

COLLEGE OF AGRICULTURE AND NATURAL RESOURCES

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 Utilization and Development (CBUD)
KNUST Dairy/Beef Cattle Research Station, Boadi
Agriculture Research Station, Anwomaso

COLLEGE ADMINISTRATION

The College Administration is headed by a Provost who is assisted by Administrative and Academic staff. The College Registrar heads the Administrative Staff; the College Accountant heads the Finance and Accounts Staff, and the College Librarian directs the delivery of library services to students and staff. The Faculties are headed by Deans; and Directors and Heads of Departments head the Research Units and Academic Departments, respectively.

The coordination of the teaching, research, income generation, students' welfare and other matters which have been extensively reported by Faculties, Academic Departments and Research Units is carried out in the Provost's Office by the following staff:

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
Senior Administrative Assistant	Mrs Insaidoo
Office Support	Mr. Godfred Fosu

MAJOR ACTIVITIES

Physical Development and Investments

The College made a total investment of over GHc1.3m in buildings, laboratory and field equipment, laboratory chemicals, and purchase and maintenance of vehicles. These investments have been made possible through our internally generated income.

Staff Recruitment and Development

The College made insignificant gains in recruitment of staff despite the aggressive head hunting and media advertisement.

Visitors to the College

The numerous individuals and groups who visited the College include the following: Bashir Jama and Marie Rarieya, SHP, AGRA, Jarno Hamalainen, Finland; B.P. Sah, Pasco Corporation, Tokyo; Renate Diggelmann and Lucien Biolley, Zurich, Switzerland; CEO, Clean Seed Capital Group, Canada, 3K&A Industries Limited, Kumasi. Visitors to specific Departments and Faculties are reported in the respective sections below.

Research Grants, knowledge generation and dissemination

Staff of the College made significant progress in attracting research funds which were used for generating research results; and also successfully reported such results at scientific meetings and in peer-reviewed journals. Overall, 158 scientific journal publications were made disaggregated by Departments as follows: Crop and Soil Sciences, 50; Horticulture, 35; Agricultural Economics, Agribusiness, and Extension, 20; Agroforestry, 9; Animal Science, 6; Silviculture and Forest Management: 8; Wildlife and Range Management, 17; Wood Science, 11; Social Forestry, 2.

Linkages

The College has supported Institutional linkages with Universities of Denmark, Norway, Michigan State, North Carolina, and Guelph with whom collaborative agreements have been signed with support from the KNUST Central Administration. These linkages have created virtual laboratories for generation and dissemination of research results and staff exchange. Details of these collaborations are reporting in the sections under the various Departments and Faculties.

FACULTY OF AGRICULTURE

DEAN'S OFFICE

INTRODUCTION

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 continue to 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 provided 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 offers six (6), programmes, namely; B.Sc. Agriculture, B.Sc. Post Harvest Technology, B.Sc. Agribusiness Management, B.Sc. Dairy and Meat Science and Technology, B.Sc. Landscape Design and Management, and B.Sc. Agricultural Biotechnology. The undergraduate student population currently stands at 1,599, a 16% increase over the previous academic year's population. Progress was made in post-graduate degree programmes in many disciplines of Agriculture. This includes the KNUST-AGRA PhD Soil Science Programme which seeks to establish a Centre of Excellence at KNUST for 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. The Departments of Crop and Soil Sciences and Horticulture also received AGRA (Alliance for a Green Revolution in Africa) funding to train graduates in M.Sc Plant breeding and M.Sc Seed Science and Technology. Currently 20 students from Ghana, Mali, Sierra Leone and Liberia are being funded under the AGRA initiative. Three other students from Liberia are receiving postgraduate training in Entomology, Poultry science and irrigation engineering with funding from Liberia's Agricultural Sector Rehabilitation Project being funded by the African Development Bank. AGRA supported MSc Soil Science programme for 15 students to be drawn from Burkina Faso, Ghana, Mali, Niger, and Nigeria has been approved and intended to start with eight students in the 2012/2013 academic year.

STAFF STRENGTH

The Faculty has teaching staff strength of forty-six (46) made up of six (6) Professors, six (6) Associate Professors, ten (10) Senior Lecturers and twenty-four (24) Lecturers. The teaching staff is supported by about 130 competent technical, administrative, and auxiliary staff.

DEANSHIP AND HEADSHIP POSITIONS

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

Prof. R. Akromah	Dean of the Faculty
Prof. E.L.K. Osafo	Vice Dean and Head of Dept. of Animal Science
Dr. K. Ohene Yankyera	Head, Dept. of Agric. Economics, Agribusiness and Extension
Dr. J. Sarkodie-Addo	Head, Dept. of Crop and Soil Sciences
Dr. B.K Maalekuu	Head, Dept. Of Horticulture

FUNDING OF RESEARCH ACTIVITIES

The Faculty continues 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 are provided 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), Agricultural Sub-Sector Improvement Programme (AgSSIP), 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). 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: (a) Refurbishment of Laboratories with support from the AGRA programme; (b) Rehabilitation of the Faculty's Staff car park; (c) Painting of the main Faculty building and Laboratories

The Faculty started implementing programmes towards overcoming the numerous challenges through the use of its present staff, laboratories, research farms and production units. The Faculty is already engaged in the process of re-organizing itself to fully exploit its potential to generate more income, through activities such as the establishment of the Finatrade/KNUST Model Farm projects. 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. The Faculty is funding a bee-keeping project under entrepreneurship training for the Agribusiness students.

INSTALLATION OF INTERNET FACILITIES AND PROCUREMENT OF NEW LCD PROJECTORS AND TEXTBOOKS

The Faculty, in its effort to enhance information and communication technology in all 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 various textbooks on Agriculture worth US\$2359.25 for its Library. Ten Desktop computers have been procured to add to the number at the students' ICT Laboratory.

LINKAGES WITH OTHER UNIVERSITIES AND INDUSTRY

These are provided in the reports by the various departments.

BENEFACTORS AND DONATIONS RECEIVED BY THE FACULTY IN

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 25th February 2012 at the Oak Plaza Hotel, Accra. The Faculty was represented by the Vice 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¢2000 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 organizations 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. A retired Agricultural Extension graduate and UNDP diplomat, (Nana Bitihene) of Akim Sekyere (E/R) donated a number of books and pamphlets to the Faculty. 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:

Mr. Mark M. Mensah	-	Amenfiman Senior High, Wassa Akropong
Dr. Kwesi Opoku-Debrah	-	Vice President, Clean Seed Capital Group, Canada
Dr. Greme Lempriere	-	CEO, Clean Seed Capital Group, Canada
Dr. John Abaka Amuah	-	3K&A Industries Limited, Kumasi
Dr. Yaw Adu Poku	-	3K&A Industries Limited, Kumasi
Prof. Haddish Melakeberhan	-	Michigan State University, USA
Dr. Tracy Teal	-	Michigan State University, U.S.A.
Rev. Dr. Edwin Momoh	-	Nyala University, Sierra Leone
Mr. Morrison Kinie Lahai	-	Nyala University, Sierra Leone

DEPARTMENT OF AGRICULTURAL ECONOMICS, AGRIBUSINESS & EXTENSION

INTRODUCTION

Department of Agricultural Economics, Agribusiness and Extension (DAEAE) is one of the Departments in the Faculty of Agriculture and in the College of Agriculture and Natural Resources, Kwame Nkrumah University of Science & Technology, Kumasi, Ghana. The Department runs undergraduate programmes in Agribusiness Management and Agriculture (with specialization in Agricultural Economics and Extension). The Department also offers Doctor of philosophy (PhD) and Master of Philosophy (MPhil) Degree in Agricultural Economics. Our postgraduate students specialize in food economics and marketing, Production economics or Farm Management.

Our strategic mandate is to provide higher education, undertake research, disseminate knowledge and foster relationships with outside persons and bodies. The ultimate objective of the Department is to produce graduates who have been adequately exposed to both theoretical and practical agricultural and agribusiness knowledge and are prepared to enter into the agribusiness sector as entrepreneurs or managers. Products from the Department have always found numerous niches in the changing job market. This has been made possible because the Department has maintained high standard in training its students through its main activity areas of teaching, research, consultancy and service to community.

Staffing of the Department

The Department continues to have inadequate number of academic staff. With the full stream of students under the newly introduced BSc. Agribusiness programme, academic staff in the

Department are over-stretched. Also, during the year under review, Mr. K. Osei-Agyemang, was retained on contract and Mr. Fred Nimoh was granted study leave to pursue PhD Degree in Development Economics at the University of Copenhagen, Denmark. The Department urgently needs lecturers in the specific fields of Agribusiness Management, Statistics/Biometry and Resource Economics. In order to continue to mount postgraduate programmes (MPhil. and PhD) in Agricultural Economics and new ones in Rural Development and Agribusiness Management, there is an urgent need to improve staff capacity through a combination of further (PhD) training and aggressive recruitment. To improve upon income generation in particular, the Department requires the services of a full-time research fellow to coordinate our research activities and make the Department more competitive in bidding for and executing technical consultancies.

The current staffing situation is as follows:

Teaching staff

K. Ohene-Yankyera - Senior Lecturer/**Head**.
S. C. Fialor - Senior Lecturer.
J. A. Bakang - Senior Lecturer.
K. Osei-Agyemang - Senior Lecturer.
G.K. Nurah - Lecturer.
Patrick Appiah - Lecturer.
M.T. Asiamah - Lecturer.
D. Anwunyo-Vitor - Lecturer.

Fred Nimoh - Lecturer, **on study leave**.
Victor Owusu - Lecturer.
Robert Aidoo - Lecturer.
J. Osei Mensah - Lecturer.
+Collins K. Osei - Research fellow, Institute of Distance Learning, KNUST.
***Saa Dittoh, Associate Professor**
+ Part-time lecturer
***On sabbatical leave from Univ. for Dev. Studies**

Non-teaching staff

The Department has four non-academic staff comprising one Technician, one Snr. Administrative Assistant, one messenger (on study leave) and one cleaner. The Department urgently requires three Technicians (with HND or BSc. qualification) to handle field work, data entry and audio-visuals for teaching, research and outreach activities.

TEACHING AND RESEARCH ACTIVITIES

A summary of the activities of the Department during the year under review in the areas of teaching, research and consultancies, and service to the community is as follows:

Teaching

The Department continued to play its role in training students of the Faculty of Agriculture in the 4-year composite BSc. Agriculture Degree programme. Teaching activities under the BSc. Agribusiness management programme in the Department also continued.

Undergraduate programme/courses

The Department currently offers a total of 34 courses in Agricultural Economics, Farm management, Extension Education, Rural Sociology, Accounting, Statistics and Computer Science. Twelve of these courses are compulsory courses for the first three years of the BSc. Agriculture Degree programme. Management and entrepreneurial skills are offered for all final year students of the Faculty of Agriculture, while many other courses are offered as service courses to students in other Colleges (Engineering, Science, and Architecture and Planning). Except a few, all the courses in the 4-year BSc. Agribusiness Management programme are handled by academic staff in the Department.

Postgraduate programme/courses

The Department's PhD and MSc. Programmes in Agricultural Economics continue to attract a large number of students from Ghana and abroad. During the year under review, the MPhil programme in Agric. Economics was oversubscribed. Plans to introduce postgraduate programmes in Agribusiness Management, Rural Development and Agricultural Extension are underway.

Research

Activities within the Department's Outstation Research Unit in the Ejura-Sekyedumasi District in the Ashanti Region continued to focus mainly on:

1. The generation of data on commodity prices, storage and transportation costs
2. Identification of source and destination markets of agricultural produce carted from the District
3. The role of food crop traders' association, especially with regards to storage and transportation of produce and price information.

However, the Outstation activities continue to face a number of challenges including low caliber of technical staff, inadequate supervision and lack of adequate funds in general and means of transportation in particular. Senior members in the Department continued to collaborate with colleagues in other Departments to provide the necessary socio-economic input into research within and outside the Faculty.

During the year under review, the Department was contracted by the UN World Food Programme (Ghana office) to conduct a baseline survey in the Ashanti and Northern Regions of Ghana on the production, handling and marketing of maize, rice and cowpea under the Purchase for Progress (P4P) Programme. The Department continues to provide technical support to the IITA's *N2 Africa Project* which aims at putting biological nitrogen fixation to work for smallholder farmers in the three Northern Regions. The Department is supporting the monitoring and evaluation aspect of the project through socio-economic data entry, data cleaning and data management.

