe which patients need specialist care, refer them to a special unit and describe in detail the clinical features and any treatment given.
- c. Practice the following skills (i) Use head mirror to examine the upper respiratory tract and ear; (ii) Tuning fork testing-schwabach, Rhine, Weber Otoscopy; (iii) Learn the technique and identify the application direct and indirect laryngoscopy, anterior and posterior rhinoscopy
- d. Treat common Ear, Nose and Throat disorders
- e. Identify basic equipment used in hearing evaluation and different types of hearing aids.
- f. 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 11 residents at various levels of training in the Department. These include 7 candidates at the Ear, Nose and Throat Unit and 4 at the Eye Unit. They are preparing for the primaries and various levels of the FWACS Examinations.

FUTURE POST-GRADUATE 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 for post-graduate students of Optometry. The ENT Unit has also obtained 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.

STUDENT NUMBERS

5th Year Student	-	141
6th Year Students	-	138
Residents	-	15

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 Bernhard Noth 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.

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 Unit

- 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 INTERNAL MEDICINE

INTRODUCTION

The Department of Medicine is manned by 10 full-time academic staff, one part-time lecturer, a clerk 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 post-graduate 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 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. For the year 2010, 140 students passed out as medical doctors.

Post-graduate training is a student-centred approach which encourages active learning through guided self-study. The post-graduate and undergraduate programmes are supported by academics from UK, US and other parts of EU.

The Department of Medicine trained eight (8) Physicians and three (3) Senior Specialists

RESEARCH

Current Research activities in the Department include the following:

1. 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 Anna Maria Geretti (University College of London) and Dr David Chadwick (Middlesbrough)
2. 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
3. Cerebrovascular Accident and metabolic study: a pilot study of rapid, point-of-care HIV testing in the VCT and TB clinics at KATH.
4. Development of an oral regimen for treatment of Mycobacterium ulcerans disease (buruli ulcer): a randomised trial of standardised treatment of buruli ulcer with non streptomycin based combination therapy
5. Endoscopic findings in patients with acute upper gastrointestinal bleeding at KATH
6. Prevalence of Cardiac arrhythmias in patients attending cardiac clinic at KATH Kumasi
7. A study of the response of pre-ulcerative and early ulcerative lesions caused by *M. ulcerans* to 8 weeks treatment of daily combination of Streptomycin and Rifampicin or Clarithromycin and Rifampicin is being carried out in the Ahafo Ano North District. This is aimed at developing an oral regimen for treating Buruli ulcer
8. Association between serum uric acid levels and outcomes types and risk factors of stroke at KATH
9. Prevalence of diabetic nephropathy in patients attending the diabetic clinic at Komfo Anokye Teaching hospital, Kumasi, Ghana.

COMMUNITY SERVICE

The academic staff were responsible for specialist clinics in the Directorate of Medicine KATH. The clinics include:

- Oncology
- Haematology

- Renal/Hypertension
- Asthma
- Diabetes mellitus
- Cardiology
- HIV/AIDS
- Dermatology
- Hepatitis
- Gastrointestinal

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 ensure 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 OBSTETRICS AND GYNAECOLOGY

Research activities by members of staff

The research areas include:

- Hypertension in pregnancy
- Obstetric and gynaecological ultrasound
- Effects of malaria and helminthic co-infection on birth outcome
- Genital chlamydial and gonococcal infection
- Contraceptive use among high-risk women
- University students knowledge and practice of emergency contraception
- Broad ligament haematoma following snake bite
- Body mass index (BMI) and obstetric outcome

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) Post-graduate (MPhil) students in the Department. They are in their second year and will be completing the programme this year.

ON-GOING PROJECTS BY MEMBERS IN THE DEPARTMENT

- Modeling the Epidemiology Transition: Energy Expenditure, Obesity and Diabetes (METS). The project started in 2009 and will run for Three (3) years.
- A phase III, double blind (observer-blind), randomised, controlled multi-centre 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.
- Semen quality of male partners in infertile couples.
- Assessing the ovulatory causes of infertility among women visiting the infertility clinic at Komfo Anokye Teaching Hospital.
- Effect of HIV and Antiretroviral Therapy on semen quality.

- Workplace-based assessment as an educational tool at KNUST; the prevalence of clinical formative assessment and feedback

DEPARTMENT OF RADIOLOGY

INTRODUCTION

The Radiology Department of the School of Medical Sciences at the Komfo Anokye Teaching Hospital comprises the following units:

- CT scan
- X-ray
- Ultra Sound
- Mammography
- Fluoroscopy

DEPARTMENTAL AIMS/OBJECTIVES

The Radiology Department aims to act in accordance with the vision and mission of the School of Medical sciences by providing community services, consultancies, create collaborative links and attract scholars and students from the international community. The Department also seeks to develop very well to all international standards and be recognised as a premier centre of excellence in teaching, research, professional and academic training in Radiology and Radiography in Africa, producing high calibre radiologists, radiographers and other scientists to support the health sector in Ghana and the rest of Africa.

CHALLENGES

Setting up of Office

Right from the beginning of the academic year the challenge was to set up an Office for SMS Department of Radiology in the new office room graciously given by KATH in the new Accident and Emergency Block. With the support of the Dean and the School Secretary the office now has two (2) desktop computers and a small printer, a fast internet connection from Vodafone and a Secretary to help run the office.

DEPARTMENTAL MEETINGS

Quarterly meetings are being held in the Department together with the KATH staff to discuss issues concerning progress of the Department. Magnetic Resonance Imaging (MRI) will be a new unit in the Department which is still under construction. The Dean also met with the staff once to discuss issues on the progress of the Department especially on the appointment to full-time lectureship positions.

TEACHING

Ten radiographers so far have been nominated to the Dean to be considered for appointments as instructors/demonstrators to help in student teachings to overcome the difficulties of coping with the large number of clinical students' intake which cannot be handled by the 3 part-time lecturers currently at post.

STUDENTS LOGBOOKS

For students to take more seriously their studies in Radiology, it was discussed at one of our quarterly meetings that there should a log book for each student to enhance attendance and active participation in their studies, with cumulative marks of 30% for their overall assessment in the final MB ChB exams; this should be incorporated into final assessments of the students in final examination in Surgery. However, there is no active ways of checking students' works in radiology. Therefore most of them exhibit some lukewarm attitude towards the subject.

RESEARCH

The three part-time lecturers are preparing proposals on "*Radiological manifestations of chest infections*" which will start as soon as it is approved by the Ethical Committee.

COMMUNITY SERVICE/CONTRIBUTION TO SOCIETY

A female member of the part-time staff, Dr. (Mrs.) Augustina Badu Peprah, is actively involved with the Society of Ghana Medical Women and Dental Practitioners in screening women for breast and cervical cancers in Ghana.

LINKS/ INTERNATIONAL RELATIONS

The part-time lecturers do regularly participate in seminars on MRI at the Korle-Bu Teaching Hospital.

CONCLUSION

It is inappropriate that with several years of existence as a department in the University we still do not have a full-time radiologist in the Department. It is therefore suggested that it would be very much welcome if KNUST sponsored some of the residents in the Department to do their fellowships who would subsequently become full-time lecturers in radiology.

DEPARTMENT OF SURGERY

INTRODUCTION

The Department of Surgery, School of Medical Sciences, also referred to as the Directorate of Surgery of 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

DEPARTMENTAL AIMS/OBJECTIVES

The Department of Surgery has over the years aimed to:

- (a) 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.
- (b) 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.
- (c) 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.
- (d) Promote the conduct of research for improving the quality of teaching and service.

ACTIVITIES

Specialists in the Department:

- Organised 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.
- Organised a workshop in 2010 on wound management.
- Attended various conferences (both locally and internationally) to upgrade their knowledge and skills in surgery.

There were three visiting teams in 2010 - two from USA and one from UK who performed various open-heart surgeries on children and adults with participation of residents in the Department; another team from the USA performed breast surgeries on women.

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 post-graduate teaching has been intensified with the introduction of new concepts. All lecturers now use power point presentations. Handouts are made available to students.

The large increase in student numbers has necessitated a reorganisation of our teaching programme. The quality of teaching, 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 completing their various programmes this year. Dr. Owusu Danso will be a plastic surgeon and Dr. Lamina- a neurosurgeon. We await their arrival to strengthen the Department.

The locally trained residents continue to perform creditably in the exit examinations. Seven residents, under the tutelage of the consultants of the Department 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
- Parapneumonic effusions and empyemas in children.

COMMUNITY SERVICE/CONTRIBUTION TO SOCIETY

During the year under review the Department of Surgery continued to give high quality specialised services to the community. The Department organised 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 Pro-Vice-Chancellor of Kwame Nkrumah University of Science and Technology. 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. Prof. Abantanga went on an outreach medical service to the people of Bolgatanga, Bongo and Tongo in the year under review.

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.

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 Science
Department of Sonography

STAFF

Low staffing situation still remains the biggest challenge.

FACULTY BUILDINGS AND OFFICES

The faculty has just been handed keys to her new faculty offices building. The Faculty is currently housed in the School of Medical Sciences' building, and continues to share lecture rooms, laboratory and internet resources with the School of Medical Sciences which has been very supportive. We are grateful. Effort to get facilities like the internet connection as well as telephone is in earnest. The grounds as well as other facilities are near completion. We hope to start using the building before the end of the academic year.

MEDICAL LABORATORY TECHNOLOGY DEPARTMENT

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.

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 Sciences of the University of Ghana and the School of Biomedical Science of the University of Westminster, UK.

DEPARTMENT OF SONOGRAPHY

The Department of Sonography is one of the Departments under the Faculty of Allied Health Sciences. The BSc Sonography programme started 2008/2009 academic year.

PROPOSED PROGRAMME

The Department is feverishly working to add yet another new programme, namely BSc Radiography to the existing BSc Sonography programme. When completed both programmes will have a common stem in the first two years but each will branch off in the third year where the clinical programmes begin. The proposed programme is expected to reach the Academic Board for approval in the course of the second semester so that the programme can take off in the next academic year.

OFFICE SPACE

The Department is in the process of moving to her new office space in the New Faculty building. She had been given a room to set up a Sonography Laboratory for practical training of students. The Department is grateful to Dr. Mrs Badu-Peprah for her services to the department.

DEPARTMENT OF SPORTS AND EXERCISE SCIENCE

TEACHING

The Department of Sports and Exercise Science is in the Faculty of Allied Health Sciences. 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. 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.

INFRASTRUCTURAL DEVELOPMENT

The Department of Sports and Exercise Science, is still temporally located in the Anatomy Building of the Faculty of Medicine. Unfortunately, the planned relocation to the new Administrative Block has been delayed due to logistical constraints.

Student Numbers - Eighty-one (81)

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.

The Department also hopes to introduce a new course, BSc Physiotherapy in the foreseeable future. Planning of the course and its inputs are currently underway.

CAREER PROSPECTS

Sports and Exercise Science graduate 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.

RESEARCH INTERESTS

- Exercise Prescription for the Aging.
- Injury Rehabilitation Techniques.
- The Impact of Fitness and National Economy.

ON-GOING ACTIVITIES

- The Impact of Injury on the Academic Performance of Sportsmen and Women at KNUST.
- Students have been providing lectures on Proper and Improper Postures to area banks and the community.

DEPARTMENT OF NURSING

PROGRAMMES OFFERED

The Department offers programmes leading to Bachelor of Science in General Nursing, Emergency Nursing and a top-up programme for trainees from the Midwifery institutions, leading to a Diploma in Midwifery.

STUDENT NUMBER

The Department has a total of two hundred and twenty-one students (221), comprising those in the general nursing and the emergency nursing programme.