Current research issues being worked on by senior members of the Department either independently or in collaboration with others, and in varying stages of implementation, are as follows:

Dr. K. Ohene-Yankyera

1. Analysis of Consumer behavior
2. Analysis of yam quality and its effect on yam prices
3. Yam marketing margins and impediments to the efficiency of yam marketing in Ghana

4. Economics of seed yam production in Ghana
5. Determinants of credit access and use among farmers in Ghana
6. Cotton production and its contribution to farm income in Northern Ghana
7. Business planning, feasibility studies and investment appraisal/analysis

Dr. J. A. Bakang

1. Adoption of agricultural technologies in Ghana
2. Effective methods of disseminating agricultural extension messages to farmers in Ghana
3. Yam marketing margins and impediments to the efficiency of yam marketing in Ghana
4. Economics of seed yam production in Ghana

Mr. K. Osei-Agyemang

1. Measuring the Effects of Activity Cost on Optimal Expenditure Levels in Cabbage Production for Transition and Forest Ecological Zones in Ghana;
2. Empirical Analysis of Productivity and Resource Use Efficiency in Ghana's Cocoa Industry;
3. Trend Analysis of the Poultry Sector in Ghana;
4. Market Demand for High Quality Cassava Flour in Ashanti and Brong Ahafo Regions.

Dr. S.C. Fialor

1. Agricultural and Food Marketing Analysis in Ghana;
2. Agricultural Policy Analysis;
3. The Effects of *Aflatoxins* on the Market Value of Selected Food Commodities in Ghana;
4. Profitability of Soya and Maize Cropping Systems in Upper West Region of Ghana.

Dr. Victor Owusu

1. Development Economics, Environmental Economics, Impact Evaluation of Poverty Reduction and Food Security Interventions in Ghana;
2. Consumer preference for Improved Local Rice in Ghana;
3. Impact of Adoption of Yam Storage Technologies on Household Food Security in Ghana;
4. Impact of Agroforestry Management Technologies on Productivity of Cocoa Farmers in Ghana;
5. Farm Labor Allocation and its Effects on Integrated Pest Management Adoption Rate in Ghana;
6. Economic Viability of Cocoa Agroforestry Management Systems in Ghana;
7. Soil Conservation, Shadow Wages and Labour Supply of Agricultural Households in Rural Ghana.

Dr. G. K. Nurah

1. The Economics of Agricultural Production in Ghana;
2. Food and Agricultural Policy Analysis;
3. Development of Agricultural Profiles of Selected Districts in Ghana.

Dr. Robert Aidoo

1. Agricultural Commodity Value chain analysis (e.g. Analysis of Ghana's cocoa value chain and grain legume value chain)
2. Empirical estimation of factors affecting consumption of poultry products in Ghana
3. Assessment of farmers' willingness to adopt crop insurance as a risk management strategy
4. Economics of seed yam production in Ghana
5. Analysis of urban food consumption patterns
6. Assessment of technical efficiency in Ghana's cocoa industry
7. Consumers' willingness to accept cassava bread in Ashanti Region of Ghana
8. Baseline surveys (Cocoa farmers in Western Region & Maize, Rice and Cowpea farmers and traders in Ashanti and Northern Regions)
9. Study on the use of Landraces Accessions in Breeding Programmes in Ghana
10. Business planning, feasibility studies and investment appraisal/analysis

Mr. Patrick Appiah

1. Effect of fertilizer subsidy on maize production in northern Ghana
2. Perceived Effects of HIV/AIDS Pandemic on Fishing-Related Livelihoods in the Greater Accra Region of Ghana
3. Assessment of the Influence of Business Loans on Socioeconomic Status of Women Beneficiaries of Credit Unions in the Kumasi Metropolis
4. Effects of Farmer Support Programmes on Maize Production: The Case of the Millennium Development Authority Programme in the Sekyere East District of Ghana
5. Awareness and Knowledge Level of Swine Flu among Pig Farmers in the Ashanti Region of Ghana
6. Rabbit Technologies: Adoption Studies in the Ashanti Region of Ghana

Mr. Maxwell T. Asiamah

1. Assessing the Value Chain of Pork;
2. Determination of Technical Efficiency of Rice Farmers in the Ejisu-Juaben Municipality

Mr. Fred Nimoh

1. Sustainable sanitation studies in the Dangme West District in the Greater Accra Region of Ghana. identifying existing barriers to improved sanitation and propose business models for providing hygienic latrine technologies and waste management solutions that can be used in poor, rapidly urbanizing townships in Ghana
2. Effect of Formal Credit on the Performance of the Poultry Industry – Case Study of Urban and Peri-urban Kumasi
3. Factors Influencing the Performance of Entrepreneurs in the Kumasi Metropolis of Ghana
4. Factors Affecting the Adoption of Upland NERICA Rice in the EjuraSekyedumase District in the Ashanti Region of Ghana
5. Baseline surveys

Mr. J. Osei Mensah

1. The Status of Total Quality Management (TQM) in Ghana; a Comparison with Selected Quality Awards Winners from Turkey.
2. TQM in Ghana: Critical Success Factors (CSF), and a Model for Implementation of Quality Revolution in Ghana.
3. Consumers' Use and Understanding of Food Label Information and Effect on their Purchasing Decision in Ghana.
4. Assessing Farmers' Satisfaction of the Services Received from Agronomic Input Dealers Using the SERVQUAL model.
5. The Impact of World Food Programme's Purchase for Progress (P4P) on the livelihood of farmers and Performance of Farmer Based Organization.
6. An assessment of the Performance and the Economic Viability of Street Food Vending (SFV) in Ghana and Impact of Policy Strategies on the Performance of SFV.

Mr. D. Awunyo-Vitor

1. Agricultural Finance – Access to Financial Services, Determinants of Loan Repayment by Farmers;
2. Operations of Ghana Stock Exchange – Effect of Share Concentration on the Performance Listed Firms.

MAJOR SERVICE TO COMMUNITY

As the extension wing of the Faculty of Agriculture, the execution of outreach programmes continues to be undermined by lack of vehicle in the Department. However, individuals continued to offer services to the community in various capacities. The Department continued to provide general short-term technical, advisory and consultancy services to a wide variety of clients in the form of training, baseline surveys, agricultural project monitoring and evaluation, impact assessment and feasibility studies, among others. The Department has been central to the College's training programmes in Value Chain Development and Adaptive Management of Natural Resources.

Dr. K. Ohene-Yankyera was the Head of Department during the year under review. He continued to serve on both Faculty and College Boards.

Dr. J. A. Bakang continued to serve as the Departmental representative on the Faculty and College Boards.

Dr. S.C. Fialor was appointed as the Hall Tutor for the University Hall during the year under review.

Dr. G.K. Nurah was appointed as the Chairman of the postgraduate committee at the Department.

Mr. Maxwell T. Asiamah was appointed the Chairman of the Vacation training Committee at the Faculty of Agriculture.

Dr. Robert Aidoo was appointed the Coordinator of Vacation training for the Department of Agricultural Economics, Agribusiness and Extension. He was also appointed as the Coordinator for the Environment and Climate Platform under the Building Stronger Universities Programme being implemented jointly by KNUST and DANIDA. Robert is also serving on the postgraduate committee at the Department. He is currently one of the patrons for the newly formed Agribusiness Students Association in the Faculty of Agriculture.

Dr. Victor Owusu continued to serve as the Departmental Examinations officer and a member of the postgraduate committee at the Department. He also serves as the seminar coordinator for the Department.

Mr. Patrick Appiah continued to serve as the Examinations officer for the Faculty of Agriculture.

Mr. J. Osei Mensah was appointed as one of the patrons of the newly formed Agribusiness Students association at the Faculty of Agriculture.

CONFERENCES/WORKSHOPS/SEMINARS

1. Dr. Robert Aidoo attended the **Food Studies Conference** (an interdisciplinary conference) at the University of Nevada, Las Vegas, USA from 9-10 December, 2011. He made a presentation on the topic: *Away from Home Food Expenditure Patterns in Ghanaian urban communities: Effects of Income, Gender and Household demographics*. The paper, which he co-authored with Dr. K. Ohene-Yankyera and Mr. Vincent Abankwah, has been accepted for publication in the *Food studies Journal* published by Common Ground Inc., USA.
2. Dr. Robert Aidoo attended the **West Africa Root and Tuber Crops Conference** organized by the West African Agricultural Productivity Programme (WAAPP) from 12-16 September, 2011 at Mensvic Grand Hotel, Accra-Ghana. He presented two papers which he co-authored with his colleagues in the Department. The titles were:
 - a. *Yam Consumption Patterns in Urban Ghana: Effects of Household size and Seasonality*, and
 - b. *Seed Yam Demand and Supply Gap in Ghana: Implications for Commercialization of Seed Yam Production*.
 - c. These papers have accepted for publication in the *Ghana Journal of Agricultural Science*.

COLLABORATION/PARTNERSHIPS

During the year under review, the Department collaborated with and had partnerships with a number of institutions:

1. **KNUST-DANIDAPARTNERSHIP –**

In response to the DANIDA call for applications in 2011 for the Pilot Research Cooperation Programme (PRCP) between Ghana and Denmark, the Department's proposal on the above topic was selected for support. The Head of Department (Dr. K. Ohene-Yankyera) and the Provost of the College of Agriculture and Natural Resources (Prof. R.C. Abaidoo) visited Danida center in Denmark from 17-24 October, 2011 for discussions on the project. This led to the development of **Research Project titled Enhancing the performance and growth potential of street-food vending for accelerated socio-economic development in Ghana**. The contract for the collaboration has since been signed and Two (2) MSc. and three (3) PhD students have been recruited under the project to be trained jointly by KNUST and a Danish University. The budget for the project is DKK 5 MILLION.

2. **KNUST-DANIDA PARTNERSHIP – Sustainable Sanitation-Ghana Project (SUSA)**
 The Department is in collaboration with DANIDA to carry out sustainable sanitation studies in the Dangme West District in the Greater Accra Region of Ghana. The SUSA-Ghana Project aims to identify existing barriers to improved sanitation and propose business models for providing hygienic latrine technologies and waste management solutions that can be used in poor, rapidly urbanizing townships in Ghana. The capacity building component of the Project has five PhDs (Socio-cultural, Engineering/Technology, Occupational Health Safety, Business/Economics, and Monitoring). Currently, one of our Senior Members (Mr. Fred Nimoh) has been offered a fellowship under the project and is pursuing PhD Degree in Development Economics at the University of Copenhagen, Denmark. He is working on the Business/Economics aspect of the SUSA project. Also, one (1) student is pursuing MPhil Degree in Agricultural Economics at our Department with financial support from the project.

3. **KNUST-IFPRI RESEARCH COLLABORATION –Research Title: Economic viability of climate change mitigation through the use of *biochar* in the Ashanti Region of Ghana.**
 On 23rd day of March, 2012, the Department entered into a research agreement with the International Food Policy Research Institute (IFPRI) to investigate the economic viability of using *biochar* as an amendment to increase agricultural productivity and as a tool that provides climate change mitigation services. The contract, which will expire in December 2012, has a total budget of US \$25,000. Currently, the project is supporting the research activities of one (1) MPhil Student in the Department.

4. **KNUST-UN WORLD FOOD PROGRAMME PARTNERSHIP: Project Title: Purchase for Progress (P4P) Project.**
 In 2011, the Department was contracted by the UN World Food Programme, Ghana office to conduct a baseline survey in the Ashanti and Northern Regions on the production, handling and marketing of maize, rice and cowpea. Following an excellent execution of the assignment, a Memorandum of Understanding (MoU) has been signed between the Department and the World Food Programme (Ghana office) to carry out follow-up surveys and case studies on the activities of Farmer Based Organizations and individual maize, rice and cowpea farmers in the Ejura-Sekyedumase District, Tamale Metropolis and Tolon-Kunbungu District in Ghana over the next three years.

5. **PARTNERSHIP BETWEEN KNUST AND BERN UNIVERSITY OF APPLIED SCIENCES, SWITZERLAND.**
 In the year 2011, the Department of Agricultural Economics, Agribusiness and Extension was approached by the Department of International Agriculture of the School of Agricultural, Forest and Food Sciences (HAFL) at Bern University of Applied Sciences, Switzerland to discuss the possibility of a partnership. Following some initial discussions, one (1) MSc. student from the Department of International Agriculture at Bern University of Applied Sciences visited Ghana for a period of three months (August – October, 2011) to study the Ghanaian cocoa value chain under the supervision of Dr. Robert Aidoo. Preparations are far advanced to get some publications with the student and two other supervisors in Switzerland.

Also, Dr. Robert Aidoo of our Department and one of the academic staff at the Department of International Agriculture at Bern University (Dr. Ingrid Fromm) have jointly prepared and submitted a research proposal to jointly conduct research on “*Promoting sustainable production methods and socio-environmental certifications among small-scale cocoa farmers in Ghana.*” This proposal was in response to the Swiss Development Cooperation’s call for application under the KFH Programme: *Promotion of Research Partnerships between Swiss Universities of Applied Sciences and Developing and Transition Countries.* The proposal has passed the first stage and a full proposal has been submitted. When approved, staff and postgraduate students from KNUST and Bern University of Applied Sciences will have their capacities developed through exchange programmes and through collaborative research activities. Also, cocoa farmers would be trained on sustainable cocoa farming methods and cocoa certification to improve cocoa output, farm income and overall livelihoods of the farmers.

DEPARTMENT OF ANIMAL SCIENCE

INTRODUCTION

The Department of Animal Science is one of the four academic Departments that constitute the Faculty of Agriculture. The mission of the Department is to provide instruction, conduct research and extend knowledge and technology in Animal Science. The Department is located on a 40-hectare plot of land. The Department has two sections; Poultry and Livestock Sections. The Department also has Nutrition and Veterinary Diagnostic Laboratories which provide services for teaching and research.

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 visited the various sections of the farm during the year.

The Department operates a model farm established with the grant from FINATRADE Group of Companies. Students continue to have practical hands-on experiences of raising broilers and fattening pigs. The project has more than doubled the grant it was given through continuous production of birds.

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

Animal 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 as far as Sefwi in the Western Region.

UNDERGRADUATE AND POSTGRADUATE PROGRAMMES OFFERED BY THE DEPARTMENT

The Department contributes to the training of students who are awarded a composite BSc degree in Agriculture. However, students in the fourth year specialize in Animal Science where they are instructed in-depth in various disciplines of animal science and do a dissertation related to animal production, breeding or nutrition and management. The Department offers postgraduate training leading to the award of MSc, MPhil or PhD degrees in the area of Nutrition, Reproductive Physiology, breeding and genetics. Currently only Master's programme is offered for Meat Science.

STAFF MEMBERS

*Daniel Boye Okai - Professor	Paul Kofi Karikari - Senior Research Fellow
*Stephen Albert Osei- Professor	Victoria Attoh-Kotoku (Mrs.) - Lecturer
†Armstrong Donkoh- Professor	Worlah Akwetey - Lecturer
*Comfort Cecilia Atuahene - Professor	Christopher Antwi - Lecturer
Emmanuel Lartey Kwame Osafo - Associate Professor / Head of Dept	Kwaku Adomako- Lecturer
*Oscar Simon Olympio- Senior Lecturer	*Michael Boateng – Lecturer
* On Contract	
† On Sabbatical	

MAJOR RESEARCH BY DEPARTMENT AND STAFF

The Department continued with its drive to explore alternate feed resources for feeding livestock in a more efficient way. Currently it is collaborating with BEST, Canada in testing a probiotic for feeding livestock in tropical environment more efficiently. The Department collaborates with several departments within the University as well as outside it. The Department in conjunction with the CSIR-CRI is currently undertaking a USD 1.2 million project on the crop-livestock interaction in the tropics. The Department is working with Akate Farms in developing local naked necked and frizzled feathered birds for meat and eggs.

The research interests of the academic staff of the Department are as outline below:

Prof. D. B. Okai

1. Utilization of exogenous enzymes in pig and poultry diets in Ghana – A case study of the Ashanti and Greater Accra regions.
2. Dawadawa (*Parkiabiglobosa*) fruit pulp as a feed ingredient in swine diets.
3. Improving the nutrient composition and nutritive value of cassava peels using slaughter house by-products.
4. On –farm feeding trial using Direct-Fed-Microbials / Probiotics.

5. Nutrient composition and nutritive value of new feed resources: water melon rind and pawpaw peels.
6. Methods of swine manure disposal in the Ejisu-Juabeng district of the Ashanti Region.

Prof S. A. Osei

1. The growth performance of broiler chickens fed on Cotton seedmeal
2. Response of broiler chickens fed on diets containing *Annatoleaf* meal
3. Dietary synthetic methionine effects on broiler performance
4. Analysis of the performance of Lohmann layers and breeders raised in Ghana
5. Effects of diet-fed microbials on the performance of layers and breeders

Prof. C. C. Atuahene

1. Evaluation of unconventional feeds as poultry feed

Dr. O. S. Olympio

1. Cash Flow Budget for commercial Layer and Broiler farms using Microsoft Excel.
2. Financial losses caused by egg breakages on a commercial farm.
3. Reformulation of a commercial Broiler, Layer and Parent stock ration using Microsoft Excel Solver.

Prof. E. L. K. Osafo

1. Nutritional evaluation of four varieties of Napier grass at different harvesting dates.
2. Studies on prolonging shelf-life of wagashi – a soft cheese.
3. Exotic dogs as companion animals in Accra and Kumasi.
4. Screening indigenous feedstuffs for greenhouse emissions potential.

Mr. P. K. Karikari

1. A study of drinking yoghurt using different levels of sodium benzoate as a preservative.
2. Feed intake and growth performance of weaner and female adolescent rabbits fed a blended leaf meal of *Chromolaenaodorata*, *Gliricidiasepium* and *Leucaenaleucocephala*.

Dr (Mrs.) V. Attoh-Kotoku

1. Evaluation of leaf proteins as feed for livestock

Mr. Worlah Akwetey

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

Dr. Christopher Antwi

1. Screening of indigenous feedstuffs that have the potential of mitigating greenhouse emissions
2. Leguminous fodder and cereal crop residues' utilization by small ruminants in the Atebubu and Amantin Districts.

Dr Kwaku Adomako

1. Genetic evaluation of naked-necked and frizzled feather chickens for commercial production.

Dr. Michael Boateng

1. Feed additives for enhancing production of pigs and other livestock
2. Utilization of agro-industrial by products as feed for livestock
3. Organic livestock production

MAJOR SERVICE TO THE COMMUNITY

Several members of the Department continue to serve in various capacities on boards outside the Department as indicated below.

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

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

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

Prof. E. L. K. Osafo is the Head of Department of Animal Science. He is a member of National Sub-committee CODEX on Ad hoc intergovernmental Task Force on Animal Feeding.

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

Dr (Mrs) V. Attoh-Kotoku continues to be the Assistant Faculty Agriculture Examination Officer and currently the Head of Livestock Unit. She is also a reviewer of Ghanaian Journal of Animal Sciences.

Mr. W. Akwetey is the sectional Head of the Meat Science and processing unit of the Department of Animal science.

Dr. Christopher Antwi is the Head of the Animal Nutrition Laboratory and a member of Agriculture Institute of Canada Climate Change Task Team. He continues to serve as the secretary of the Editorial Secretariat of the Ghanaian Journal of Animal Science.

NAMES OF ORGANIZATIONS AND PERSONS WHO HAVE MADE DONATIONS TO THE DEPARTMENT IN 2011

The Department received an amount of USD 44,000 as a donation from Beauchemin-McGinn Award of Excellence in Agriculture. The money has been invested and the interest accruing would be used to as scholarship to support female postgraduate education in animal science relating to the environment and sustainable agriculture. Evonik, a major producer of Animo Acids has donated samples of animo acids for research purposes in livestock feeding. BEST, Canada, a company that deals with probiotics has also given a grant of US 45,000 for research into the use of RE3 in livestock feeding.

DEPARTMENT OF CROP AND SOIL SCIENCES

INTRODUCTION

The Department of Crop and Soil Sciences is one of the four Departments of the Faculty of Agriculture. The courses offered at the Department provide students with excellent knowledge and practical skills, and with options for specialisation in Soil Science, Plant Breeding, Plant Protection, and Agronomy. The Department at the moment runs a 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 Insectory, Plant-houses, teaching/research and model farms with cocoa, coffee, rubber, coconut, citrus, and oil palm plantations.

Undergraduate and Graduate Programmes

The Department continues to contribute to the running of the composite BSc (Agriculture), BSc (Post Harvest Technology), BSc (Landscape Design & Management), BSc (Meat Science) and BSc (Agric Biotechnology) degree programmes through a number of courses it offers. BSc Agriculture (Crop and Soil Sciences Option) students conduct research in Agronomy/Crop Physiology, Plant Breeding and Genetics, Soil Fertility, Plant Nutrition, Forage Crop Production and Management, Entomology, Plant Pathology, Nematology and Biotechnology (Tissue culture) for their dissertation in partial fulfillment for their degrees. A four-year BSc Agriculture (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 42 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 has continued to train 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 began in the 2010/2011 academic year. The research conducted by the postgraduate students aims at solving basic crop and soil problems as well as building their capacity. During the period under review, 23 students completed their postgraduate studies.

STAFF MEMBERS

#R.T. Awuah- Professor

*Rev. Fr. Mensah Bonsu - Professor

*E.Y. Safo - Associate Professor

*C. Quansah- Associate Professor

R. Akromah- Associate Professor

E. Asare - Senior Lecturer
+J.V.K. Afun - Senior Lecturer
J. Sarkodie-Addo - Senior Lecturer (Head of Dept.)
C. Kwoseh- Lecturer
A. Opoku - Lecturer

T. Adjei-Gyapong - Lecturer
S. Duku, (Mrs.)- Lecturer
E.A. Osekre - Lecturer
V. Logah- Lecturer
N. Ewusi-Mensah - Lecturer

On Leave without pay + On Sabbatical Leave; *On Contract

MAJOR RESEARCH ACTIVITIES

Prof. Rev. Mensah Bonsu.

1. Carbon Sequestration under different land use systems.
2. Soil Fertility management and Greenhouse Gas Emissions.
3. Assessment of soil heterogeneity using geostatistics and scaling techniques.
4. Development of drought indices for some tropical crops
5. Development of activity data and emission factors for greenhouse gases inventory in Ghana.
6. Use of soil amendments for improving hydro-physical behavior of some tropical soils.
7. Development of salinity index for rice cultivation.

Prof. C. Quansah:

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

Prof. Richard Akromah

1. Transfer and genetics of fresh seed dormancy in peanuts
2. Marker-assisted selection of ACMV-Resistant lines in Cassava.
3. Crossability studies in the NERICAS (New Rice for Africa).
4. Screening for tomato yellow leaf curl virus resistance in exotic and local tomato germplasm.
5. Transfer and inheritance of pod shattering in soybean.

Dr. Joseph Sarkodie-Addo

1. Bambara groundnut agronomy and environmental responses.
2. Soybean Nitrogen fixation.
3. Mulching in Cassava production.

Dr. Charles Kwoseh

1. Host plant resistance studies of nematodes, fungi and viruses
2. Integrated pest/disease management
3. Evaluation of phytochemicals/essential oils for nematodes and disease management
4. Airborne fungi in indoor and outdoor environments
5. Seed Pathology
6. Fungi and bacteria contaminants in drinking water
7. Diversity of nematodes in farming systems

Thomas Adjei-Gyapong

1. Distribution of Macro-nutrient (Fe, Ma, Zn and Cu) in the Ashanti Region.
2. Simulating site specific optimal fertilizer recommendation for maize production in Ghana.
3. Soil fertility evaluation of selected inland valleys in Ghana.
4. Site characterization of farmlands and experimental sites.

Dr. E. Asare

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

Dr. E.A. Osekre

1. The use of botanicals for the control stored product insect pests.
2. Evaluation of some accessions of eggplant for their resistance/tolerance to field insect pests.

PARTICIPATION IN CONFERENCES/WORKSHOP/SEMINARS

Prof. C. Quansah

Quansah, C. and Anku, S.E. (2011). The Ghana Strategic Investment Framework (GSIF) for Sustainable Land Management (SLM): A brief overview. A paper presented at the Validation Workshop and Donor's Conference on the Ghana Strategic Investment Framework (GSIF) for Sustainable Land Management organized by the Environmental Protection Agency (EPA) Ministry of Environment, Science and Technology (MEST). La-Palm Royal Beach Hotel, Accra, June 1-2, 2011.