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. The course also prepares the students to identify pertinent health problems in health institutions and communities and to effectively design programmes to address them. The Department benefits immensely from the service courses in the basic sciences. The skills laboratory has been equipped with resources to provide pre-clinical teaching of nursing procedures and a new skills laboratory and library at the Komfo Anokye Teaching Hospital are being resourced for the Emergency Nursing programme.

RESEARCH IN THE DEPARTMENT

- A project on '**Assessing the feasibility of meeting the health needs of the aged through home nursing**' has been completed.
- The on-going research activity is on '**Violence in Nursing**'.

SERVICE TO THE COMMUNITY

Senior Members of the Department continue to offer services to the University in various capacities, serving on some college and faculty boards. They also serve as moderators for Nursing programmes in affiliated university colleges such as Central University College and Garden City University College. They provide technical support to the Ghana Health Service. A Senior Member serves as external examiner for the Narh-Bita School of Nursing, Tema.

LINKS WITH INSTITUTIONS OF HIGHER LEARNING

The Department continued its collaboration with the School of Nursing, Minnesota State University and the School of Nursing, University of Michigan, USA. It is also collaborating locally with universities that offer nursing through its membership of the Association of University Nursing Programmes (ASUNP). The Department is also collaborating with the Northumbria University and the Royal Victoria Hospital in the UK.

PARTICIPATION IN WORKSHOPS/CONFERENCES/SEMINARS

Staff participated in the following conferences/workshops:

- 3rd Scientific Conference of the College of Health Sciences, KNUST at the Anita Hotel in Ejisu.
- Development of BSc. Midwifery Curriculum
 - Stakeholders' Meeting – 11 August 2010
 - First Curriculum Workshop: September 2010
 - Second Curriculum workshop: 25 – 28 October 2010
- A three-day workshop as part of preparations for development of a Paediatric Nursing curriculum. This was organised by the Department and participants included nurses from the Komfo Anokye Teaching Hospital
- Launching of the Association of University Nursing Programmes at the University of Cape Coast.

EXCHANGE PROGRAMMES

In pursuit of the collaboration between KNUST and the School of Nursing, Minnesota State University, USA, nine (9) students and two lecturers came to Ghana for experiences in community health nursing. They had these experiences at the Juaben Government Hospital, Onwe Hospital, Suntreso Government Hospital and the University Hospital, KNUST.

DONATIONS/GRANTS

- The Department benefitted from donations of books and medical equipment and other teaching/learning materials from the School of Nursing, Minnesota State University, USA, Dr. Ann Pollin and Professor Kathleen Burke of the Ramapo College, New Jersey, USA.
- The Department received financial support from the United Nations Population Fund (UNFPA) for the development of a BSc. Midwifery curriculum.
- The Department is also collaborating with the Northumbria University and the Royal Victoria Hospital in the UK for the development of a Paediatric Nursing programme with financial support from DFID through the British Council.

NEW PROGRAMMES

- In collaboration with the Komfo Anokye Teaching Hospital, an Emergency Nursing programme was started and twenty-five students were admitted in the 2010/2011 academic year.
- The Department has proposed a BSc. Midwifery programme which will begin in the 2011/2012 academic year.

OTHER PROGRAMMES

Top-up for Diploma in Midwifery

In 2010, the University granted a request from the Ministry of Health for a top-up programme to be organised for midwives who trained in the Midwifery institutions to enable the University award them diplomas. The first batch of 136 students was trained in July – August 2010 and the second batch of 224 students had their training on 4th – 21st January 2011.

PROFESSIONAL LICENSING EXAMINATION

The Department registered thirty-eight (38) candidates for the professional nursing examination organised by the Nursing and Midwifery Council for Ghana. Thirty (30) of them were successful in all subjects.

DENTAL SCHOOL

INTRODUCTION

The Dental School which was established in 2006/2007 academic year runs a six-year programme to train human resources in Dentistry. The programme starts with a 3-year pre-clinical course which is

handled by the School of Medical Sciences on behalf of Dental School, followed by a 3-year clinical training which leads to the award of the Bachelor of Dental Surgery (BDS) degree. The Dental School has five (5) academic Departments.

- Adult Oral Health;
- Basic and Diagnostic Oral Health Science;
- Child Oral Health and Orthodontics;
- Community Dentistry; and
- Maxillofacial Sciences

CLINICAL/LABORATORY FACILITIES AT KATH

The refurbishment of the old administrative wing of the Komfo Anokye Teaching Hospital (KATH) for the clinical training of the dental students which began last academic year (2010/2011) has been completed. Facilities in the building include:

- a 20 - Seater lecture room;
- a library;
- 3 rooms for clinical care;
- a Central Supply and Sterilisation Department (CSSD)
- a laboratory; and
- 2 Offices
-

The pioneer class of eight (8) students has commenced their clinical training in the refurbished facility at KATH and hopefully in June/July 2012, the first batch of dental students from KNUST will write their final BDS Part II examinations.

PURCHASE AND INSTALLATION OF DENTAL EQUIPMENT

The College of Health Sciences with the assistance from the GETFund has procured additional 2 dental chairs, 2 tables with 4 phantom heads and some dental equipment for the School.

STUDENT POPULATION

To date, seventy (70) students have been enrolled and the details are as follows:

Academic Year	Year	Male	Female	Total
2006/2007	5	2	6	8
2007/2008	4	7	6	13
2008/2009	3	5	5	8
2009/2010	2	3	13	16
2010/2011	1	10	15	25
Total		25	45	70

COLLABORATION - UNIVERSITY OF MICHIGAN/KNUST DENTAL SCHOOL

- The School signed a memorandum of understanding with the University of Michigan School Of Dentistry, Ann Arbor, USA. Four (4) students from the pioneer class are expected to visit Michigan in September 2011 for their elective programme.
- The research project on “Applied Cariology” between the two (2) institutions was concluded in December, 2010. An abstract from the research was presented by Dr. Nejay Ananaba at IADR Conference held in San Diego, California in March, 2011

ACCREDITATION VISITS BY MEDICAL AND DENTAL COUNCIL (MDC) NATIONAL ACCREDITATION BOARD (NAB)

During the period under review, the (MDC) and the NAB visited the School to inspect the teaching and learning facilities. MDC has given approval for the training of dental surgeons. The School is yet to receive the report from the NAB.

FUTURE PLANS

- KNUST Hospital has been identified as an additional teaching site to cope with the increasing student intake. Architectural drawings on the proposed project are being done by the

Development Office of the University. The GETfund is providing financial assistance for the expansion of the Dental School;

- The School has plans to develop a diploma programme for middle level oral health care providers; and
- Intensify staff recruitment and also encourage dental postgraduates to take up teaching appointments in the school.

ACKNOWLEDGEMENT

The Dental School wishes to express its appreciation:

- To the College of Health Sciences for sponsoring the trip to Nigeria;
- To the Departments of Surgery, Medicine, OBGYN and Child Health for teaching our clinical Year I & II students;
- To SMS for their assistance in teaching the basic sciences programme; and
- Finally, to the University for signing the MOU with University of Michigan School of Dentistry.

CONCLUSION

The KNUST Dental School is in its 5th year. Though there are challenges in attracting both professional and technical staff, the school is making maximum use of the current resources at its disposal. Indeed, the future of the Dental School is bright and it is hoped that the University and other stakeholders will continue to nurture the dream of the founding fathers.

SCHOOL OF VETERINARY MEDICINE

INTRODUCTION

The School of Veterinary Medicine (SVM) established in 2009 as an integral School of the College of Health Sciences is mandated to run a six-year Doctor of Veterinary Medicine (DVM) programme. The School is in close collaboration with other Colleges of the University, essentially College of Agriculture and Natural Resources, and College of Science.

Veterinary Doctors address a number of issues in order to keep animals and humans healthy and contribute to the economic well-being of nations. Some of the issues that the Veterinary Doctor addresses include: animal health and welfare; food for humans; public health; livestock industry; international trade in animals and animal products; research etc.

Human health is protected in many ways including protection from diseases of animal origin (zoonosis). Many people needlessly suffer or die from diseases which they acquire from animals (e.g. rabies, anthrax, tuberculosis, brucellosis, bird flu, Ebola disease etc.). By keeping animals healthy and preventing them from becoming sick, man derives a large bonus of socio-economic benefits such as provision of food for humans, employment in the livestock related industries, companionship etc.

Ghana is currently facing a severe shortage of Veterinarians needed to adequately monitor, prevent and control infectious diseases of public health and economic importance. So severe is the shortage that the Government was compelled to re-engage Veterinarians who retired from active civil service.

Recognising the crucial role of veterinary medicine in the socio-economic development of any nation and need to address the severe shortage of Veterinary Doctors in the country, the School of Veterinary Medicine has been established to produce qualified Veterinary Doctors locally to alleviate the shortage.

ACCREDITATION

The National Accreditation Board has granted five (5) years accreditation for the running of the Doctor of Veterinary Medicine programme with effect from January 1, 2011.

LIST OF PROPOSED ACADEMIC DEPARTMENTS

- Veterinary Anatomy and Physiology
- Veterinary Pathobiology
- Veterinary Pharmacology and Toxicology
- Veterinary Public Health, Food Hygiene and Food Safety
- Veterinary Clinical Studies

ENROLMENT

The School is in its second year of existence. Student enrolment is shown in the table below.

ACADEMIC YEAR	FEMALE	MALE	TOTAL
2009/2010	4	9	13
2010/2011	3	8	11
TOTAL	7	17	24

DONATIONS

In response to a request for assistance, Commonwealth Veterinary Association donated thirty (30) veterinary books to the school this year. This is the second time such book donation has been made by the Commonwealth Veterinary Association.

Dr. Andy Quarcoopome, a private veterinary practitioner of Tema Animal Hospital donated one (1) LCD projector to the school and a cash of \$1000 (one thousand US dollars) specifically to purchase veterinary text books for the school.

PREPARATION FOR CLINICAL TRAINING

In the absence of Veterinary Teaching Hospital on campus, the College has identified off-campus government and private veterinary clinics for students training. Renovation work has started on the government veterinary clinic at Amakom to accommodate clinical students. Provision has been made for one teaching classroom which will also serve as conference room for discussion of clinical cases.

INTERNATIONAL CONFERENCE

Senior Members attended and actively participated in the 5th Pan-Commonwealth Veterinary Conference held in Accra from 21st to 25th March 2011. Second year DVM students were given the opportunity to attend the opening ceremony held on the 21st March and they interacted with veterinarians from different countries.

INTERNATIONAL VISITORS

A-three member team was received from Tuskegee University, College of Veterinary Medicine, Nursing and Allied Health to assess the needs of KNUST School of Veterinary Medicine and University of Ghana School of Veterinary Medicine for support to ensure that their DVM programmes meet the required international standards.

CHALLENGES

The challenges as expected of a new school are many, however, only few are listed below.

1. Lecturers: Difficulty in attracting specialists to teach clinical students. Advert has been posted in Commonwealth Veterinary Journal announcing vacancies for lecturers in Surgery, Pathology, Clinical Pathology, Medicine, Radiology and Theriogenology.
2. Mobility of Clinical Students: Students in the clinical years will require a lot of movement to off-campus facilities like the abattoir and the clinics. This requires a school bus. Ministry of Food and Agriculture has promised to purchase a bus for the school. Follow-ups so far have not yielded the required response yet.
3. Veterinary Technicians: Low salary levels attached to technician grades in the University is making it increasingly difficult to lobby veterinary technicians to accept appointment.

KUMASI CENTRE FOR COLLABORATIVE RESEARCH (KCCR)

INTRODUCTION

Since its establishment over the last 13 years, the Kumasi Centre for Collaborative Research in Tropical Medicine (KCCR) continues to act 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 few 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.

Currently as part of its mandate, the KCCR is conducting several 'summer schools' this year. Of particular mention is the Volkswagen young scholar training award scheme, which took place in March this year. Additionally, KCCR is partnering with the American Society for Cell Biology in organising a course in the teaching of cell biology from the 5-16 July, 2011. The first certificate course in tropical medicine is scheduled to be held in September to October this year.

CORE STAFF

Mr Thomas van Kampen	Director
Dr. Ellis Owusu-Dabo	Deputy Director
Mr. Andy Mensah-Agboh	Administrator
Ms. Kerstin Shand	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 of any person living with HIV/AIDS.

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 optimised 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.

BAT – Virus biology, host ecology and human behavior 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.

BTI.BS – This study aims at curbing malaria by targeting the larvae, using biological agents.

Buruli ulcer – 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.

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 characterised 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.

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.

DFG Genetics – Title: ‘Genetics of Lymphoedema and Hydrocele in Filariasis. The aim of this study was to analyse 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.

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.

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 analysing pro- and anti-inflammatory cytokine, VEGF and VEGF receptor polymorphisms as possible causes of the different disease manifestations in patients with LF.

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.

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 previous study began in 2001 and ended in 2006.

Tuberculosis (TB 6) – 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.

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 which is essential for an improvement of lymphedema and hydrocele patients.

UP-COMING PROJECTS

Bat-born lyssaviruses as neglected causes of viral encephalitis in Africa and Brazil. The aim of this study is to determine virus diversity, point prevalences and seasonal/physiological variations of bat borne lyssaviruses in Africa, using human and livestock models through serological means.

FUTURE OUT-LOOK

1. Further PhD/MSc training/capacity development in core disciplines to enhance future performance. Three (3) registered PhD and five (5) Mastersstudents are currently pursuing their various programmes and in different disciplines.
2. Implement action on KCCR strategic plan for the coming years.
3. Further continue training and collaborative research in tropical non-communicable diseases in Ghana and beyond. Future studies will look at type 2 diabetes mellitus (T2DM), hypertension and maternal health related health conditions
4. Further institutional collaborative research with sister institutions from not only Africa, but Europe and America.

COLLEGE OF SCIENCE

INTRODUCTION

The College of Science was established in 2004, with the inception of the collegiate system, as a successor to the Faculty of Science originally set up in 1961. The College consists of the following Departments, and Research Centres:

- Department of Biochemistry and Biotechnology
- Department of Chemistry
- Department of Computer Science
- Department of Mathematics
- Department of Optometry and Visual Science
- Department of Physics
- Department of Theoretical and Applied Biology

The Institute of Science and Technology for Africa and the Advanced Centre for Mathematical Sciences are the research wings of the College.

A total of eleven undergraduate programmes and several graduate programmes, are offered in the College.

The College has a student population of approximately 3,643. This number is made up of 3,352 undergraduate students with the remaining as post-graduates. The staff strength, comprising teaching and administrative staff, stands at 238.

COLLEGE ADMINISTRATION

The College administration is made up of the following officers:

Prof. R.K. Nkum	Provost
Mrs. Margaret Dzisi	Ag. College Registrar
Mr. Gabriel Sam Arhinful	Finance Officer
Mrs. Hagar Atta Obeng	Librarian
Mrs. Ida Saeed	Assistant Registrar

During the year under review the College continued its pursuit of programmes and activities geared towards the realisation of its vision of producing high calibre science graduates to support the industrial and socio-economic development of Ghana and Africa.

RELOCATION INTO NEW COLLEGE OF SCIENCE COMPLEX BUILDING

The College of Science Complex Building was finally completed and commissioned on June 28 2010 by Asantehene's representative, Akyeampehene Oheneba Adusei Poku. The Provost's Office and all other departments in the College, except for the Departments of Physics, Chemistry and Theoretical & Applied Biology have since relocated into the new premises.

COLLABORATION

Over the year, a Memorandum of Understanding was signed between the Department of Food Science and Technology, College of Science and Maslenad Limited (MSL) Kumasi. This MOU is to establish a working relationship between the two partners, to elevate a conservative agriculture sector into an innovation driven sector, based on research and development. Under the agreement, the Department of Food Science and Technology will have access to industry as well as support from the industry to develop laboratory to pilot activities to attain a focused set of goals.

Collaboration will be in the following fields of interest:

- Quality Assurance
- Food products and processes developments
- Specialised MSL staff training
- Student Internship
- Laboratory services

- Spin-offs of products, processes or technology

NEW ACADEMIC PROGRAMMES

In response to growing societal demands and global trends, a number of new academic programmes have been designed within the course of the year and hopefully will begin to run soon, either by regular mode or distance learning. These include:

BSc Information Technology

BSc Information and Communication Technology

BSc Statistics

MPhil Human Nutrition and Dietetics

STAFF RECRUITMENT AND DEVELOPMENT

Even though on a lower scale than anticipated, the College continued its efforts at recruitment and staff training and development. There were three teaching staff appointments and five promotions during the period under review. In the direction of professional development, the College sponsored one of its Senior Administrative Members to attend a training programme in “Effective Leadership and Management Administration”. A two-day training workshop to enhance records management in the College, was also organised for administrative support staff.

DEPARTMENT OF BIOCHEMISTRY AND BIOTECHNOLOGY

The activities of the Department of Biochemistry and Biotechnology during the year under review are detailed in the report below.

INTRODUCTION

The Department continued to pursue its research, teaching and service to community agenda with commitment and excellence. This is in recognition of the role Biochemistry and Biotechnology play in contributing to both basic and applied research in health, agriculture, energy and environment. The Department offers both undergraduate and postgraduate programmes.

STUDENTS

There are currently 313 students enrolled in the Department.

BSc Biochemistry	301
MSc Biotechnology	12
MPhil Biochemistry	3
PhD (Biochemistry)	2

FACULTY

The Department’s current faculty strength stands at thirty four (23), comprising one Full Professor, one Associate Professor, five Senior Lecturers, five Lecturers, one Technical Instructor, four Senior Staff, and seven Junior Staff. In addition, there are ten National Service Personnel and one Voluntary Service Personnel who is an international student.

GRADUATE STUDIES

The Department offers quality research and teaching at the graduate level. Currently, a two-year M.Phil in Biochemistry by research and a two-year M.Sc programme in Biotechnology are available as well as a three-year PhD programme in Biochemistry by research with selected taught courses are offered. The graduate studies are intended to give top-notch scientific and research training to successful candidates to meet the needs of the nation’s industrial development agenda.

Graduation/Oral Examination

Two MSc Biotechnology students graduated and one M.Phil Biochemistry student defended his thesis in the year under review.

Grants

Lawrence Owusu, a PhD candidate and Stephen Kusi, an MSc candidate have received support from Deutscher Akademischer Austausch Dienst (DAAD) German Academic Exchange Service; and International Society for Infectious Diseases (ISID) respectively towards their research project.

Awards

- Mr. Saviour James Badohu, an undergraduate student in the Department received an award as the best in oral presentation in Health Product Research and Development Category at the 3rd Stakeholders Meeting of the African Network for Drugs and Diagnostics Innovation (ANDI) held in Nairobi, Kenya on the 11th – 23rd October 2010).
- The Department's Award Ceremony for the 2009/2010 academic year was held in the period under review, Miss Gloria Delali Akuyoo Ecklu won Prof. Samuel Evans Adunya and Mrs. Patricia A. Boykin-Adunyah's Academic Excellence Award; and Mr. Alex Adusei Agyemang received Prof. (Mrs.) Victoria Pearl Dzogbefia's Best Final Year 'Enzymology' Student Award.

REVIEW OF SYLLABI AND ESTABLISHMENT OF NEW PROGRAMMES

The Department has taken the decision to run two Bachelor of Science programmes, Clinical Biochemistry, and Molecular and Cell Biology. Syllabi for the programmes will soon be sent to the Quality Control unit for their evaluation. In addition, the Department has just been given approval by the National Council for Tertiary Education to run an MPhil programme in Human Nutrition and Dietetics, while an MPhil and MSc in Forensic Science are under consideration. These decisions are in line with the University's policy to review programmes periodically in order to ensure that those offered fit the developmental agenda of the country.

RESEARCH

The Faculty and Students in the Department continue to do active research in various areas of endeavours. This has resulted in eleven (11) each of Publications and Conference Presentation in both national and international journals/proceedings.

RELOCATION

The Department has moved its offices and classrooms to the new College of Science Building Complex.

DONATIONS

- The Kwame Nkrumah University of Science and Technology chapter of the Ghana Biochemistry Students' Association donated a brand new LCD projector and a photocopier valued at GH¢3800.00 to the Department.
- Three alumni and one postgraduate student of the Department donated an HP LaserJet P2035 Printer worth six hundred and thirty Ghana cedis (GH¢630.00) to the Department
- Dr. Joslin Dogbe donated a book titled 'Salt Diet & Health' to the Department for the Human Nutrition and Dietetics Programme.
- The Department's National Service Personnel for 2009/2010 service year donated some items to support work in the Laboratory.

TRAINING PROGRAMME

The Kirkhouse Foundation, in collaboration with Cocoa Research Institute Ghana (CRIG), organised practical training programme in molecular biology for the first year MSc Biotechnology students and the final year undergraduate students.

SERVICE TO COMMUNITY

Staff and students have been continually involved in outreach programmes. Members continue to serve on several committees within and outside the University. They serve as external examiners, external assessor for other sister Universities' promotions and reviewer(s) for reputable journals. Ghana Biochemistry Students' Association, as part of its annual week celebrations organised a science outreach programme for some selected Senior High Schools in the Kumasi metropolis. Issues on current trends in science and the relevance of Biochemistry in today's scientific industrialisation were shared with the students.

INCOME GENERATION

The Clinical Analysis Laboratory continues to receive wide patronage from the University community and beyond. Its income level has increased significantly and plans are well advanced to acquire an automatic chemistry analyser and ELISA reader to broaden the range of tests that can be performed.

CHALLENGES

The Department is still faced with the challenges of attracting quality Technical Staff to carry out its research work and training of students. The undergraduate laboratory also lacks equipment and the maintenance of the available apparatus is another major challenge.

CONCLUSION

In spite of these challenges the Department still carries out its research, teaching and service to community with dedication.

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 2010/2011 academic year there were 630 students in the Department:

BSc	-	558
MSc	-	49
MPhil	-	16
PhD	-	<u>7</u>
		630
		===

The number of academic staff currently at post is 22:

Professors	-	Nil
Assoc. Professors	-	3
Senior Lecturers	-	4
Lecturers	-	13
Technical Instructor	-	1

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

The Department has mounted its MSc Environmental Science programme on the distance learning mode. It has been well patronised so far. The Department is in the process of mounting two top-up programmes, BSc Environmental Sanitation and Health, and BSc Biological Sciences on the distance learning mode. New courses have been introduced as part of a general review of courses and programme structure in line with changes in the job market. These include Microbial Ecology, Genetic Engineering, Ecosystem Analysis, Biodiversity Conservation and Utilisation, 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 Natural 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
- The 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 minimising 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 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.

EU Funded Project/NETSSAF

Prof. R.C. Abaidoo and Prof. 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 Programme of the European Community. The aim is the preparation of the technical and organisational 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 Prof. K. Obiri-Danso in the laboratories of the Department of Theoretical and Applied 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. Furthermore, academic members of the Department serve as reviewers for both local and international peer reviewed journals.

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 organised 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 B.Sc. degree programme to make the B.Sc. 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

- a) 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.
- b) 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.
- c) 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 M. Sc. Environmental Science programme with a donation of computers and accessories and books.

PROBLEMS

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 CHEMISTRY

INTRODUCTION

The Department of Chemistry at KNUST is one of the leading stand alone Chemistry Departments in Ghana. It offers a four-year BSc degree programme in chemistry. In addition, there are MSc/MPhil and PhD programmes. Currently, the student population stands at 442 students: 397 undergraduates, 38 MSc/MPhil. and 7 PhD students. 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. During the year under review, the washing up soap used in the Department was produced by the Department.