Quansah, C. and Nutsukpo, D. (2011). The components of the Ghana Strategic Investment Framework (GSIF) for Sustainable Land Management (SLM). A paper presented at the Validation Workshop and Donor's Conference on the Ghana Strategic Investment Framework (GSIF) for Sustainable Land Management organized by the Environmental Protection Agency (EPA)/ Ministry of Environment. Science and Technology (MEST). La-Palm Royal Beach Hotel, Accra, June 1-2, 2011.

Quansah, C. (2011). The role of forests and other vegetative cover in sustaining ecosystem functions and their contribution to soil and water conservation in the interior savanna zone dry land of Ghana. A paper presented at the National Desertification Forum organized by Environmental Protection Agency (EPA)/Ministry of Environment, Science and Technology (MEST). Upland Hotel, Wa-Upper /West Region, June 16, 2011.

Dr. C. Kwoseh

Kwoseh, C., Adjei-Gyapong, T. and Sarkodie-Addo, J. (2012). Participatory technology development in managing "browning of onion leaves disease" in the Brong-Ahafo Region of Ghana. Presented in Sunyani, Regional Ministry of Agriculture **Conference** room, January, 2012.

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

Consultative meeting on the establishment of a National Plant Variety Protection System: Prospects for Research and Development. CSIR-Science and Technology Policy Research Institute, Accra, 21st – 23rd March, 2011.

Dr. E.A. Osekre

Seminar on Report of the committee for vetting of examination questions on 13th April, 2011.

Workshop for all examiners on the conduct/management of examinations on 15th April, 2011.

Dr. V. Logah

V. Logah, F.K.M. Tetteh, E.Y. Safo, C. Quansah and I. Danso. (2011). Comparative Evaluation of Short Term Organic Carbon Sequestration under Different Nutrient Managements during Cropping Cycles on a Ferric Acrisol in Ghana. In: Li Xuan (ed.), International Proceedings of Chemical, Biological and Environmental Engineering, *International Conference on Environment and Industrial Innovation*, 17 -19th June, 2011, Kuala Lumpur, Malaysia, pp. 308 – 312

Workshop for all examiners/Senior Members on the conduct/management of examinations held on 15th April, 2011.

Seminar on Report of the Committee for Vetting of Examination Questions on 13th April, 2011 organised by College of Agriculture and Renewable Natural Resources.

CONFERENCE PAPERS

Logah, V., Tetteh, F.K.M, **Safo, E.Y.**, **Quansah, C.** and Danso, I. (2011). Comparative Evaluation of Short Term Organic Carbon Sequenstration under Different Nutrient Managements during Cropping Cycles on a Ferric Acrisol in Ghana. International Conference on Environment and Industrial Innovation IPCBEE vol. 12. IACSIT Press, Singapore, 308 – 312.

COLLABORATION:

The Department continued its collaboration with:

- a. Agribusiness for Sustainable Natural African Plant Products (ASNAPP)
- b. The International Atomic Energy Agency (IAEA), Vienna, Austria and the Biotechnology and Nuclear Agricultural Research Institute (BNARI), Kwabenya.
- c. International Institute of Tropical Agriculture, Ibadan, Nigeria
- d. Soil Research Institute and Crop Research Institute of CSIR, Kumasi.
- e. Ministry of Food and Agriculture (MOFA), Ghana.

New collaboration

The Department established new collaborations with the following:

- a. Department of Agriculture, University of Guelph, Canada under Faculty Exchange Programme.
- b. Alliance for a Green Revolution in African (AGRA), Bill Gates Foundation and The Rockefeller Foundation, Nairobi, Kenya in the establishment of Postgraduate in
- c. Plant breeding and Seed science Centre.
- d. United States Department of Agriculture, Faculty Exchange Programme on New
- e. Plant Sanitary and Phytosanitary Issues.
- f. Department of Plant Pathology, The Ohio State University, OARDC, USA on
- g. International Plant Diagnostic Activities sponsored by IPM Collaborative Research Support Programme (CRSP).

GRANTS TO THE DEPARTMENT

The Department various grants to support academic and research activities including the following:

- i. A US\$ 387,000 from the Alliance for a Green Revolution in Africa (AGRA) to train 10 MSc students in plant breeding and Seed Science and Technology. The students are nationals of Ghana (6), Liberia (2) Sierra Leone (1) and Niger (1). The funds are being used to pay for the scholarships of the students and to refurbish and strengthen existing laboratory infrastructure for research. A second Cohort to train 10 students has also been approved for funding by AGRA at a cost of US\$334,000 for students from Ghana, Mali and Niger. A special PhD in Soil Science degree for 20 foreign and local students has also begun in the Department, funded by AGRA at a cost of US\$2,100,000.
- ii. A GH¢47,000 Tomato improvement project from the Ministry of Food and Agriculture. This is a 3-year project of which the first year's payment of GH¢11000 has been made by the Ministry.
- iii. A GH¢34000 for Soil Fertility Management Technologies for Efficient and Profitable Production of cocoyam comels and leaves from the Root and Tuber Crops Improvement and Marketing Project (a GoG/IFAD-sponsored project).
- iv. A GH¢5700 for in vitro conservation of root and tuber crops from the Root and Tuber Crops Improvement and Marketing Project (a GoG/IFAD-sponsored project).
- v. A US\$21000 integrated management of onion leaf browning disease project from the Food and Agriculture Budgetary Support (FABS) implemented by the Ministry of Food and Agriculture, Ghana.

MAJOR SERVICE TO THE COMMUNITY

Rev. Prof. Mensah Bonsu

Review of Manuscripts for Journal of Science and Technology, KNUST and Journal of Natural Sciences, University of Cape Coast. External Assessor for Theses, Department of Crop and Soil Sciences, Faculty of Agriculture, University of Ghana, Legon and School of Agriculture, University of Cape Coast. Chairman, Promotions Committee of Cocoa Research Institute of Ghana (CRIG). External Assessor of Promotions to Senior Research Scientists, CSIR – SARI and

SRI. Priest-in-charge, ArchBishop Cranmer Anglican Church, KNUST. Member, Anglican University College of Science and Technology Planning Committee.

Prof E.Y. Safo

Has been the Chairman for many of the postgraduate oral examinations on behalf of the Dean, School of Graduate Studies. He was appointed the Chairman of the Internal Accreditation Team for the College of Sciences in 2011/2012 academic year.

PROF. C. QUANSAH

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

Prof R. Akromah was appointed the Dean of Faculty of Agriculture on August, 17th 2011 and a representative of KNUST on the Academic Board of the Graduate School of Governance and Leadership in Accra which is affiliated to KNUST from 1st November, 2011 to 31st October, 2013. He is a project leader of the KNUST – Masterfoods USA Cocoa-Natural Plant Products Intercropping Model and Co-ordinator of the AGRA (Alliance for a Green Revolution in Africa) MSc Programme in Plant Breeding and Seed Science, which is training 10 students from 5 West African countries.

Prof. R. Akromah and **Dr. E. Asare** continued to offer part-time lecturing services in Crop Physiology and Plant Breeding respectively to the University of Education, Winneba, Mampong Campus. They are also collaborators with **Prof. C. Quansah** on the Agribusiness for Sustainable Natural African Plant Products (ASNAPP) project on the conservation and utilization of selected medicinal plants.

Dr. J. Sarkodie-Addo involved in onion agronomy and pathology for Brong Ahafo Region. He also part of the team collecting both local and international germplasm for tomato improvement. Review of manuscripts for Journal of Science and Technology. Kumasi, and Ghana Science Association Journal. He is the Pastor of the Deeper Life, Chairman and Member of Vice-Chancellor Committees of investigation. Member of Health Management and Services Board, Dean of Students Board, Welfare Services. Board, Transport Management Organisation Board. Chairman, Committee of Hall Administrators. Member, Council of Convocation. Campus Fellowship, KNUST.

Dr. Charles Kwoseh is the Co-ordinator of the Plantation/Arable Crops Section Vacation Practical Training of the Department of Crop and Soil Sciences. Have moderated examination questions and marking schemes for two Polytechnics. He is also the College of Agriculture and Natural Resources representative on the Senior Members Housing Committee. Review

manuscripts for JUST, Journal of Ghana Science Society and Agricultural and Food Science, Journal of Ghana. Principal Investigator in training farmers in integrated crop management for sustainable onion production in the Brong-Ahafo Region. Trained farmer groups on capacity building, integrated pest management, value addition and marketing strategies for MCA-MiDA. Trained farmer groups in group formation and capacity building in maize/cassava production, value addition and marketing in the Sekyere Afram Plains District of the Ashanti region. (MCA-MiDA PROJECT). Currently, the Chairman of the Agric. Staff Welfare Scheme of KNUST.

Dr. E.A. Osekre

Representative of the TALIF Committee for the Department. Reviewed two papers for publication in the KNUST's JUST Journal.

Mr. T. Adjei-Gyapong is a team member of Participatory Technology Development for Sustainable production of Root and Tuber Crops (Cassava, yam and Cocoyam) in the Ashanti Region – under the MOFA/IFAD Root and Tuber Crops Improvement and marketing programme (RTIMP). Contributed to the development of Training Manual for Community landuse planning under FAO/MOFA project (TCP/GH/310(D)). Conducted Soil Resource surveys of four communities (Nambeg, Yagha, Tongo and Kuselle) in the Upper West Region under the Integrated Community Land management and soil fertility improvement in the Upper West Region of Ghana (TCP/GH/3101(D)). Participated in training farmers in integrated crop management for sustainable onion production in the Brong-Ahafo Region. Supports training tour of International travel course for students of Iowa State University in Ghana. Co-ordinator of production operation at Anwomaso Research Farm. Trained farmers in group formation and dynamics and Business production capacity building in Sekyere East and West Districts in the Ashanti Region (MCA – MiDA Project).

Dr. V. Logah

Reviewed of two papers for International Research Journal of Agricultural Science (IRJAS) and International Journal of Plant Physiology and Biochemistry (JPPB). Internal Coordinator, Department of Crop & Soil Sciences' Finatrade Model Farm

DEPARTMENT OF HORTICULTURE

INTRODUCTION:

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

ACADEMIC STAFF:

Dr. B.K. Maalekuu - Senior Lecturer (Head of Department

* Prof. P.Y. Boateng - Associate Professor

* Prof. (Mrs.) N.S. Olympio - Associate Professor

Mr. P.Y. Adjei - Senior Lecturer

Dr. B.K. Banful - Senior Lecturer

Mrs. H.V. Adzraku Lecturer
Dr. (Ms). L. Atuah- Lecturer
Mr. P. Kumah- Lecturer

Mrs I.A. Idun - Lecturer
Mrs. P.D. Kaledzi - Lecturer
Mr. F. Appiah- Lecturer

*On Contract
#On Study Leave

TEACHING

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

The Department's graduate programmes attract applicants from all the five public universities and other research outfits. Regarding the year under review nine (9) applicants were offered admission to the various programmes.

At the Distance Learning, thirty-two (32) applicants were admitted to study the MSc Postharvest Technology.

STAFF RESEARCH ACTIVITIES

Staff continue to conduct research in their respective areas of specialization. Examples of research topics under investigation are as follows:

Dr. B.K. Maalekuu

1. Effect of some postharvest treatments on the quality and shelf life of three cucumber cultivars during storage at room temperature. (Stage reached: 70%)
2. Effect of postharvest treatments on the rate of ripening, fruit quality, and shelflife of mango varieties. (Stage reached: 70%)
3. A survey of the postharvest storage technologies and uses of tomato fruit (*Lycopersicon esculenta*) in the Brong Ahafo Region of Ghana.
4. Using three levels of Gamma Irradiation to control *Thielaviopsis cinnamoni* on pineapple varieties during storage. (Stage reached: 60%)
5. Evaluation of traditional fish processing methods on fish quality during storage. (Stage reached: 55%)
6. Effect of storage media and organic extracts on sprouting and decay in sweet potato during storage. (stage reached 60%)

Prof. (Mrs) N.S. Olympio

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

Prof. P.Y. Boateng

1. Effect of cultural practices on growth, yield and quality of some vegetables
2. Studies into the use of soil amendments in the control of nematodes in vegetable crops
3. Studies into vegetative propagation of some difficult to root horticultural crops.
4. Evaluation of four exotic and two local cultivars of tomato for pests and diseases resistance.