STAFFING

Academic Staff strength at the Department currently stands at twenty. Out of these, one is a visiting professor who came in to support a new MPhil programme in polymer science and technology (vide infra), two are on post-retirement contract, a third one is on part-time and four 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.

MODELING LABORATORY

Dr Evans Adei, a computational/physical chemist of the Department has established a state of the art 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, some reaction mechanisms can be carried out using the quantum mechanical approach.

RESEARCH AND GRADUATE TRAINING

Members of staff in the Department are actively engaged in research in different areas of chemistry. These include computational chemistry, polymer chemistry, catalysis, biofuel development, organo-metallic and bio-inorganic chemistry, natural products chemistry, pesticide chemistry, environmental chemistry, monitoring of heavy metals in the environment, green chemistry, etc. Since the beginning of the 2010/2011 academic year, some members of staff have been invited to make presentations at some international conferences/workshops. Dr J.A.M. Awudza and Dr. S. Osafo Acquah participated in the 1st Green Chemistry Congress organised by the Pan African Chemistry Network (PACN) in Ethiopia from 15 to 17 November 2010. They both made oral presentations at the congress. Dr. J.A.M.

Awudza (as team leader), Mr N.K. Asare-Donkor and Mr. F.K. Ampong (of Physics Department, KNUST) attended the first Leverhulme – Royal Society Africa Award Holder Meeting which was organised by the Royal Society (UK) and the Tanzanian Academy of Sciences in Dar es Salaam, Tanzania from 5 to 6 December 2010. Dr. J.A.M. Awudza and Dr. S. Osafo Acquah participated in the 40th South African Chemical Institute's national conference and the 3rd meeting of the Federation of African Chemical Societies, which was a prelude to the International Year of Chemistry, in Johannesburg, South Africa, from 16 to 21 January 2011.

The Department is making a steady progress in the training of postgraduate students. Dr. Richard Tia (who studied under the VC's initiative and was supervised by Dr. Evans Adei) successfully defended his thesis in October 2010 and received his PhD in November 2010. He has also successfully gone through an interview for appointment as a lecturer in this Department and so could soon join the staff. Mrs. Trinity Ama Tagbor (of the Building and Road Research Institute and supervised by Dr. S.K. Twumasi of the Chemistry Department) has also successfully defended her PhD thesis and will soon be awarded with the PhD in chemistry. At least ten MSc students also defended their theses within the year. One PhD candidate and a number of MSc candidates have submitted their theses and are awaiting their viva voce.

RESEARCH FUNDS

Dr J. A. M. Awudza currently holds two research funds. The first is a highly competitive Development Partnership in Higher Education (DELPHE) Fund (see below) which is being used to support the establishment of an MPhil programme in polymer science and technology in the Department. This is worth £55,000.00 and is for a three-year period (2009 to 2014). The second is a fund from the prestigious Leverhulme – Royal Society Africa Award Scheme for a research project entitled “Developing Internationally Competitive Research on Solar Cell Materials at KNUST”. The value of this fund is £150,000.00 and it is to be used over a three-year period (2010 to 2013). The project has already started. The two projects are being implemented in collaboration with the School of Chemistry of the University of Manchester, UK. Dr Evans Adei has also been awarded a fund under the Leverhulme – Royal Society Africa Award Scheme for a research on “Molecular Modeling for Energy Efficiency” and this is also worth £150,000.00. It is to be spread over three years (2011 to 2014). This is to be implemented with Prof. Nora de Leeuw of the University College, London. We congratulate Dr Adei and his team for winning this prestigious award.

COLLABORATIONS

The Department of Chemistry has a collaborative arrangement with the School of Chemistry, University of Manchester, UK. We are very grateful to Prof. Paul O'Brien and his team in Manchester for their support.

An MPhil programme in polymer science and technology was initiated at the Chemistry Department (in August 2010) through this collaboration. In this regard, some members of staff from the University of Manchester visited Kumasi to teach some modules of the course in the first semester of the academic year. Another person will be visiting the Department to teach the students in the latter part of May. 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 of International Development and administered by the British Council. The Chemistry Department was one of the only two departments that received a DELPHE funding in 2009. The funding will end in 2012.

As part of the capacity building of staff involved in the MPhil programme in polymer science and technology, four faculty members from the Chemistry Department: Dr. J.A.M. Awudza (Project leader), Prof. Nana Berko-Boateng, Dr. S. K. Twumasi and Mrs. Mercy Badu, travelled to Manchester in March 2011 to interact with the team at the University of Manchester which is involved in the teaching of some of the course modules and to develop some course materials. An important outcome of the visit is the donation of some equipment by the University of Manchester to the Chemistry Department at KNUST for the running of the MPhil programme. We thank Prof. Peter Budd, Prof. Stephen Yeates and Dr. Arthur Wilkinson for making the arrangement for the donation.

Last year, Dr. Alejandra Palermo, manager of the Royal Society of Chemistry's international programmes and the Pan African Chemistry Network indicated that she was making an arrangement for the donation of some equipment to the Chemistry Department. We are in touch with the organisation which is making the donation and we should receive a liquid chromatograph-mass spectrometer and a uv-visible spectrophotometer by the end of July.

A memorandum of understanding has been signed between the Laboratory of Toxicology, Graduate School of Veterinary Medicine, Hokkaido University and the College of Science to facilitate a collaborative arrangement between the Chemistry Department and the Laboratory of Toxicology. Mr. Osei Akoto, who is in charge of this collaboration, and two of his MSc students have each spent two months at that laboratory to carry out part of their research.

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. One of our students was in Germany within the academic year on the IAESTE programme to gain some practical experience in a German institution. He used the period to carry out his final year research using state of the art equipment. The Department hosted one German student and an Indian student during the year and is expecting one German student in the next academic year on the IAESTE programme. IAESTE has recognised the contribution of the Department for this programme and has awarded her with a certificate.

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 have been installed in the Department as part of the College's centralised 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 Government appointed Chairman of the Council of Ho Polytechnic. He also serves in the following capacities:

- (i) Campus coordinator for TALIF.
- (ii) KNUST representative on the Governing Board of the West African Examinations Council.
- (iii) 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 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:

- (i) Member of the International Scientific Committee for the forthcoming International Congress on Agricultural Productivity being organised by the Pan African Chemistry Network with support from the Royal Society of Chemistry (UK) and Syngenta (UK). The Congress will take place from 21 to 23 November, 2011 at Accra International Conference Centre and it is part of the activities marking the International Year of Chemistry.

- (ii) Serves as a resource person for ICS-UNIDO on next generation biofuels development in Ghana and the West African Sub-region.
- (iii) Fellow of the Energy Centre, College of Engineering, KNUST, and member of the Management Board of the Centre. In that capacity, he supports biofuels-based industries in Ghana.
- (iv) Chairman of the Safety Committee of KNUST.
- (v) Member, Board of Trustees, Centre for the Development of People, a national non-governmental organisation.
- (vi) Representative of the Royal Society of Chemistry in Ghana.

Dr. S. Osafo Acquaaah is the President of the Ghana Chemical Society. He also serves in the following capacities:

- (i) Member of the International Scientific Committee for the forthcoming International Congress on Agricultural Productivity being organised by the Pan African Chemistry Network with support from the Royal Society of Chemistry (UK) and Syngenta (UK).
- (ii) Member of the University Centre for HIV/AIDS studies.
- (iii) Reviewer for the GJGS

Mr. N.K. Asare-Donkor is the Vice President of the Ghana Chemical Society and a resource person for the WAEC.

Mr. G.K. Tuani serves as resource person for WAEC.

Mr. E. E. Kwaansa-Ansah is a chief examiner for WAEC.

Mr. Apau is a 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 Ltd and individuals.

PROJECTIONS

New programmes under consideration include;

- Cosmetic Science (Cosmetology)
- Forensic Science / Chemistry and Toxicology
- Pesticide Chemistry
- Medicinal Chemistry
- Glass Technology / Chemistry
- Hydrocarbon and Petroleum Chemistry
- Chemistry and Enterprise

The Department is in the process of reviewing its programmes at both the undergraduate and postgraduate levels.

DEPARTMENT OF FOOD SCIENCE AND TECHNOLOGY

The Department seeks to train professionals that deals with the scientific and technological aspects of foods and related products. Graduates of the Department are concerned with determining the chemical, biological, and physical nature of food in terms of quality, safety and nutrition. They also apply science and engineering to the processing, storage, use of food and food-related products. Training offered by the Department is truly interdisciplinary in order to provide nutritious, safe, and wholesome food supply to the nation and the world. Students are also trained in critical thinking using problem-based learning approaches. The relatively small population within the Department enables teaching, non teaching staff and students to have close contact in an intellectually stimulating

and professional environment. The Department will, this year, be graduating the fourth batch of undergraduates since its establishment in 2004.

FACULTY

The teaching staff strength are given below:

Professor	-	1
Associate Professor	-	2
Lecturers	-	7
Technical staff	-	1

ENROLLMENT

Five (5) MSc students graduated in November, 2010 while three (3) others have successfully defended their thesis and are to graduate in June, 2011. The current student population is given below:

BSc - 98

MSc - 30

MPhil - 5

PhD - 3

RESEARCH ACTIVITIES

The staff of the Department continues to do active research in various areas of endeavors. The current major research areas include

- Product development and nutritional content of some indigenous leafy vegetables and tropical fruits.
- Product diversification of staple and perishable crops such as sweet potato, cassava etc.
- Characterisation of water yam (*Dioscorea alata*) for existing and potential food products.
- Fat replacement using pulp soursop.
- Performance of fat in food beyond normal frying (incorporating additives that can prevent acrylamide formation in oil).
- The extraction and characterisation of oil from *Allanblackia* seeds.
- Assessing the antioxidant activity of Baobab fruit pulp and fumicle powder in oil.
- The effects of different fertilizer protocols on the yield and quality of cassava starch.
- Production of table wine from leaves of sorghum bicolor and calyces of *Hibiscus sabdariffa*.
- Resistant starch level and proximate composition of local plantain varieties.
- Amino acid and fatty acid profiling of some cereals and legumes grown in Ghana.
- Nutritional database for traditional foods.
- Design and manufacture of Solar-Adsorption Drying System (SADS) to dry agricultural products such as yam chips and tubers continuously for 24 hours.
- The use of biocatalyst and fermentation processes in the bioconversion of agro-industrial residues into useful feed for poultry or as media for growth of mushrooms.
- Improving the feed value of cocoa pods husks for broilers, growth and bioconversion ability of oyster mushroom (*Pleurotus ostreatus*) on different agro-wastes

COLLABORATION

The Department continues to collaborate with other institutions and food processing companies to transform a conservative agriculture sector into an innovation driven sector based on research and development. This is to ensure sustainability of the industry as well as the University's effort to train its students focusing on practical hands on experiences. Collaborating with Food Research Institute – CSIR is in force and also MOUs have been signed with Premium Foods Limited and Maslenad Ltd in Kumasi.

CONTRIBUTIONS

Premium Foods Limited contributed cash for the repairs of the extruder in the Department. The Association of Food Science and Technology Students' of the Department (AFSTS) also contributed an AKAI double deck fridge to the Sensory Laboratory. National Service Personnel who served in the

Department in the 2009/2010 academic year also made a presentation to the Department to support laboratory work.

SEMINARS AND WORKSHOPS

The staff and students actively participated in professional conferences, seminars, and workshops. Participation in these activities broadens the student's outlook of the programme and enhances staff performance in teaching and research. The Department was represented in seminars organised by Food and Agriculture Organisation (FAO) and the World Health Organisation. Others seminars include forum on Food Safety organised by the Ministry of Food and Agriculture in collaboration with FAO and other stakeholders such as the Food and Drugs Board etc and the 19th Session of the FAO/WHO Coordinating Committee for Africa (CCAFRICA) which focused on Codex issues in the sub-region. The Food and Drugs Board gave a presentation on Ghana's regulatory policies on Genetically Modified Foods (GMO) upon the request of the Department. Premium Food Limited also delivered a seminar on setting up a food industry business. Staff and students also attended the Annual General Meeting of the Ghana Nutrition Association held at the Noguchi Memorial Institute For Medical Research, Legon, on the theme "Advancing the National Development Agenda: The Role of the Nutritionist".

PUBLICATIONS AND PRESENTATION AT CONFERENCES, WORKSHOPS AND SEMINARS

The staff and students of the Department continues to conduct active research which has resulted in fourteen (14) scientific papers in peer-reviewed journals and four (4) conference presentations. Details have been captured in the Quality Assurance Report 2011.

CHALLENGES

The Department is still faced with the challenge of attracting quality Technical staff to carry out its research work and training of students. Inadequate equipment and maintenance of existing ones are another major challenge for the Department.

CONCLUSION

In spite of the challenges, the Department still carries out its research, teaching and services to the community with enthusiasm. The Department expects to introduce the following new programmes by distance learning. They are Diploma in Food Science and Technology, MSc Food Quality Management (12 -15 months), MSc Food Science and Management (12 -15 months).

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 840 undergraduate students in the Department with over 480 pursuing the BSc in Mathematics and 360 the BSc in Actuarial Science. In addition to this, there are over 200 graduate students pursuing programmes in both Mathematics and Industrial Mathematics.

In the 2011/2012 academic year, new programmes in Statistics at the BSc and MPhil levels will be introduced. Other programmes envisaged for the near future include Masters and PhD in

Biostatistics, Actuarial Science and Financial Mathematics to be delivered both in the distance and regular modes.

This year (June 2011), over 130 students will graduate with the BSc Honours degree in Mathematics, over 84 students will graduate with the BSc Honours degree in Actuarial Science and over 10 will graduate with Masters Degrees in Mathematics and Industrial Mathematics with 5 of them being distance learners.

ACADEMIC STAFF

With a highly qualified and experienced academic staff, the Department boasts of staff strength of 27 (of which two are women) with three currently on study leave pursuing doctoral programmes. Twelve (12) senior members hold PhDs. One senior member is of Professorial rank and five are of the senior lecturer rank.

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. International collaboration include active research and exchange links with Eastern Connecticut State University, USA, Stellenbosch University, South Africa, North Carolina State University, and Leicester University, UK .

RESEARCH

Research interests of academic staff currently include Algebra, Complex Analysis, Functional Analysis, Topological Dynamics, Numerical Analysis, Heuristics, Mathematical Physics, Optimization and Control Theory as well as Mathematical Modeling 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 realising 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.

NEW ACADEMIC 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:

- i. High quality fundamental physical sciences
- ii. Up-to-date current meteorological knowledge and skills including forecasting, experimental, theoretical and research techniques
- iii. Expert knowledge in the physical climatic processes of tropical Africa
- iv. 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) with specialisation in
 - Oil and Gas Exploration
 - Groundwater and Mineral Exploration
 - Environmental 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 eighteen (18) as follows:

Professors	-	3
Associate Professors	-	1
Senior Lecturers	-	4
Lecturers	-	10

The Department also has twelve (12) non-teaching staff.

STUDENT NUMBERS FOR 2011/2011 ACADEMIC YEAR

The total student number is 460

BSc (Physics)

First Year	-	116
Second Year	-	100
Third Year	-	85
Fourth Year	-	71
Total =		372

BSc (Meteorology and Climate Science)

First year	-	30
Second Year	-	14
Third Year	-	12
Fourth Year	-	9
Total =		65

Post-graduate Students

MSc/MPhil	-	23
PhD	-	5 (Staff)

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.

Post-graduate Programme

The Department also offers a post-graduate 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

i. 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).

ii. 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

iii. The use of petrophysics, core analysis, logging and computation of synthetic seismograms to assess the hydrocarbon potential of the Tano Basin

- iv. Applications of geophysics in mineral and groundwater exploration
- v. Solutions to geophysical inverse problems

Solid State Physics

- i. Semiconductor materials and their applications in photovoltaics

Materials Science

- i. Microstructural characterization of metals and alloys

Environmental Physics

- i. 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

- i. Trends in precipitation and temperature in climate change over sub-saharan Africa. A case study of Ghana
- ii. Retrieval studies of atmospheric compositions (trace gases and aerosol particles)
i.e. remote sensing of trace gases
- iii. Impact of night time NO_x (NO₂ and NO₃) on ozone depletion and total global ozone budget, diurnal variability of NO_x
- iv. Measurement and monitoring of meteorological parameters (rainfall, relative humidity, minimum and maximum temperature, heat flux, etc.) for long term trend analysis.
- v. Impact of human activities on the biogeochemical cycle
- vi. 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.
- vii. 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 26,400.00** for the Meteorology and Climate Science programme. The donation forms part of the research collaboration between the University of Cologne 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.

Last year, the German partners from the University of Cologne donated some equipment worth about **Euro 30,000** to the Department of Physics for the Meteorology and Climate Science programme.

The 2nd Ewiem Nimdie International Summer School in Meteorology and Climate Science 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., organised 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 organisation of the first summer school in 2008, this summer school aimed 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 was open to scientists, young researchers and PhD students working in areas of Atmospheric Physics, Meteorology, Climatology, Agricultural and Environmental Sciences. Information on the Summer School can be obtained at the website or web link: <http://www.ewiem-nimdie.org/>

INSTITUTE OF DISTANCE LEARNING

ADVENT OF DISTANCE LEARNING

The Institute of Distance Learning (IDL) was established to back the University's Strategic Plan, PLAN 2K14, which aims at enrolling fifty thousand (50,000) students by the year 2015. As part of that plan, the Institute was to absorb about 40 – 50% of the projected 50,000 students through the Distance Learning mode.

The Aims of the Institute, among others, is to provide greater access to different categories of people who desire to have University education, but otherwise are unable to gain access through the regular mode.

It is also to serve as a viable complement to the conventional lecture room session conducted within the confines of the walls of KNUST. In this regard, IDL is expected to take the quality and demand-driven education and training provided by KNUST to the doorsteps of students throughout Ghana and beyond the shores of Ghana. All these are captured in the Vision of IDL as: *"Increasing access to relevant and flexible tertiary and continuing education and training anytime, anywhere through the Distance Learning Mode using multimedia."*

With this colossal, but defined vision in mind, The Institute of Distance Learning was established as the Faculty of Distance Learning (FDL) in 2005, under the then College of Science to deliver both on-going and new programmes of study from all colleges of the University in the distance learning mode. In 2007, the FDL was detached from the College of Science and the Institute of Distance Learning came to being, with much more leverage and partial autonomy.

In line with its vision, the Institute has adopted measures within the last six years aimed at increasing its area of operation, programmes and courses on offer and its student population. The effort has since yielded some positive results as shown 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). Administrative approval has also been granted to bring the E- Learning Unit of KNUST under the Institute.

Deanship and Headship Positions

The following persons held administrative positions in the Institute during the year under review.

- | | | |
|----------------------|---|--|
| 1. Prof. I.K. Dontwi | - | Dean |
| 2. Dr. C.K. Osei | - | Head, Centre for Distance and Continuing Education |
| 3. Dr. K.O. Boateng | - | Head, KVCIT |
| 4. Ms. Lucy Diawuo | - | Assistant Registrar/Legal Officer |
| 5. Mr. J. Gambrah | - | Accountant |

Staff Strength

The Institute is manned by KNUST staff and National Service Personnel. The permanent University staff comprise of twelve (12) Senior Members, made up of one Professor, who is the Head of the Institute; one Senior Research Fellow, seven Research Fellows, two Assistant Registrars; one of whom is stationed permanently in Accra and an Accountant. In addition, there are seventeen (17) senior and junior staff and nine (9) national service persons who act as supporting 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 (5) postgraduate and eleven (11) undergraduate programmes.

Learning Centres

From a humble beginning of two Learning Centres at Accra and Kumasi in 2005, the Institute currently, provides facilitated face-to-face sessions at eight (8) Learning Centres. The other centres are

- Ho, Koforidua, Takoradi, Sunyani, Tamale and Cape Coast that cater mainly for the CEMBA/CEMPA programmes at the postgraduate level and Business Administration at the undergraduate level.

By the addition of Bolgatanga and Wa Centres at the beginning of the 2011/2012 academic year, KNUST would be in all the ten Regions of Ghana.

Accra and Kumasi are the major centres and provide the bulk of Institute's students, with Tamale and Takoradi also emerging as major centres. The percentage distribution of students by centres is given in Table 1.

Table 1: Percentage Share of IDL Students by Centre (2010/2011)

Centres	Undergraduate	Postgraduate	Total	Percentage
Accra	1142	732	1874	37.2
Kumasi	939	728	1667	33.1
Takoradi	195	218	413	8.2
Sunyani	51	125	176	3.5
Ho	40	96	136	2.7
Koforidua	100	144	244	4.8
Tamale	277	197	474	9.4
Cape coast	-	51	51	1.0
TOTAL	2744	2291	5035	100

The Dean's office runs the Kumasi centre and coordinates the activities of all the other centres. An Assistant Registrar has been appointed and stationed in Accra as IDL's Accra Centre Coordinator to man the Accra centres. The other centres are manned by non KNUST staff appointed by the Institute mainly from the Polytechnics in the respective cities. IDL is in the process of grouping these centres into zones. When this is done all the centres would be supervised by Zonal Coordinators.

STUDENT POPULATION

The Institute has witnessed an increasing trend in student enrollment over the years. With less than 300 in 2005, IDL recorded a student population of 2,575 during the 2009/2010 academic year. This has shot up to 5,035 during the year under review. This comprises of 2,291 postgraduate and 2,744 undergraduate students (Table 1). The student population is expected to increase further by about 4,000 by the next review period and the 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 lecture rooms at our centres, particularly in Accra. It is hoped that when the IDL's Accra and Kumasi building complexes (work on which are about to start) are ready, this problem would be a thing of the past.

PROGRAMMES

The Institute currently runs a total of eleven (11) undergraduate and five (5) post-graduate programmes. Two new postgraduate programmes have been introduced and would commence at the next academic year. Student enrolment in these programmes by centre and year of study is presented in tables 2 and 3.

Undergraduate programmes

At the undergraduate level, the Institute runs a two year Top-Up programmes for Diploma and HND holders and the normal four year programmes.

Four year programmes

The 4-year undergraduate programmes are run at the Accra and Kumasi centres only. 504 students are currently registered under the six programmes (Table 2)

Table 2: 4- year Undergraduate Programmes by Centre and Registered Students (2011/2012)

Undergraduate	Centre	No. of Students				
		Year I	Year II	Year III	Year IV	Total
BSc Actuarial Science	Accra		22	19		41
	Kumasi	23	12	11		46
BSc Computer Engineering	Accra		25	12	20	57
	Kumasi	20	23	17	16	76
BSc Building Technology	Accra				8	8
	Kumasi				21	21
BSc Construction Tech. & Management	Accra		30	12		42
	Kumasi		4	13		17
BSc Quantity Surveying and Construction Economics	Accra		28	35		63
	Kumasi		2	18		20
BA Sociology and Social Work	Accra	28	25			53
	Kumasi	31	19			60
TOTAL		102	190	137	65	504

Top-Up Programmes

The Institute is shifting emphasis from the four year BSc/BA programmes to the two year top-up programmes, targeting HND holders. During the year under review the Institute introduced four of such programmes and the response was very encouraging (Table 2a). Students, after the bridging course are expected to start from the third year when the 2011/2012 academic year starts.