Mr. P.Y. Adjei

1. Hot water/fungicide treatment of avocado seeds prior to germination
2. Size/cut length of the seed of the avocado before germination
3. Heat treatment of papaya seeds before germination
4. Effect of heat treatment of papaya seeds on seedling growth

Dr. B.K. Banful

1. Effects of magnesium and calcium fertilization on yield and fruit quality of two varieties of tomatoes.
2. Response of Ravaya (baby aubergine) to varied rates of poultry manure and plant density.
3. Effect of poultry manure and plant spacing on growth and yield of exportable Okra.
4. Determining the biological efficiency and productivity of onion-cabbage intercropping system
5. Growth and yield response of tomato (*Solanum lycopersicon*) to application of Moringa leaves, *Tithonia* leaves and inorganic NPK fertilizer.
6. Growth and yield response of sweet pepper (*Capsicum annum*) to combined application of *Tithonia diversifolia* leaves and inorganic fertilization
7. Effect of varying water regimes on growth and yield of bulb onion (*Allium cepa*) and shallot (*Allium cepa var aggregatum*) in Ghana.

Mrs. H.V. Adzraku

1. Effect of well landscaped environment on teaching and learning in Basic Schools: Case study of the Kumasi Metropolis.
2. Designing the Landscape for the aged and people with Special Needs.
3. Use of decomposed sawdust in place of topsoil for establishing turf grass.
4. Control of *cyperus rotundus*
5. Effect of rate of mowing and thatch accumulation on Lawn performance

Dr. (Ms) L. Atuah

1. *In situ* remediation of metal contaminated soil.

2. Determination of non-toxic concentrations of phosphorus for application in *in situ* remediation of metal contaminated soil.
3. Developing sustainable remediation technologies for contaminated soil and water using amendments derived from various waste/by products and ornamental plants (phytoremediation).
4. Characterisation of compost derived from vegetable gardens and lawn clippings for use as soil amendment and remediation of contaminated soils.
5. Assessing the potential of biochar from both soft and hardwood for ornamental nursery production.
6. Formulation of soilless medium using by-products from the timber and coconut industry.

Mr. P. Kumah

1. Postharvest handling of cassava in the Bibiani-Anwiaso-Bekwai district.
2. Postharvest loss assessment in cassava production in the Suhum-Kraboa-Coaltar District.
3. Evaluation of two models of solar dryers in the production of cassava chips.
4. Effect of two solar dryers on quality of yam chips.
5. Susceptibility of two banana cultivars to crown rot disease.
6. Quality response of Robusta coffee beans to methods and depth of drying.
7. Assessment of the postharvest handling of six vegetables in two selected district in Ashanti Region of Ghana.
8. Postharvest loss assessment in the soya beans industry in the three Northern Regions.

Mrs. I. Idun

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

Mr. F. Appiah

1. Commodity systems analysis of Horticultural crops in Ghana
2. Development of solar drying technology for drying of cocoa
3. Production of tomato powder using selected accessions of tomato in Ghana
4. Microbiological quality of vegetables sold on KNUST campus

Mrs. P.D. Kaledzi

1. Effect of nodal pinching and fertilizer type on the flowering pattern and yield of cucumber (*Cucumis sativus*).
2. Effect of soil amendments and botanicals on the performance of spring onion (*Allium fistulosum* L.) and the efficacy of the botanicals in controlling onion thrips (*Thrips tabaci*)
3. Assessment of postharvest handling practices on quality of organically produced banana (musa spp) and okra (*abelmoschus esculentus* L) in two districts in the Eastern Region of Ghana.
4. Assessment of postharvest handling of six major vegetables in two selected Districts in the Ashanti Region of Ghana.

5. A survey to assess tomato farming practices, wilt diseases and constraints in some major growing areas of the Ashanti and Upper East Regions of Ghana.
6. A comparative trial of growth, yield and quality of five (5) tomato (*Solanum lycopersicum*) cultivars under organic production system
7. Growth and yield response of okra (*Abelmoschus esculentus*) genotypes to residual effect of soil amended with *Mucuna puriens*
8. Breeding and Development of wilt resistant varieties of tomato (*Solanum lycopersicum*) in Ghana.

CONFERENCE PROCEEDINGS

Popoola, A. R., Ojo, D. K., **Kaledzi, P. D.**, Dapaah, H. K., Adegbite, D. A. and Falana, Y. (2011). Building capacity in agro biotechnology to improve tomato yield in wilt-endemic areas of Nigeria and Ghana- A report of a Dfid-sponsored bilateral cooperation. Book of Abstracts, Ghana Institute of Horticulturists, 12th Annual General Meeting and Scientific Workshop.

Amoako, P., **Kumah, P.** and **Appiah, F.** (2012). Pesticides usage in cabbage (*Brassica oleracea*) cultivation in the forest ecozone of Ghana. In FAO and ISHS. *Proceedings of the International Symposium on Urban and Peri-urban horticulture in the century of cities: Lessons, challenges, opportunities, 6-9 December 2010.* Dakar.

DEPARTMENTAL PROJECTS

1. Dr. (Mrs) Olympio, Mr. P.Y. Adjei and Dr, B.K. Maalekuu are on a – 5 year programme for Export Marketing and Quality Awareness Project (EMQAP) which started in 2008 at a cost of about \$1.5 million
2. Mrs. Hannah Adzraku led a team to execute a nearly GH¢50,000-Project for the Department.

PARTICIPATION IN CONFERENCES AND MEETINGS

1. The academic members of staff attended the 12th AGM of the Ghana Institute of Horticulturist (GhIH) from 15th – 17th September 2011.
2. Mr. Francis Appiah and Mr. P.K. Kumah attended the All Africa Horticultural Congress at Skukuza, South Africa from 15-21 January 2012.

MAJOR SERVICE TO THE COMMUNITY

Dr. Ben Banful was on a special mission to select the National Best Farmer for 2011.

FACULTY 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 to create awareness of the preservation of the natural resources through teaching and research to sustain the Ghanaian economy. It therefore offers the opportunity to students at the tertiary level by enabling 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.

Administration

Prof. W. Oduro	Dean
Mr. F. K. Nsowah	Chief Administrative Assistant

Departments and Heads

There are five departments headed by the following persons;

Dr. Twum-Ampofo	-	Head of Department of Agroforestry
Prof. S. Amisah	-	Head of Department of Fisheries and Watershed Management
Dr. Kyere Boateng	-	Head of Department of Silviculture and Forest Management
Mr. E. Danquah	-	Head of Department of Wildlife and Range Management
Dr. C. Antwi-Boasiako	-	Head of 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. There are three Academic Staff, namely, Mr. K. A. Afrifa, Mr. B. B. Campion and Miss J. A. S. Ameyaw on study leave. Dr. D. Adjei-Boateng returned from study leave and resumed work in December, 2012 after completing his PhD programme at the University of Dublin, Ireland. During the same year, Dr. E. L. Dawoe joined the Academic Staff of the Department of Agroforestry. The Academic Staff is supported by twenty-four administrative and technical staff, one of them, Mr. C. Attakorah, is on study leave.

STUDENT DEMOGRAPHY

The student population of the faculty is as follows:

UNDERGRADUATE

MALE	531
FEMALE	187
<u>GRADUATE</u>	
MALE	53
FEMALE	11

INFRASTRUCTURE

The Faculty has established Soil and Plant Laboratory. It is being used by students and staff for teaching and research activities. It provides services to other Institutions and Agencies to generate income. The Faculty has sunk a borehole to ensure constant flow of water to all parts of the Faculty. A new garage has been constructed to accommodate staff cars. Defunct security bulbs and air-conditioners have been rehabilitated. Internet facility for both students and staff has been installed to facilitate teaching and research.

Funding Of Research Activities

The Faculty continues to receive support from the Canadian International Development Agency (CIDA) for the APERL Project. Provision of funds from the National Forest Programme Facility, through the Food and Agriculture Organisation of the United Nations (FAO) to Faculty of Renewable Natural Resources for provision of services for the “Registration of 20,000 Modified Tanngya Farmers” in the Ashanti, Juaso, Bekwai, New Edubiase and Kumawu Districts continues.

Teaching and Research Activities

The Faculty had started establishing a teak plantation on the KNUST land at Kwamo. During the 2010/2011 academic year, 15,000 teak trees were planted and they are thriving very well. It is planned that 25 hectares of land will be used every year and by the end of four years, that is, by the end of 2014/2015 academic year, it is hoped that the 100 hectare would have been covered. The Faculty has started establishing a Modern Integrated Fish Farm at the Faculty Demonstration Farm for research, training, running of short courses and for fish production. To this effect, a borehole had been sunk and electricity power supply restored at the farm. The Faculty has acquired 5000 species of fish for breeding. The Faculty has embarked on the building of a Fisheries Complex for the training of personnel in the fishing industry. The project might be completed by the end of May 2012.

The Faculty has arranged for the purchase of a 60-seater Tata Bus to enhance the organisation of field trips for students.

INTRODUCTION OF NEW PROGRAMMES

The Faculty has embarked on running separate undergraduate and graduate programmes for the five Departments.

DEPARTMENT OF AGROFORESTRY

There is a proposal to run B.Sc. Agroforestry programme in future. There are also plans to run short courses in Agroforestry for Agroforestry Practitioners.

DEPARTMENT OF FISHERIES AND WATERSHED MANAGEMENT

The Department of Fisheries and Watershed Management has submitted a proposal to be approved by the Academic Board for the running of B.Sc. Programme in Aquaculture and Watershed Management. The Department is also writing a proposal for M.Sc. programme in Aquaculture.

DEPARTMENT OF SILVICULTURE AND FOREST MANAGEMENT

A proposal has been drawn to run B.Sc. degree in Natural Resource Entrepreneurship in future. The Academic Board has approved of a programme to run M.Sc. in Natural Resource and Environmental Governance with effect from the 2012/2013 Academic Year.

DEPARTMENT OF WILDLIFE AND RANGE MANAGEMENT

The Department has written a draft to run B.Sc. Degree Programmed in Conservation and Wildlife Management.

DEPARTMENT OF WOOD SCIENCE AND TECHNOLOGY

The Department has drawn two proposals to run the following undergraduate programmes:

- i) B.Sc. Wood Production Engineering
- ii) B.Sc. Furniture Design Technology.

SERVICE TO THE COMMUNITY

The Faculty continues offer advice to the Ghana Forestry Commission. As a scientific authority the Faculty offers expert advice to the Ghana Timber and Saw millers Association 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 Analyzers at the Soil and Plant Analysis Laboratory. He organised five-day training for the Laboratory Technician from 21st to 25th May, 2011 for the effective use of the Laboratory equipment.

DEPARTMENT OF AGROFORESTRY

The Department of Agroforestry is one of the five Departments of the Faculty of Renewable Natural Resources providing support to FRNR in the teaching of undergraduate courses in Soil Science, Technical Communication, Agroforestry, Agriculture, Natural Resources Extension and Economics, Social and Urban Forestry. The Agroforestry option in BSc Natural Resources Management Programme continues to be attractive to students with the current third and fourth year Agroforestry option classes being 58 and 34 in number, respectively. The Department's graduate programmes continued to attract students. In the year under review seven (7) MSc/MPhil students registered.

ACADEMIC STAFF

The Academic staff strength of the Department is seven. The Department requires more lecturers and efforts are being made to recruit additional staff. Dr. Evans L.K. Dawoe, Research Fellow has transferred from the Technology Consultancy Centre (TCC) to the Department of Agroforestry.

LIST OF ACADEMIC STAFF

Dr. K. Twum-Ampofo	-	Senior Lecturer (Head of Department)
Dr. (Mrs.) Olivia Agbenyega	-	Lecturer
Dr. Victor R. Barnes	-	Lecturer
Dr. Evans L.K. Dawoe	-	Research Fellow
Dr. A. Adutwum Abunyewa	-	Lecturer
*Dr. C. Oti-Boateng	-	Senior Lecturer (on Contract)
*Dr. J.J. Afuakwa	-	Lecturer (on Contract)
**Dr. F. Ulzen-Appiah	-	Research Fellow (on Part-Time)

MAJOR STAFF RESEARCH ACTIVITIES

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

Dr. K. Twum-Ampofo

1. Rhizobial and Mycorrhizal studies on indigenous tree legumes
2. Agroforestry in community development
3. Use of multipurpose trees biomass for soil fertility improvement.

Dr. (Mrs) Olivia Agbenyega

1. Socio-economic evaluation of Agroforestry systems
2. Gender and Agroforestry
3. Agroforestry in community development
4. Bats and Infectology in rural communities

Dr. Charles Oti-Boateng

1. Agronomic studies on *Jatropha curcus* established from seeds and from cuttings
2. Agronomic studies on the influence of Biochar on the growth and yield of Yams *Dioscorea rotundata*.

Dr. J. J. Afuakwa

Biomass transfer and inorganic fertilizers for soil fertility improvement.

Dr. Evans Dawoe

Organic carbon and nutrient dynamics in shaded-cocoa and oil production systems.

Dr. Rex Barnes

1. Influences of *Adansonia Digitata* on ecology, crop productivity and farmers perception in the savanna zone of Ghana.
2. Evaluation of fire incidence and management in Dry-deciduous Fire Zone (DSFZ) and Moist-Semi-deciduous North West (MSNW) Ecological Zone in Ghana.
3. A comparative study on public perception on climate change in urban and rural communities in Ghana.
4. Agroforestry in community development

Dr. Akwasi Adutwum Abunyewa

Soil Fertility and Remote Sensing

MAJOR COMMUNITY SERVICE

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

1. 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, Mrs Agbenyega is the coordinator for Gender mainstreaming workshops for APERL Project communities in the Brong Ahafo Region. She is also a trainer for the Africa Lead project for Food Security in Africa.
2. Dr. Twum-Ampofo is a member of Technical/Management Committee of APEL Project funded by CIDA at FRNR-CANR and also as Agroforestry Specialist/Consultant on Agriculture and Food Security projects to Local and International NGO's. He is a member of the Independence Hall Council, KNUST and also serving on the Ashanti Regional Disaster Management Committee of the National Disaster Management Organization.
3. Dr. Victor Rex Barnes is a resource person and a facilitator on Agroforestry Practices to Enhance Resource-poor Livelihoods Project being implemented in Fiapre, Dumasua and

Ayakomaso communities around Tain II Forest Reserve by FRNR, CANR in collaboration with University of Guelph with support from the CIDA. He is also a member of the Ashanti Regional Disaster Management Committee of the National Disaster Management Organization. Dr. Barnes also a resource person (Ecologist) for FSC/Kumasi Wood Cluster Association Forest Certification Project to Identify High Conservation Values in Six Timber Utilization Contract Forest Reserves in Ghana, and a member of National Inter-Ministerial Pesticides Technical Committee of the Environmental Protection Agency, Ministry of Environment and Science.

4. Dr. Evans Dawoe served as member of a committee set up by the Vice Chancellor to investigate allegations of misconduct against a student for influencing the massaging of exams marks.
5. Dr. A. Adutwum Abenyewa is a Convener/Facilitator- AGRA-DANIDA Agricultural Value Chain Mentorship Project at Tamale, Bimbilla and Yendi and is also involved in Training of Farmers and MOFA Staff on Integrated soil fertility and integrated pest management on yam in the Northern and Upper East Regions. He is a member of Education Committee of S.D.A. Church at Atwima Koforidua, Atwima Nwabiagya District in Ashanti Region.
6. Dr. Charles Oti-Boateng is parenting catholic students (International Movement of Catholic Students-Pax-Romana at KNUST.
7. Dr. J.J. Afuakwa is a Fellow of Queen Elizabeth Hall, KNUST and Board Member of Denyaseman Catholic Senior High School, 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 and also trained two laboratory technicians.

The Department is collaborating with the National Forest Division of Forestry Research Institute of Ghana (FORIG) Kumasi on ITIO funded Project on Rehabilitation of Degraded Forest Reserves in Ghana (Phase II). Dr. Twum-Ampofo is on the research team as Agroforester.

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.

PARTICIPATION IN CONFERENCES, SEMINARS, MEETINGS AND WORKSHOPS

1. **Dr. (Mrs.) Olivia Agbenyega**

13th – 15th December, 2011 Africa Lead/USAID, Non State Actor (NSA) Dialog Platform Action Plan on Food Security and Comprehensive Africa Agricultural Development Program (CAADP) Tamale, Northern Region.

2. International Conference on the use of integrated natural resources management principles for improving higher education in agriculture and natural resources, CANR, KNUST, Kumasi. 14th – 16th March 2012:

Dr. Victor R. Barnes

Resource Person at Ashanti Regional Policy Fair organized by the Ministry of Information and Ashanti Regional Co-ordinating Council. I made a paper presentation on “Assessment of Forest Resources in Ashanti Region and their Contributions to the Socio-economic Development and Ghana’s Future”. Kumasi, Ghana. 26th – 29th October, 2011

Dr. Evans Dawoe Country Level REDD+ Capacity Needs Workshop, held at Excelsa Lodge, Kumasi Ashanti Region Ghana 4th November 2011.

International Conference on the use of integrated Natural Resources Management (INRM) Principles for improving higher education in agricultural and natural resources organized by the CANR at International Centre for Innovative Learning (ICIL), KNUST, Kumasi, 14th -15th March 2012.

CONFERENCE PAPERS

Barnes, V.R, Oduro, W., Akoto - Sarfo D. Thevathasan, N., Gordon, A. 2011. Agroforestry Practices to Enhance Resource-poor Livelihoods in Ghana: Wildfire Mitigation Strategies and Lessons Learned. Proceedings, 12th North American Agroforestry Conference, Athens, Georgia, United States of America. pp 276. 4th – 9th June, 2011.

Barnes, V.R. 2011. Wildfire Suppression in Ghana. Proceedings of Workshop for the Utilisation of Community Fire Guidelines and Manual for Ghana. The International Union of Conservation of Nature and Forestry Research Institute of Ghana, Kumasi, Ghana. 7th – 8th April 2011.

Contran N., Bellavite D., Kumah F. K. A., **Dawoe E.**, Oti-Boateng C. and Lubino M. (2011) A. Promising energy crop for rural development: improvement of *Jatropha curcas* agro-practices – A paper presented at a Joint AGI-SIBV-SIGA Meeting at Cittadella Assisi, Italy, 19-22 September 2011

Contran, N., Bellavite, D., Kumah, F.K.A., **Dawoe, E.**, **Oti-Boateng, C.** and Lubino, N. (2011). A promising Energy Crop for Rural Development: Improvement of *Jatropha curcas* Agro-Practices” presented at Cittadella di Assisi, Italy, September 2011

DEPARTMENT FISHERIES AND WATERSHED MANAGEMENT

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

Academic Staff and Supporting Staff

The staffing situation has improved considerably over the years with the following members currently employed in the Department. They are:

- | | | | |
|----|-------------------------------|---|-------------------------------|
| 1) | Prof. S. Amisah | - | Prof/Head of Department |
| 2) | Dr. N. W. Agbo | - | Lecturer |
| 3) | Mr. B. B. Campion | - | Lecturer (On PhD study leave) |
| 4) | Mr. G. Owusu-Boateng | - | Lecturer |
| 5) | Dr. D. Adjei-Boateng | - | Lecturer |
| 6) | Mr. Maxwell Kyei Asiamah | - | Fish Farm Technician |
| 7) | Miss Ohenewaa Agyare | - | Laboratory Technologist |
| 8) | Mr. Emmanuel Charles K. Asare | - | Administrative Assistant |

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 Bosomtwe.

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

In 2012/2013 academic year the Department would be introducing a BSc programme in Aquaculture and Water Resources Management in response to a growing demand for more practical-oriented personnel and professionals in aquaculture and water resources management for Ghana and the sub-region.

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

Honorary Award

Professor Steve Amisah received a meritorious award for Academic Excellence and for Best Researcher in Science 2011. The award was presented at a grand ceremony at the KNUST by the Vice Chancellor of the university.

COLLABORATIVE RESEARCH

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

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

The Department received equipment for water quality determinations and some teaching aids worth over USD 50,000 from the collaborating American universities. Similar equipment including hand held GPS units have been received by the Department and this is enhancing research and teaching in the Department

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

PARTICIPATION IN CONFERENCES/WORKSHOPS/SERMINARS

Agbo N.W., Yeboah-Agyepong M., Adjei-Boateng D. and Owusu-Boateng G. (2011). Nutritional composition of Shea nut (*vitellaria paradoxa*, gaertn) by-products and their digestibility by Nile tilapia (*Oreochromis niloticus* L.). Oral presentation at the 27th Biennial Conference of Ghana Science Association in Kumasi. 10-14 July 2011.

Agbo N. W., Amisah S., Tettey E. and Frimpong E.A. (2011). Effects of dietary protein levels on growth performance of *Chrysichthys nigrodigitatus* fingerlings. Oral presentation at the 9th Asian Fisheries and Aquaculture Forum in Shanghai Ocean University, Shanghai, China. 21-25 April 2011.

Amisah, S. Anane Gifty T. Frimpong, E. A. (2011). Constraints and opportunities for cage fish farming in Ghana. *9th Asian Fisheries Society Conference*. Shanghai, China 25-31 March 2011.

S. Amisah and Frimpong E (2010). Management practices in response to effluent discharges in fish farms in mid-central Ghana. Paper presented at the *World Aquaculture Society Conference* 2010 March 1-5. San Diego, California, USA Convention Centre.

DEPARTMENT OF SILVICULTURE AND FOREST MANAGEMENT

INTRODUCTION

The Department worked towards the expansion of its teaching and research activities by developing a new stakeholder-driven MSc. Programme in Natural Resource and Environmental Governance, which is scheduled to start in August 2012.

STAFF

At present there are seven full-time senior members, one post retirement part-time senior member part and three supporting staff at post as listed below:

Dr. Boateng Kyereh (Snr. Lecturer and Head of Department)

*Dr. K. A. Nkyi (Snr. Lecturer)

Dr. P.D. Kumapley (Lecturer)

Dr. Emmanuel Acheampong (Lecturer)

Dr. Daniel Dompseh (Lecturer)

Miss Nana Ama Asare (Lecturer)

Miss Joana Ameyaw (Lecturer on study leave)

*Dr. E.A. Abeney (Post-retirement part-time Senior lecturer)

* On Contract

SUPPORTING STAFF

Mr. Joseph Owusu (Principal Technician)

Napoleon Jackson Mensah (Snr. Technician)

Janet Yeboah (Miss) (Snr. Admin Assist.)

STAFF DEVELOPMENT

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

STUDENT POPULATION

The student population is made up of 117 undergraduates (third and final year students) and 17 post-graduates.

DEPARTMENT RESEARCH WORK

The Department's research programme is focused on the following areas:

Dr Boateng Kyereh

- Wildfire ecology and management in the forest transition zone of Ghana
- Indigenous ecological knowledge of on-farm tree management
- Alien species invasion of Ghanaian forest reserves

Dr. K.Appiagyei Nkyi

- Tree species' responses to different forest nursery practices
- Tree growth and development under various plantation development models in Ghana

Dr Emmanuel Acheampong

- Forest-related livelihoods and forest governance in the high forest zone of Ghana
- Illegal chainsaw milling and the domestic lumber market in Ghana
- Socio-economic implications of industrial biodiesel plantations: the case of *Jatropha curcas* on rural land use alienation and conflict escalation in Ghana and Ethiopia

Dr. P.D. Kumapley

- Wood fuel studies in the forest zone of Ghana

Dr Daniel Dompseh

- The ecology and genetics of fragmented populations of the critically endangered tree *Talbotiella gentii*

INSTITUTIONAL COLLABORATION

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

Dr. Boateng Kyereh:

- Scientific Coordinator of Tropenbos International Ghana. Responsible for the scientific direction and quality of all Tropenbos supported research projects in the country.
- Member of the working group on Small and Medium Forest Enterprises Development in Ghana (Implementing Agency: Tropenbos International)

- Local supervisor of two PhD students of Wageningen University and Research Centre, the Netherlands. The students' research topics are (i) Scenario analysis of sustainable forest management in Ghana (ii) Effects of climate change on regeneration of forest tree species in Ghana
- Local supervisor of a PhD student of the University of Amsterdam researching on forest and tree-related livelihood conflicts in the high forest zone of Ghana.
- Member of the Network of MSc European Forestry Erasmus Mundus Programme, with focal point at School of Forest Sciences, University of Eastern Finland

Dr Emmanuel Acheampong:

- Currently collaborating with Addis Ababa University through the College of Agriculture and Natural Resources (CANR) to submit a proposal for funding under the Intra-ACP Academic Mobility Scheme.
- A member of a consortium of five organizations implementing the project “Assessing the socio-economic implications of industrial biodiesel plantations: Repercussions of *Jatropha curcas* on rural land use alienation and conflict escalation in Ghana and Ethiopia”.
- Member, Forest Connect Working Group. This Project seeks to reduce poverty by linking small and medium forest enterprises (SMFEs) with market and service providers.