Table 2a: Top-Up Undergraduate Programmes by Centre and Registered Students 2011/2012

Top-Up Programmes	Centre	Bridging Programme	Year III	Year IV	Total
BSc Computer Science	Accra	18	19		37
	Kumasi	11	8		19
BSc Electrical/Electronic Engineering	Accra	137	81		218
	Kumasi	107	70		177
BSc Telecommunication Engineering	Accra	24	28		52
	Kumasi	18	22		40
BSc Computer Engineering	Kumasi	34			34
BSc Statistics	Accra	54			54
	Kumasi	42			42
*BSc Business Administration	Accra	152			152
	Kumasi	141			141
	Takoradi	94			94
	Koforidua	100			100
	Ho	40			40
	Sunyani	51			51
	Tamale	196			196
*BSc Mechanical Engineering	Accra	141			141
	Kumasi	78			78
	Takoradi	65			65
	Tamale	32			32
*BSc Quantity Surveying and Construction Economics	Accra	111			111
	Kumasi	79			79
	Takoradi	16			16
	Tamale	20			20
*BSc Construction Technology and Management	Accra	87			87
	Kumasi	74			74
	Takoradi	20			20
	Tamale	29			29

Doctor of Optometry	Accra		26		26
	Kumasi		15		15
Total		1971	269		2240

** Newly introduced programmes*

POSTGRADUATE PROGRAMMES

The following are the post-graduate programmes currently on offer:

1. MSc Commonwealth Executive Masters in Business Administration (CEMBA)
2. MSc Commonwealth Executive Masters in Public Administration (CEMPA)
3. MSc Environmental Science
4. MSc Industrial Mathematics
5. MSc Post-Harvest Technology
6. MSc/MPhil Information Technology
7. MSc/MPhil Health Informatics

The CEMBA/CEMPA programmes are currently run in all the seven learning centres and are the most patronised. During the year under review the two programmes recorded a majority of the entire student population, with the concentration in Accra and Kumasi centres (Table 3). MSc/MPhil Information Technology and MSc/MPhil Health Informatics are newly introduced programmes.

Table 3: Postgraduate Programmes by Centre and Registered Students

Postgraduate	Centre	No. of Students		
		Year I	Year II	Total
CEMBA/CEMPA	Accra	225	288	513
	Kumasi	205	219	424
	Takoradi	105	113	218
	Sunyani	63	62	125
	Ho	42	54	96
	Cape Coast	51	-	51
	Koforidua	85	59	144
MSc Environmental Science	Accra	53	48	101
	Kumasi	75	65	140
MSc Industrial Mathematics	Accra	53	65	118
	Kumasi	65	60	125
MSc Post Harvest Technology	Accra	-	-	-
	Kumasi	21	18	39
TOTAL		1163	1128	2291

The MSc Environmental Science and Industrial Mathematics Programmes are run only at the Accra and Kumasi centres. The two programmes recorded a student's population of 241 and 243, respectively in 2010/2011 review year. The MSc Post Harvest Technology Programmes runs at the Kumasi centre only. It recorded a student population increase of 21 as against 18 recorded in the previous review period.

COLLEGES WITH PROGRAMMES ON OFFER

The Institute currently runs programmes of all the Colleges in the University (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)
2. Arts and Social Sciences	a. BA Sociology and Social Work b. BSc Business Administration	
3. Architecture and Planning	a. BSc Building Technology (Since 2006/07) 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) MSc/MPhil Health Informatics MSc/MPhil. Information Technology
6. Health Science	Doctor of Optometry	

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 - Print Production - Book Selling - Visual Conceptualisation - Mass Communication	i) Postgraduate Diploma in Publishing Studies (1 Year) ii) Masters in Publishing Studies (2 years)
b) Department of General Arts Studies	-	(i) Graduate Diploma in Education
College of Engineering	Civil/Geomatic (Top-Up)	
Health Science	BSc Emergency Nursing (Top-Up)	
Agriculture & Natural Resources	BSc Agriculture Engineering (Top-Up)	
IDL Special Programmes		MSc Procurement Management,

		MSc Enterprise Risk Management and Business Consulting
		MSc Development Management

Graduation

During the year under review, a total number of Two Hundred and fifty Eight (258) students comprising both undergraduate and post-graduate students graduated. From the above figures, 15 BSc Building Technology students, 23 BSc Computer Engineering students, 24 MSc Industrial Mathematics students and 32 CEMBA students graduated in June 2010. Again, 36 M.Sc. Industrial Mathematics students, 147 CEMBA students and 17 students CEMPA graduated in November 2010.

Physical Infrastructure Development

Negotiations are far advanced to start on a new Institute of Distance Learning building complex, comprising classrooms and offices in Accra. Similarly, five (5) KNUST residential facilities located at Nhyiaeso, 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 are completed, one of the Institute's major challenges; office and classroom space would be resolved.

DEPARTMENTS

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's activities for the year 2010/11 covered two main areas; the Proficiency Certificate in Architectural Draughtsmanship (PCAD) Programme and Course Material Restructuring and Production for Distance Learning students.

Material Production Unit (MPU)

The Material Production Unit edits and produces course materials in the distance mode. They also conduct course writer's training workshops for course material developers from the various departments. 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

CDCE staff will continue to play roles such as coordination of DL programmes and Centres, facilitation of DL courses and teaching in some regular courses.

KUMASI VIRTUAL CENTRE FOR INFORMATION TECHNOLOGY (KVCIT)

INTRODUCTION

The Kumasi Virtual Centre for Information Technology (KVCIT) is one of the two Departments under the Institute of Distance Learning (IDL). KVCIT activities for the year 2010/11 covered the following areas;

1. Moderating the IDL's Learning Management System (E-Learning Platform), and the virtual classroom for distance learning students and facilitators;
2. Certificated computer literacy programme;
3. Certified AUTOCAD Programme for Architectural Draughtsmanship students from CDCE and elsewhere.

Material Production Unit (MPU)

- The Material Development Unit will continue to edit and produce course materials in the distance mode.

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.

SCHOOL OF GRADUATE STUDIES**INTRODUCTION**

The School of Graduate Studies was established in 2002 following the restructuring by the University Council. It has existed from 1974 as Board of Postgraduate. The restructuring was to strengthen and position the School to face the challenges of graduate studies in the country.

The main objectives of graduate studies at the Kwame Nkrumah University of Science and Technology (KNUST) is the training and development of higher degree graduates to acquire specialised 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 mobilised to ensure maximum utilization of available potential through courses and programmes organized by the School of Graduate Studies.

GRADUATE PROGRAMMES OFFERED

The School of Graduate Studies run more than eighty programmes in the various departments, notably among them are: Agriculture, Mathematics, Engineering, Physics, Silviculture and Forest Management, Chemistry Art, etc.

The School awards 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

The table below shows the number of students who were admitted during the 2010/2011 academic year.

COLLEGE	NO. OF STUDENTS
Agriculture and Natural Resources	131
Architecture and Planning	113
Art and Social Sciences	859
Engineering	107
Health Sciences	206
Science	202
Institute of Distance Learning	1175
TOTAL	2793

School of Graduate Studies Graduated 699 Candidates during November 2010 Special Congregation made up of the following

Summary	MS C	M P H IL	M A	M F A	MB A	CEM BA/C EMP A	M .P ha r	M.Arc h	PH D	PG D	TOTA L
College											

							m				
Agriculture & Natural Resources	37	7							5		49
Art and Social Sciences		5	34	5	162				20	66	226
Architecture & Planning	31							1	2		100
Engineering	19	2							1		22
Health Sciences	29	12							5		46
Science	68	12							6		86
Institute of Distance Learning						164					164
Osei Tutu II Institute of Advanced ICT Studies (Affiliated to KNUST)	6										6
TOTAL	190	38	34	5	162	164		1	39	66	699

NEW PROGRAMMES APPROVED

The School Board approved the running of the following new programmes to support and augment the existing ones:

- Master of laws (LLM)
- Master of Philosophy in Urban Management Studies
- Doctor of Philosophy in Soil Science

ACTIVITIES

The SGS, which acts as a co-coordinator 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 excellence.
- 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.

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 Kwame Nkrumah University of Science and Technology Faculty of Natural Resources and the Department of Geomatic Engineering. Master of Science in Road Transportation in Civil Engineering under World Bank auspices; Master of Science in Water Supply and Environmental Engineering in collaboration with UNESCO and IHE Delft. Master of Science and Doctor of Philosophy in Agriculture (AGRA programme).

There is still room for many more linkage programmes for interested institutions and organisations. They are, therefore, welcomed.

CHALLENGES

The School has some challenges which are listed below:

- Office spaces, currently the school is housed in the Chemistry Block with few rooms. There is serious congestion. This actually needs immediate attention.
- ICT facilities, the whole University is now going ICT. The ICT facilities are bit weak. The school needs ICT specialist to be in full in charge of our examination processing.

CONCLUSION

The School of Graduate Studies shall remain unwavering in addressing the needs of Graduate Students and will remain focused in its bid to expand graduate studies.

OFFICE OF THE DEAN OF STUDENTS

INTRODUCTION

The Office of the Dean of Students was formally established in 1997 to provide the needed and necessary welfare support services for students during their period of study at KNUST. The Office, over the years, has sought to fulfill its mission by assisting Students to understand in both specific and general terms how the University operates both at the social and academic levels. This consequently enables them to understand, regulations and procedures and ways to getting their needs met. The Office had further provided opportunities for students to develop and enhance their leadership skills by involving them in decision making processes, supporting advocacy for students and providing and involving them in conflict resolution techniques.

Staffing

The current Senior Member staff strength of the Office of the Dean of Students is as follows:

Dr. Kofi Owusu-Daaku - Dean

Dr. Rudith King - Vice Dean

Mr. Kofi Yamoah - Coordinating Counsellor

Ms. Josephine Djampim - Senior Assistant Registrar

Mrs. Victoria De-Graft Adjei, Counsellor

Mr. Joseph Asamoah Gyawu, Counsellor

In addition, there are three (3) Senior Staff, twenty eight (28) Junior Staff and Nineteen (19) National Service Personnel. The outfit is further supported by some auxiliary staff from NYEP.

Organisation

The office is internally organised into several sections as listed below

- i. Administration
- ii. Student Guidance and Counselling
- iii. International Students Affairs
- iv. Student Representative Council Affairs
- v. Student Housing and Residence Life
- vi. Student Conduct and Discipline
- vii. Student Support Services

Future Expansion

Plans are well advanced to transform the office into a complete Student Affairs outfit with the transfer of the offices of the Student Financial Services and Student Affairs offices from central administration to provide “one stop shop” for students. The transfer is to begin in June 2011 and became functional by the beginning of 2011/2012 academic year in August 2011.

ACTIVITIES

Highlights of the 2010/2011 academic year activities included the following service areas;

Faculty Visitations

A team from the office including the Dean, Vice-Dean, the Coordinating Counsellor and Office Registrar held interactive meetings with lecturers and students of the six colleges over the year. In the first semester, we met with Provosts, Deans of Faculty, Heads of Departments and the lecturers in each College to discuss issues, involving students, regarding how to improve the quality of services for students and the University in general. These meetings were held during the second half of the semester when students were preparing for their examinations. Lecturers were encouraged to look out for vulnerable students who may be pressured academically, financially or psychologically. During the second half of the second semester the team organised similar interactive meetings exclusively with the students of the Colleges. Students were encouraged to present their concerns verbally or to write them. Feedback from these meetings were appropriately documented and disseminated

The overall purpose of these meetings was to deepen collaboration between the Office and the Faculties to promote strong working relations to produce sustainable and measurable results.

Orientation/Training/Workshop

The Office organised a number of orientation and training programmes during the year.

Freshers orientation

Every year the Dean of Students Office makes two separate presentations at the freshers orientation. The first one is on the general services provided to students and the second presentation is on the Guidance and Counselling services available to students at the Dean of Students Office.