SERVICE TO COMMUNITY

Dr. E.A. Abeney:

- Chairman National Working Group on Forest Certification
- Member of the Multi-stakeholder Implementation Committee of the Voluntary Partnership Agreement on legal timber between Ghana and the European Union.

Dr. E Acheampong

- A member of a consortium assessing the socio-economic and ecological implications of industrial biodiesel plantations in Ghana and Ethiopia. This Project is under the Conflict and Cooperation over Natural Resources in Developing Countries (CoCooN) Programme, funded by the Directorate General of Development Cooperation (DGIS) of the Ministry of Foreign Affairs of the Netherlands and the Netherlands Organisation for Scientific Research (NWO).
- International Baccalaureate Organization (IBO): Examiner of Environmental Systems and Society.

Dr. Boateng Kyereh

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

WORKSHOPS/CONFERENCES ATTENDED BY STAFF

- Stakeholder consultative workshop on the Illegal Extension of Admitted Farms in Forest Reserves. Organized by the Resource Management Support Centre of the Forestry Commission on 22nd September, 2011 at Wood Industries Training Centre (WITC), Akyawkrom, Kumasi.
- End-of Project Workshop on Governance and Policy Implications for Processing and Utilization of Logging Residues and Trees on Farmlands. Organized by Forestry Research Institute of Ghana. 5th April 2011 at Anita Hotel Ejisu.
- Pre-validation Workshop on the Draft Forest and Wildlife Policy. July 20th 2011. Tropenbos International Ghana Conference Room, Fumesua, Kumasi.
- Stakeholder Engagement Workshop on Ghana's Forest Definition for CDM and REDD Processes. Organized by Forestry Commission on 10th February 2011 FC Conference Room, Achimota, Accra.
- Stakeholder workshop on timber yield allocation and removal. Organized by the Resource Management Support Centre (RMSC) of the Forestry Commission on 19th October, 2010 at WITC, Akyawkrom, Kumasi.
- Fourth National Forestry Forum organized by the National Forestry Forum, Ghana. 8th December 2011 at WITC Akyawkrom.
- Workshop on Climate Change, FIP and GSBA. Organized by Tropenbos International Ghana on 11th February, 2011 Forest Hotel Dodowa.

CONFERENCE /SEMINAR/WORKSHOP PAPERS

Kyereh B. (2011). The Desertification Discourse in West Africa. Climate Change GRP Introductory Seminar, Accra. Dec. 6-9, 2011

Kyereh B. (2011). Climate Change and Land Resources in West Africa. GRP Introductory Seminar, Accra Dec. 6-9, 2011.

Kyereh B. (2011). Seeking local improvements through international forest mechanisms: Could FLEGT/VPA and REDD+ be the answers for Ghana? Presentation made at the Do Global Intentions Lead to Local Improvements? BUZA/OS-TBI Seminar, The Hague. April 2011

Kyereh B. (2011). Securing the future of globally significant biodiversity areas in Ghana. Presentation made at the TBI Seminar on Forest Investment, Dodowa 1st Feb. 2011

POSTER PRESENTATION

Guuroh, R.T., Uibrig, H. and **Acheampong, E.** (2011). Improving Benefits from Marginal Lands: Contribution of Homegardens to Household Income Generation in the Bieha District of Southern Burkina Faso. Poster presentation. Tropical and Subtropical Agricultural and Natural Resource Management (TROPENTAG) Conference, University of Bonn, October 5-7, 2011. Available online at <http://www.tropentag.de/2011/abstracts/full/802.pdf>

GRANTS RECEIVED

For the period under review, the Department benefited from a research grant of €6000 from Tropenbos International, Ghana to support one PhD research.

DEPARTMENT OF WILDLIFE AND RANGE MANAGEMENT

INTRODUCTION

The department continued to offer courses leading to the award of BSc Natural Resources Management, MPhil and PhD in Wildlife and Range Management degrees. Plans are underway to diversify the postgraduate degree programmes offered by the department and also to start a taught Masters. The department also houses the MSc programme in GIS for Natural Resources Management, collaboration between KNUST and ITC, Enschede, The Netherlands. There are 24 graduate students in the department with 6 pursuing PhD degrees.

Academic and Technical Staff

S. K. Opong - Associate Professor
William Oduro - Associate Professor/Dean,
FRNR
Emmanuel Danquah - Senior Lecturer/Head
of Department
Louis Addae-Wireko - Lecturer

Moses K. Sam - Part-time Lecturer
Bright Obeng Kankam - Part-time Lecturer
Elikem Nutsuakor- Senior Field Technician
Gloria Owusu Ansah- Senior Laboratory
Technician

ADMINISTRATIVE STAFF

Nii Amon-Kotei - Senior Administrative Assistant
Edward Kwasi Addae - Driver Supervisor
Fulgencios Somkang - Messenger/ Cleaner

MAJOR RESEARCH ACTIVITY

Virus biology, host ecology and human behaviour as determinants for coronaviral zoonoses in Ghanaian Bats. Research Team: **S. K. Opong**, Yaw Adu-Sarkodie, Christian Drosten and Elizabeth Kalko

PARTICIPATION IN CONFERENCES, SEMINARS AND WORKSHOPS

PROF WILLIAM ODURO

1. Adum, G.B., Eichhorn, M.P., **Oduro, W.**, Ofori-Boateng, C., Rödel, M.-O.: Two-Stage Recovery of Tropical Forest Amphibian Communities Following Logging. Ecology Club Meeting, School of Biology, University of Nottingham (March 18 2011).
2. Adum, G.B., Eichhorn, M.P., **Oduro, W.**, Ofori-Boateng, C., Rödel, M.-O.: Recovery of Forest Amphibian Communities after Logging. Student Conference on Conservation Science, University of Cambridge (22-25 March 2011).
3. Adum, G.B., Eichhorn, M.P., **Oduro, W.**, Ofori-Boateng, C., Rödel, M.-O.: Amphibian Fauna Responses to Logging in Upper Guinean Forests. Presented to the Herpetology Working Group, Humboldt University/ Museum of Natural History, Berlin, Germany (April 9, 2011).
4. Adum, G.B., Eichhorn, M.P., **Oduro, W.**, Ofori-Boateng, C., Rödel, M.-O.: Two-Stage Recovery of Tropical Forest Amphibian Communities Following Logging. British Ecological Society Tropical Ecology Group Meeting, Newcastle University (April 26-28 2011).
5. Adum, G.B., Eichhorn, M.P., **Oduro, W.**, Ofori-Boateng, C., Rödel, M.-O.: Recovery of Amphibian Communities Following Logging in the Rainforests of South-Western Ghana. Tropenbos International Ghana Annual Student Seminars, FORIG, Fumesua, Ghana (May 23-24 2011).
6. Adum, G.B., Eichhorn, M.P., **Oduro, W.**, Ofori-Boateng, C., Rödel, M.-O.: Two-Stage Recovery of Tropical Forest Amphibian Communities Following Logging. Association for Tropical Biology and Conservation & Society for Biology Conservation (Africa Section) Joint Meeting, Arusha, Tanzania (June 12-16 2011).
7. Adum, G.B., Eichhorn, M.P., **Oduro, W.**, Ofori-Boateng, C., Rödel, M.-O.: Recovery of Amphibian Communities Following Logging in Upper Guinean Forests of South-Western Ghana. DRECA-GH Research Workshop, Ejisu-Kumasi, Ghana (July 26-29 2011).
8. CIDA Meeting with Canadian Partners in Ghana. Alisa Hotel. Accra (9th March 2011).
9. Workshop, Building the Capacity of Professionals for Innovative and Sustainable Management of Natural Resources (NRM) in Ghana. Institutionalization of Integrated Natural Resource Management (INRM). KNUST (March 2011).
10. National Stakeholders workshop to review the Draft Wildlife Resources management Bill. Shai Hills Resort Hotel (19 April 2011).

11. In honour of Canada Day. The High Commissioner of Canada, H. E. Mrs. Trudy Kernighan. At a reception, Official Residence Canada House, 5 Jawaharlal Nehru Road, Cantonments, Accra (Tuesday June 28, 2011).
12. 1st KNUST Summer School. “Equipping Staff for Leading Change in Academia”. KNUST, Great Hall Conference Room Kumasi (8-12th August 2011).
13. Pre-validation workshop on the Draft Forest and Wildlife Policy. Conference room, Tropenbos International Ghana (21 July, 2011).
14. Meeting to explore Institutional Links with Aberdeen Researchers. Centre for African Wetlands Conference Room, University of Ghana, Legon, Accra (Tuesday, 23rd August, 2011).
15. First Partners Meeting of the Global Pollination Project, “Conservation and Management of Pollinators sustainable Agriculture, through an ecosystem Approach” UCC, Cape Coast, Ghana (24-25 Feb 2011).
16. Workshop for staff to enhance competence in publishing in refereed journals and writing winnable proposals. Academic Board Conference Room, Great Hall. KNUST, Kumasi (22 to 24 February 2011).
17. Global Pollination Project Workshop (24th to 25th February, 2011).
18. Validation Workshop, AAU-CADRE, Airport West Hotel, Accra (4th April, 2011).
19. Project Directors/Coordinators meeting, Ottawa, Canada (2010/2011).
20. CIDA Canadian Partners Meeting. Alisa Hotel (North Ridge, Accra) (9 March 2011).

MR. EMMANUEL DANQUAH

1. **Danquah, E.**, Nutsuakor, M., E. and Dunia Nteim, T., S. (2011). Prevalence and Management of Endo Parasitic Zoonoses in the Kumasi Zoo, Ghana. College of Health Sciences, 4th Annual Scientific Conference, KNUST, Ghana.
2. **Danquah, E.** and Oppong, S., K. (2011). Deforestation Trends in Western Ghana and Implications for Elephants. Ghana Science Association, 27th Biennial Conference, 2011. KNUST, Ghana.
3. **Danquah, E.** and Oppong, S., K. (2011). Species Composition and Density of Mammals in the Bia-Goaso Forest Block, Western Ghana. Ghana Science Association, 27th Biennial Conference, 2011. KNUST, Ghana

MAJOR SERVICE TO THE COMMUNITY

Members of staff continued to offer their services to many national and International Agencies

Prof. S. K. Opong

1. Joint Course Coordinator, ITC/KNUST MSc in GIS for Natural Resources Management programme
2. Management Team, Agroforestry Practices to Enhance Resource-Poor Livelihoods (APERL), Project No. S63440, Funded by Canadian International Development Agency
3. Reviewer, Ghana Journal of Agricultural Science,
4. Reviewer, Journal of Ghana Science Association,
5. Reviewer, Journal of Science and Technology,
6. Reviewer, Pachyderm
7. Moderator, Faculty of Renewable Natural Resources, UDS, Tamale
8. External examiner, Faculty of Renewable Natural Resources, UDS, Tamale
9. Principal Investigator, Virus biology, host ecology and human behaviour as determinants for coronaviral zoonoses in Ghanaian Bats. Collaboration with KCCR, University of Bonn, Medical Centre and Ulm University, Germany, Germany.
10. Principal Investigator, Malaria Vector Control Project. Collaboration with KCCR and Bernhard Nocht Institute for Tropical Medicine

Prof William Oduro

1. KNUST representation on the scholarship review committee, scholarship secretariat. Accra.
2. Member, Embedding Changes Group. Responsible for embedding changes in College of agriculture and Natural resources culture and analysing Strategic choices (E&S). NPT 278 project.
3. Coordinator, CIDA -APERL (Agroforestry Practices to Enhance Resource-Poor Livelihoods). Dean, Faculty of Renewable Natural Resources, CANR,
4. Patron, agency for Health and Food Security. Ntonsu, Kwabre District, Ashanti Region. January Trustee, RAINFOREST FRIENDS, GHANA-RAFFS/G (affiliated to Forest Friends Ireland-FFI). RAFFS/G
5. Member serves on TROPENBOS International Ghana Bi-National Steering Committee.
6. Member, UNESCO-MAB Sub-Committee.
7. Reviewer, African Journal of Ecology. Reviewer, African Academy of Sciences, Reviewer, African Journal of Biotechnology, www.academicjournals.org/ajbc, External Assessor Department of Wildlife and Entomology, University of Cape Coast, 2009 to date

MR. EMMANUEL DANQUAH

1. Optimal Development Consult (2012). Environmental and Social Performance Compliance in Kibi and Nyinahin Concessions. Progress Report for Vimetco Ghana Bauxite. Technical Report submitted to Vimetco Ghana (Bauxite) Limited