Orientation for the newly elected executives of the Student’s Representative Council

The purpose of the orientation was to foster good working relationship between students and the University Administration in order to maintain sustainable peaceful environment.

The theme for the SRC Orientation, for the year in review, was “The Leadership Role of the SRC in the Pursuit of Integrity and Academic Excellence”. It was a two-day full day sessions funded entirely by the Office to provide the newly elected SRC executives to understand the mechanisms in the Administration of the University, as a whole. The topics addressed included:

- The Vice-Chancellor’s Office and Students Administration
- SRC/Students and University Administration
- Managing Student Finances
- Auditing of Accounts in the University as Applied to the SRC
- Procurement Law and procedures in the University
- Security on Campus
- Legal Procedures in the University
- Student Leaders in Quality Assurance Management
- Negotiation Skills
- Medical Services in KNUST and what to do in Emergency
- Leadership and Leadership Styles
- Discipline, Self-discipline and Indiscipline

- Time Management and Study Skills

Hall Administrators and Managers on Disaster Management and its Prevention

One week training on disaster management and prevention was organised for Hall Administrators and Managers on “Disaster Management and its prevention”. The Trainees were challenged to replicate the training in their respective Halls and Hostels. Resource persons were drawn from the Police, Fire Service and NADMO

Orientation for Female Senior Members of the University on Mentorship

The participants were all female Lecturers and Administrators of the University. The purpose of the orientation week was to train the female mentors to assist the female student population with their personal issues including victims of sexual harassment. The Mentors were to assist the female Students to increase their personal self-esteem and/or with positive self affirmation. The topics addressed included:

- Concept of Gender and Gender Mainstreaming
- Handling Victims of Sexual Harassment and Ethical Issues
- Sexual Harassment and the Counseling Process
- Unsafe Abortion: A Major cause of Maternal Death in Ghana (with Student participating)
- Basics of Counselling
- Sexual Harassment in Tertiary Institutions in Ghana
- Workplace Discrimination
- Gender in Science and Technology
- Planning a Successful Career in Science and Technology

Mediation(s)

The Office assisted or formed several Committees of Investigation to accomplish specific goals. The Unit assisted in resolving numerous theft, fraud and assault cases.

PROSPECTIVE UNIVERSITY APPLICANTS

The Office provided services to prospective KNUST applicants to make suitable programme choices. Applicants therefore received counselling on how to select appropriate programmes based on qualification, content and expectation of specific programmes and, the job market with respect to employment.

Service to the Community was to reduce the rate of frustration(s) by applicants who mistakenly disqualify themselves due to ignorance.

STUDENTS GUIDANCE AND COUNSELLING UNIT

The Counselling Unit was established in 1993, purposely, to improve the welfare of students, in particular, and members of the University community, in general. Since then, the Counselling Unit has undertaken various activities and programmes beyond the general counseling services. It assists students and the entire University community to maximise the use of services of the Office of the Dean of Students; and by that into another level of service delivery. It conducted orientation, training and workshops for Students and the University community.

GENERAL COUNSELING SERVICES

The Counseling Unit, during the 2010/2011 academic year, rendered the following services;

- (i) psycho-educational counseling, (ii) psychotherapy, (iii) social/behavioral counselling
- (iv) providing adequate liaison between the office the faculty and hospitals on medical issues and (v) finding solutions to academic and social issues

The psychological cases included personality disorders with phobic and related sub-type disorders. Psychosocial cases included counseling clients to cope with the hangover from broken homes, broken relationships, bereavement, sexual disorientation, etc. The Counselling Unit referred students to KNUST Hospital for treatment when the presenting problems were of medical in appearance and was supported by the Hospital in referring psychiatric cases to Komfo Anokye Teaching Hospital. . Similarly, the Counselling Unit received a sizeable number of students referred from KNUST Hospital, for counseling.

Academic problems and associated social issues, however, represented the highest among the service delivery. The majority of students expressed difficulty in coping with their programmes, and some, sought to change or defer their programmes for a variety of reasons.

Acute financial and accommodation problems represented significant number of request for immediate support. For some students, they were equally assisted on how to access existing credit facilities. In some instances however, some students were assisted to benefit from affordable campus accommodation. Others were offered fees subsidy through the University's Students Financial Services or the SRC Ketewa Biara Nsua (KBN). In extreme cases the office provided support for students in dire and emergency need.

The general counseling services during the 2010/2011 academic year is as follows;

HOSPITAL VISITATION

The Counseling Unit liaised with the University Hospital by monitoring inpatient hospitalisations among the student population. The Peer Counsellors tracked and visited students, during hospitalisation, and performed case management services with follow-up visits on those who were found to be with unusual and/or with severe medical conditions.

The Counselling Unit obtained referral forms/letters from the University Hospital and escorted students to Komfo Anokye Teaching Hospital (KATH) and other psychiatric hospitals for treatment.

A total of twenty (25) students underwent psychiatric treatment for the reporting period.

PEER COUNSELORS

Trained and managed them to bring counseling to the door steps of students. The Peer Counselors acted as the linkage between students and the Office of the Dean of Students. They referred cases to the Unit and also assisted their colleagues in overcoming some of their personal difficulties. The Peer Counselors were therefore trained in the counseling process.

WAY FORWARD

There should be a Resident Counsellor, on campus, to provide prompt attention, after normal working hours, to students with distress calls.

International Students Affairs

The Vice-Dean of Students exercises oversight responsibility over the provision of support for the international students. In the year under review, there were 1,114 international students in the University. A number of activities were planned for the year and were successfully executed.

STUDENT REPRESENTATIVE COUNCIL (SRC)

The Dean of Students continued to provide secretarial services to the Board of Trustees of the Otupmfuo (Osei Tutu II) SRC Hostel. Recent developments suggest the office should provide more support in the management and running of the Hostel.

STUDENTS HOUSING UNIT

This unit is headed by a licensed professional surveyor with a Land Economy degree. The Students Housing Unit is responsible for non-resident students accommodation issues as well as the management of the three non-resident students facilities.

A report on the 2010/2011 academic year is as follows:

INFRASTRUCTURE AND FURNITURE

All three non-resident facilities were repainted to give them a facelift. Minor carpentry, electricity and plumbing works were carried out in order to keep them in functional conditions. New units of bunked metal chairs were also purchased to supplement the existing inadequate furniture at the facilities. In addition the compounds at the facilities have been awarded on contract for landscaping and beautification.

PRIVATE HOSTEL ACCOMMODATION

The unit continues to work with providers of private hostel accommodation to ensure the safety and welfare of non-resident student of the University. This was achieved through a series of meetings held with hostel operators and physical inspection of these hostels. For the first time, a comprehensive inspection of all private hostels was carried out by a joint team of officials from the Dean of Students Office. The purpose of the inspection was to assess each of these and further decide whether to recommend or not for endorsement and publication on the University's website.

Way Forward

A number of useful recommendations especially bordering on security at the hostels were recommended to the managers of these hostels for implementation at their own expense. Following the inspection and recommendations that were made, this office endorsed 33 private hostels for publication on the University's website as well as other media in order to inform the students. The list of approved hostels contains the locations and distances with respect to campus, facilities and services provided, as well as rental charges for the 2011/2012 academic year.

STUDENT CONDUCT AND DISCIPLINE

Efforts were made to investigate and apply appropriate disciplinary measures against students who were in breach of University Regulations. Unfortunately, despite the relevant orientation and counseling, some students remained susceptible to a number of offences that did not augur well for communal co-existence; stealing, assault, defamation and fraud both on-and off-campus were recorded.

STUDENT SUPPORT SERVICES

The Office, through the Dean of Students, worked with the Students Financial Services, at committee level, to select needy students who required financial support from the University. In addition, the Dean oversaw the operation of the Students' managed Ketewa Biara Nsua (KBN) fund that assists needy students. Soft loans were granted to some needy students who applied for them.

The Office received numerous complaints for mediation and settled disputes among students.

FUTURE PLANS

- Improve and expand present physical infrastructure to bring about efficiency and quality of service delivery.
- The Office is in the process of restructuring the current staffing pattern to conform to the Dean's new initiatives toward development.

CONCLUSION

The year, in question, has produced an active engagement at all levels among our students, partners and management with beneficial results. We have had fruitful and peaceful, yet challenging year, and look forward to better years ahead for the entire KNUST community. It is hoped that contact with the Colleges will expand to enable sustainable provision of better welfare services to Students.

UNIVERSITY LIBRARY

INTRODUCTION

During the period under review, the KNUST Library System, which comprises of the Main Library and six College Libraries, performed satisfactorily its core business of acquiring, processing, organising 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.

BOOK STOCK

The total number of books added to the stock of the Main Library in the year under review was 3,088. Out of this number, 998 were purchased mostly from local sources, 1175 were received from the Ministries, Departments and Agencies, 185 came from the United Nations and its specialised agencies like the FAO, WHO and ILO, 59 were from the World Bank. Only five (5) were received through legal deposit.

PRINT JOURNALS

The Main Library increased its subscription to peer-reviewed journals under the Association of Commonwealth Universities' Low Cost Journal Scheme from the previous year's figure of 203 to 260 during the 2009/2010 academic year. This was as a result of the popular demand for these journals by both faculty and students. The Library also continued with the subscription to the 20 locally published journals as had been the case in the previous year. Therefore, the total number of both foreign and local journals subscribed to by the Library during the period under review was 280 as against 223 of the previous year.

OTHER PUBLICATIONS

A total of 137 other publications which included newsletters, bulletins, annual reports and conference proceedings were received on free subscription from the United Nations and its affiliates like the WHO, ILO, FAO as well as USIS, the British Council and some foreign missions in the country.

ELECTRONIC JOURNALS

Libraries in the University System had access to over 21,000 electronic journals from over 40 academic databases such as AGORA, HINARI, EBSCOhost, OARE, Emerald, IEEE, Institute of Physics,

Blackwell/Wiley, OUP, World Scientific, Science Direct, among others. This was due to the continued membership of the University as a member of the Consortium of Academic and Research Libraries of Ghana (CARLIGH). The most important addition to these databases in the course of the year were Sage publications and Project MUSE. Science Direct, Emeraldinsight, EBSCO, Sage, JSTOR and Google Scholar constituted some of the highly consulted sources.

LOCAL NEWSPAPERS

The Main Library continued with the direct subscription to single copies of the Daily Graphic, The Mirror, Graphic Business and Graphic Nsempa from the Graphic Communication Group Limited. Besides, the Library received two complementary copies each of the first three newspapers from the publishers. The Main Library also subscribed to single copies of The Ghanaian Times, The Spectator and the only private newspaper, The Pioneer.

During the 2009/2010 academic year, the number of the indexed local newspaper items entered into the 'NINDEX' database was about 5,000, bringing the total entries recorded so far to 55,210. The database served as a reliable source of primary information on current and past events in Ghana and around the world for the University Community, notably final year undergraduate and postgraduate students working on project works and theses.

PROCESSED BOOKS

There were 1,549 books processed and distributed to the various sections/departments of the Main Library by the Cataloguing Department. The break-down was as follows:

Lending Department	-	131
Research Library	-	309
Undergraduate Library	-	354
Ghana Collection	-	210
Women's Studies Collection	-	24
United Nations Publications	-	382
World Bank Publications	-	139
Total		<u>1,549</u>

Some books were accompanied by CD-ROMS and diskettes. These were labeled and sent to the Electronic Information Department for access by users.

READER SERVICES

Membership of users of the Library in the year under review decreased from 8,614 of the previous year to 4,345. The decrease could have been due to low admissions.

The Circulation or Issue Desk area continued to be the busiest access point in the Library. However, for the 2009/2010 academic year, there was only a marginal decrease in the number of books borrowed as compared to that of the same period the previous year. There were 8,308 books borrowed as compared to 8,585 for 2008/2009.

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 specialised subject encyclopedias and dictionaries, almanacs, handbooks and university prospectus.

The total number of processed books which the Undergraduate and Reference and Research Libraries received from the Cataloguing Department during the 2009/2010 academic year was 1,279.

The break-down was as follows:

Undergraduate Library	-	354
Research Collection	-	309
Ghana Collection	-	210

Women's Collection	-	24
UN Publications	-	382
Total		<u>1,279</u>

A total of 7,737 books were consulted during the year. Out of this, 2,470 were temporary reference books, 1695 materials in the Ghana Collection and 3,572 theses.

ELECTRONIC INFORMATION SERVICES

The Electronic Information Department continued to perform its core functions of providing access to a number of e-resources, carrying out Selective Dissemination of Information (SDI) for clients and organising users' education programmes for library users.

An additional ten (10) databases were added to the existing 30 in the Department in the period under review. The Consortium of Academic and Research Libraries of Ghana (CARLIGH) continued to play a leading role in negotiating for reasonable subscription fees and payment terms on behalf of its members, which included the KNUST Library System.

Over 40,000 documents were retrieved by the Department to meet more than 400 requests by clients during the period. Besides, more than 100 hard and soft copies of lists of databases were distributed to lecturers and students who requested for them.

THE DEVELOPMENT INFORMATION CENTRE

The Development Information Centre, the brain-child of both the World Bank and KNUST, continued to attract final year undergraduate and postgraduate students who were in dire need of current information on development-centred issues for 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.

Clients enjoyed maximum access to the online resources available at the Development Information Centre. The Centre added 139 books to its existing stock, bringing its total stock to 1,332 books. This was in addition to Policy Research Working papers, appraisal documents and over 4,800 materials of the World Bank's e-Library already available for access by clients.

KNUST INSTITUTIONAL REPOSITORY (KNUSTSpace)

The KNUST Institutional Repository – IR (KNUSTSpace) was set up in February 2009 and had a test run for five months. It is mainly to manage and disseminate research output from 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 a live (online) IR. The KNUST IR currently has over 1,478 documents made up of both abstracts and full text documents in portable document format (pdf). Majority of these documents are JUST Publications and postgraduate theses. Since it is an Open Access IR, it could be accessed anywhere in the world where there is connectivity. It can be accessed through the major search engines or the URL <http://dspace.knust.edu.gh>. Currently, postgraduate students submit their theses to the Graduate Centre either online or to the IR to be uploaded.

Records from DSpace logs files show that members of the University community and the general public heavily download documents from KNUSTSpace.

LIBRARY AUTOMATION

The KNUST Main Library embarked on a comprehensive automation project in the year 2009 with Alexandria software. The first phase took off after series of training of the members of staff in May, 2009. After embossment of new barcodes on all the books in the Library, their bibliographic information was captured on catalogue cards under the supervision of Senior Members of the Library.

Ninety-two thousand records have so far been entered into the database including library materials in the Lending Department and the Undergraduate 1 section of the Reference Department. The College Libraries are also entering their records into the database.

The Alexandria database is open to users and can be accessed anywhere outside the Library via Internet. Support from management and staff is needed for timely completion of the automation project.

STAFFING

During the period under review, the staff strength of the entire KNUST Library System stood at ninety – three (93) as against the established number of one hundred and twenty four (124). Transfers, resignations and retirements accounted for this short fall. We appeal earnestly to the authorities to ensure that all the thirty – one (31) vacancies are filled to enable the Libraries in the University System operate at full capacity.

The break-down is as follows:

Senior Members	-	Seven (7)
Senior Staff	-	Ten (10)
Junior Staff (Technical)	-	Eleven (11)
Junior Staff (Non Technical)	-	Three (3)

INCOME GENERATION

During the 2009/2010 academic year, the University Library generated income through fines and photocopying services as follows:

Photocopying	-	GH¢ 3,048.60
Fines	-	GH¢ 2,426.82
Total		<u>GH¢5,475.42</u>

The Library did not generate any income from e-mail and fax services due to the break down of the fiber optics cable over the period under review.

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 for the 2009-2010 academic year was 63,766 as against 69,065 volumes of the previous academic year. The number reduced because the Libraries weeded and discarded badly torn and old books.

The break-down was as follows:

College of Agriculture and Natural Resources	-	5,935
College of Architecture and Planning	-	5,034
College of Art and Social Sciences	-	16,410
College of Engineering	-	7,000
College of Health Sciences	-	17,248
College of Science	-	12,139
Total		<u>63,766</u>

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 positions as Board Member of the Electronic Information for Libraries Network (eILF.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, Konogo-Odumasi Senior High School and also as 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

In the year under review, the KNUST Library System provided relevant and quality information from both print and electronic sources to support teaching, research, learning and entrepreneurship training in the University. It is hoped that when the automation project is completed, the University Library System would be able to render improved services to the University Community.

INTERNATIONAL PROGRAMMES OFFICE

INTRODUCTION

The International Programmes Office (IPO) was established to handle collaborations between KNUST and other national and international universities and institutions. In view of this the IPO is vigorously working with all stakeholders (Colleges, Departments and faculties) by engaging them in a number of activities that seek to strengthen already existing collaborations as well as initiate new ones.

Collaborations and Memorandum of Understanding Signed

In 2011 KNUST signed memoranda of understanding with the following institutions:

International Institutions

- Oklahoma State University, USA, 5th January 2011
- Global Access Education, USA, 6th January, 2011

- Dalian Medical University, China, 25th January, 2011
- University of Electronic Science and Technology of China (UESTC), China, 14th March, 2011
- Embry-Riddle Aeronautical University, USA,
- Netherlands Centre for Biodiversity Naturalis, Leiden, The Netherlands, 6th April, 2011
- University of Minnesota, USA, 6th April, 2011
- Katholieke Universiteit, Leuven, Belgium, 24th March, 2011
- North Carolina Agricultural and Technical State University, USA, 28th February, 2011
- Beauchemin-McGinn Award of Excellence in Agriculture, Canada, 11th March, 2011
- Wageningen University and Research Centre, The Netherlands

Follow-Up Issues With Respect To MOUs Signed

- Hohai MOU: has offered two (2) PhD scholarships and three (3) Masters Degree for the 2011/2012 academic year at Hohai University, China.
- Stellenbosch University : has offered a month appointment as a visiting Lecturer to Rev. Dr. Kwabena Opuni-Frimpong, Religious Studies Department, College of Arts and Social Sciences.
- Dalian Medical University: has offered two (2) PhD scholarships to the College of Health Sciences
- University of Electronic Science and Technology of China (UESTC) MOU: has offered two (2) PhD scholarships to the Department of Electrical & Electronic and Department of Computer of Engineering, College of Engineering
- Hanbat National University has offered four (4) scholarships for MSc. Programmes in Engineering to four of our Teaching Assistants. The students are currently undergoing their studies in Hanbat.
- Hanbat National University again has offered an all expenses paid for scholarship for a semester's study to the best student in Engineering from September to January, 2012.
- The French Embassy offered two (2) PhD scholarships to one male and one female student from the Department of Mathematics.
- A consortium of French Partners in Mathematics has agreed to supervise all non PhD lecturers in the Department of Mathematics beginning in August 2011.
- Air Liquide is offering a one year scholarship to an MSc student in Chemical Engineering.
- Technip French Company in Ghana is offering one scholarship for a year to an MSc Mechanical Engineering student.
- A collaboration worth noting is that initiated by the eight public universities in Denmark, "Universities Denmark" to collaborate with universities in selected developing countries to build their institutional, human and research capacity in four thematic areas namely:
 - Human Health
 - Growth and Employment
 - Environment and Climate
 - Stability, Democracy and Rights

Proposal from the Platforms of Growth and Employment and Environment and Climate has been submitted by our Danish counterparts to DANIDA for funding. Hopefully if the proposal wins the highest funding of ten million Danish Kroner (DKK), we can train four persons from KNUST on each of the Platforms.

AGE

The Global Access to Education organisation with whom KNUST signed an MOU earlier in the year is seeking office accommodation to embark the recruitment of students for study abroad programmes abroad and also bring students to KNUST for study abroad programmes.

ISEP

Arrangements are underway to get KNUST listed as one of the destination universities for the International Student Exchange Programme. When concluded this arrangement would bring hundreds of study abroad students to KNUST each year.

INTERNATIONAL STAFF AND STUDENT EXCHANGES IN THE YEAR

One student from Michigan Technological University, USA was received at KNUST for a semester's study during the Second semester of the 2010/2011 academic year. It must however be noted that there could have been other study abroad students and staff on the campus whose admissions and engagements might have been handled at the department and faculty levels without any recourse to the IPO.

ACTIVITIES

Major activities undertaken by the office during the year under review include:

- Familiarisation visits to the Colleges.
- Organisation of field trip to sections of Northern Ghana.
- Soliciting of data on Senior Members without PhD
- Soliciting of data on Teaching Assistants
- Issuance of letters to all Colleges/ Faculties/Departments to outdoor their inventions and products at the AGI's Made in Ghana Trade Fair.
- A Collaboration with AGI in organising INDUTECH.

VISITORS

The office received delegations from the underlisted institutions. The purposes of most of the visits were to seek collaborations between KNUST and their Institutions for 2011.

1. Oklahoma State University, USA,
2. Hahhot Inner Mongolia, China,
3. Vision 2020 (Optometry),UK,
4. DePauw University , USA,
5. Dalian Medical University, China,
6. Bordeaux School of Management, Senegal
7. Universities Denmark, Denmark
8. Musashino Art University, Japan
9. University of Taxase, Huston,USA
10. University of Lincoln, UK
11. University of Westminster, UK

SPORTS DIRECTORATE

INTRODUCTION

The Sports Directorate was established to create a conducive atmosphere for both the staff and the students to physically be fit and to recreate themselves through exercise and sports.

The vision of the Sports Directorate is to advance knowledge in sports and recreation for physical, social and mental development of individuals within the University community.

The Sports Directorate is tasked to provide environment and atmosphere for teaching, research and technical training for individuals and teams towards a healthy growth and proficient performers in sports, for the uplift of the University and Ghana.

The Directorate as its core value is committed to attracting, developing and promotion of sports among staff and students to help achieve the challenging targets and direction of the University, for an enabling environment for academic pursuit.

Leadership training and excellent performers are encouraged by offering the students the requisite training programme to improve their lot. This, we believe in by exposing talented performers to various sporting competitions both local and international university competitions.

SPORTS INFRASTRUCTURE

It is evidently clear that the population of the University is growing and our facilities are inadequate. However, the University is trying to make improvement and also encouraging stakeholders to assist in this regard. This has resulted in some halls trying to construct their own facilities.

COMPETITIONS

The University participated in major sports events at the students level and excelled. In October 2010 in far away Akure in Nigeria at West Africa University Games, Tennis, Athletics and Table Tennis Championship, the flag of Ghana was raised high by our athletes who represented the University. One of our athletes by name Oduro Friko Godwin was adjudged the Best Athlete for the Championship.

KNUST hosted a mini GUSA Games to select sportsmen and women to represent Ghana at World Universities Games slated for Shenzhen in China, in August 2011. Three events were competed for comprising Soccer, Athletics and Table Tennis.

Apart from hosting and organising a successful mini GUSA Games, KNUST won the men's soccer and men's athletics competitions. The story of high performance was evidently shown when ten (10) soccer players from our University and four (4) athletes were selected from all the public universities to form the GUSA team for the World Universities Games.

Nevertheless, apart from the students performance at competitive sports level, the staff are also engaged in sports. There is an ongoing staff soccer league.

The involvement of staff and students in sports is ensuring that the enabling environment is being created by the Sports Directorate to improve on recreational and the health status of the members of the University community.