2. Optimal Development Consult (2011). Environmental Impact Assessment and Hydrological Survey with Liability Estimate of the Kibi and Nyinahin Bauxite Concessions. Technical Report submitted to Vimetco Ghana (Bauxite) Limited. Optimal Development Consult (2011). Strategic Stakeholder and Resource Mapping in and around the Songhor Lagoon. Technical Report submitted to Electra (West Africa) Limited.
3. A Rocha, Ghana (ARG),
4. Optimal Development Consult (OPDEC)
5. Manuscript Reviewer, *Pachyderm*, *African Journal of Ecology* Mentor, *African Women in Agricultural Research & Development (AWARD) Project*

PARTICIPATION IN CONFERENCES AND WORKSHOPS

Mr. Emmanuel Danquah

1. October 12-18, 2012: AWARD Science Workshop, Nairobi, Kenya (Gender and Diversity Program, CGIAR/ICRAG, Nairobi, Kenya.
2. October 24-28, 2011: AWARD Mentoring Orientation Workshop, Nairobi, Kenya (Gender and Diversity Program, CGIAR/ICRAG, Nairobi, Kenya.
3. March 28-29, 2011: Restitution Workshop of the Community Fire Project (FORIG, IUCN and RMSC Project, Miklin Hotel, Kumasi)

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

STAFF

C. Antwi-Boasiako - Senior Lecturer/Head of Department
 Jonny Osei Kofi - Lecturer
 * K. Frimpong-Mensah - Associate Professor
 ** N. A. Darkwa- Senior Lecturer
 K. A. Afrifah- Lecturer

**Staff on Contract. **Staff on Part-time ^lStaff on study-leave.*

OTHER STAFF

Mr. Andrews Bayuko Senior Technician

Mr. Johnson K. Addai
Miss. Mary Agyeman
Mr. Francis Kumi

Asst. Technician
Administrative Assistant
Driver

MAJOR RESEARCH ACTIVITIES

DR. CHARLES, ANTWI-BOASIAKO

1. Comparative wood Anatomy of Secondary (Lesser-Known and Lesser-Utilized) Ghanaian Timber Species.
2. Properties of wood species and Natural Durability Studies of using: a. Field tests, and b. Laboratory tests
3. The use of different strains of decay organisms (especially fungi) in natural durability and biotechnology studies.
4. Preservative Treatment and Chemistry of Wood including Identification, Characterization and Assessment of the use of Extractives as 'Natural Preservatives' in treating Wood.
5. Studies on the propagation, properties (e.g. physic-mechanical and chemical analyses) and potential utilization of bamboo and rattan - A Research Programme in conjunction with ICBR in Beijing, China.
6. Conventional and Contemporary Biomass Energy Production (Charcoal, briquette production from wood residues).
7. Growth performance of forest trees, *Moringa* spp. and other related research issues of the genus.
8. Forest Genetics, Systematics and Botany
9. Tannin production from local plant species and formulation of phenol-free wood-adhesives

MR. JONNY OSEI KOFI

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

PROF. K. FRIMPONG-MENSAH

1. Forest Policy on Wood Residue Utilization in the timber Industry.
2. Identification of durable Lesser Utilized Species for Construction (Bridges, Timber Frame Houses).
3. Sawing Accuracy of Stellite-tipped Saws.
4. Surfacing and finishing of Wood.
5. Furniture Design for Interior Decoration.

6. Wood Packaging material requirements for the International Plant Protection Convention (ISPM 15).
7. Utilization of lesser utilized timber species for light bridge construction.
8. Solid timber waste utilization for briquettes and biomass energy.
9. Utilization of timber for construction.
10. Furniture design in non-timber wood products.

DR. N. A. DARKWA

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

MAJOR SERVICE TO COMMUNITY

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

Dr. C. Antwi-Boasiako

1. As the Head of Department, regular consultations have been held on harnessing the resources of the Department to enhance best practices by students and staff at the Department's wood workshop and laboratory by providing additional tools, equipment and materials for practical work. Patron, Renewable Natural Resources Students Association (RENARSA), KNUST.
2. Chairman – *FRNR Guest House Management Committee*
3. Visiting Lecturer, University of Education Winneba, Kumasi Campus, College of Technology Education. MPhil. Wood Science and Technology - College of Technology Education. 2008 to date.
4. Visiting Lecturer, University of Development of Development Studies, Tamale – Faculty. Of Natural Resources
5. Chief Examiner in charge of Team Leaders in Senior Secondary Certificate Examination (SSCE) Elective Biology. 2006 to date.

6. EXAMINER: International Baccalaureate Organization [IBO], UK. Biology Standard (Diploma) Level, Paper 2.
- 7.
8. Member, MSc (Natural Resource Governance) Programme Development Committee (NUFFIC NPT)
9. Member, MSc (Development Innovations) Programme Development Committee (NUFFIC NPT)
10. PTA Chairman/Board Member, Adisadel College (2012)

Mr. J. Osei Kofi

1. Cognate Member, representing FRNR at the Faculty of Forest Resources Technology, Sunyani campus Team Leader - Tannin Adhesive Project (DWST-FRNR) with Bern University of Applied Sciences, Biel, Switzerland
2. Part-time Lecturer- Garden City University College, Nursing School- courses: Microbiology and Anatomy.
3. Director, Foundation Africa Next Door, Kumasi – A human development oriented NGO with special attachment to vulnerable groups.
4. Member, Catholic Graduates for Action (CAGA), Kumasi, Ghana.
5. Member, Dr, John Kofi Turkson Foundation, Kumasi, Ghana – youth development and energy issues.
6. Team member, Integrated Natural Resource Management (INRM) project, NUFFIC NPT Project 278 at College of Agriculture and Natural Resources:

Prof. Nana K. Frimpong-Mensah

1. Board Chairman, Oweriman Schools, Domeabra, - Ashanti-Akim.
2. External Moderator/Examiner, Department of Renewable Natural Resources, UDS, Tamale.
3. External Moderator/Examiner for National Board for Professional Technical Examinations (NABPTEX).
4. External Examiner for Accra, Takoradi, Kumasi Polytechnics, Departments of Furniture Design and Construction.
5. Board Member of Aninwah Medical Centre at Emena, Kumasi.
6. Member, International Union of Forest Research Organizations, IUFRO.
7. Member, Institute of Professional Foresters, Ghana.
8. Member, National Accreditation Board panel on College of Technology Education programme on Wood Science and Technology.
9. Member, Unity Hall Council
10. Member, Board of Directors of GACON, an Environmental NGO.
11. Researcher and Team leader: Timber Bridges Research Project with BERN University, Switzerland

Dr. N. A. Darkwa

1. Member of the Ashanti Regional Environment Networking committee.

2. Researcher and Team member: Timber Bridges Research Project with BERN University, Switzerland
3. Lead Expert on adhesives, Tannin Adhesive Project (DWST-FRNR) with Bern University of Applied Sciences, Biel, Switzerland

PARTICIPATION IN SEMINARS, CONFERENCES AND WORKSHOPS

Mr. J. Osei Kofi

1. 2nd National Disability Conference, Great Hall, KNUST *Breaking the barriers for the inclusion of Persons with Disability in National Development*. Centre for Disability and Rehabilitation Studies, 9th to 12th Aug, 2011; KNUST, Kumasi
2. 3rd Symposium of the African Network for *Evidence-to-Action in Disability (AfriNEAD). Building Communities of Trust: Evidence-to-Action Disability Research*. 28th – 30th Nov, 2011.

FACULTY OF FOREST RESOURCES TECHNOLOGY

INTRODUCTION

This report covers the 2011/2012 Academic Year. The report looks at students' population and other interesting events.

ADMINISTRATION OF THE FACULTY

The Faculty is administered by the following:

Mr. I. K. Abebrese	-	Acting Dean
Mrs. Christiana A. Appiagyei	-	Assistant Registrar
Mr. Paul Nana-Nketiah	-	Accountant

ACADEMIC DEPARTMENTS

The Faculty runs four academic programmes in the following departments, namely,

1. Social Forestry
2. Wood Processing and Marketing
3. Ecotourism and Forest recreation
4. Land Reclamation and Rehabilitation

STUDENT POPULATION

Student population of the Faculty during the period stood at 354. This was made up of 48 for BSc. 1; 103 for BSc. 2; 92 for BSc. 3; and 111 for BSc. 4. Due to the proposed transfer of the

Faculty to the University of Energy and Natural Resources, the first year students were admitted for the Kumasi Campus.

The Faculty also runs a Sandwich programme in Forest Resources Technology. The total number of students in the programme stands at 74. This is made up of 31 for level 200; 28 for level 300 and 15 for level 400.

RESEARCH AND COMMUNITY PROJECTS

APERL Project

- a. During the year under review, 3 post harvest technology facilities (3 Gari processing factories) were constructed for Fiapre, Dumesua and Ayakomaso communities.
- b. 3 improved charcoal Kilns were also constructed by Agric Engineering Department, KNUST, Kumasi for the 3 communities for the production of environmentally sound charcoal.
- c. Hundred (100) members of the community members were trained in mushroom production in collaboration with an NGO. The project was upscaled to Adoe, Kwamekrakrom and Kobedi communities with the Agroforestry technology (fruit trees and forest trees) cultivation.
- d. The project continued to plant more fruit trees in the communities

Protected Areas and Poverty Reduction (PAPR) Project

The Faculty is engaged in the above research project which is a collaboration between the Vancouver Island University, Canada, Sunyani Polytechnic, the FFRT, the Nature Conservation Research Centre and the College of African Wildlife Management in Tanzania. The research seeks to address the challenges of reducing poverty and ensuring environmental sustainability through a focus on protected areas and adjacent communities in Canada, Tanzania and Ghana. The project, which is funded by the IDRC is sponsoring one Faculty member (Mr. Emmanuel Acquah for a Ph. D in Eco-tourism in a Canadian University.

DEPARTMENT OF SOCIAL FORESTRY

INTRODUCTION

The Department of Social Forestry is one of the four Departments of the Faculty of Forest Resources Technology. It started in the year 2007/2008 academic year. The Department provides knowledge and practical skills to students 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 also supports the Faculty in offering a composite degree in Forest Resources Technology which is run as a sandwich programme.

TEACHING STAFF

1. Mr. I. K. Abebrese - Head of Department

- | | | | |
|----|------------------------|---|-----------------|
| 2. | *Mr. L. B. Antwi | - | Senior Lecturer |
| 3. | Dr. Anthony Adomako | - | Lecturer |
| 4. | Mr. Simon Abugre | - | Lecturer |
| 5. | Mr. A. B. Afrifa | - | Lecturer |
| 6. | Mr. Daniel Akoto Sarfo | - | Lecturer |

*On Contract

Part-time Staff

- | | | | |
|----|-----------------------------|---|----------|
| 1. | Dr. Emmanuel Opuni Frimpong | - | Lecturer |
|----|-----------------------------|---|----------|

ON-GOING RESEARCH BY STAFF

A. B. Afrifa

1. Soil Compaction on Skid Trails after selective logging in Moist Evergreen Forests of Ghana.
2. Assessment of Decomposition rate of *Accacia mangium* litter for rehabilitating degraded mined sites.
3. Availability and Accessibility of Non-Timber Forest Products.
4. Assessment of Star Rating Species Mamire Forest Reserve of Ghana
5. Effect of Different Planting Densities of *Azadirachta indica* on the growth and incidence of *Hypsipyla robusta* on *Khaya grandifoliola* in a mixed stand.
6. The Impact of Mining on Surface Water Bodies (A case study at Golden Star Bogoso Prestea Ltd)
7. Assessing the Contribution of Forest Interest Groups to sustainable Forest Management.
8. Assessment of the Responsiveness of Mining Companies to Demands of Catchment Communities.

Simon Abugre

1. Compatibility of *Jatropha curcas* in an agroforestry system.
2. Allelopathetic properties of *Triplochiton scleroxylon* on four traditional crops.
3. Evaluation of trees left on farmlands (A Case of the Wassa Amenfi West District)

I. K. Abebrese

1. Coping strategies of fringe communities of Bui National Park following Dam construction.
2. Nutrient Status of Soils under teak Plantations of different ages in Tain II Forest Reserve.

MAJOR SERVICE TO COMMUNITY

The Department continues to serve the 3 APERL communities, (namely Ayakomaso, Dumasua and Fiapre) to enhance their livelihood. Training and field visits by staff to these communities are carried out on regular basis.

I. K. Abebrese has been appointed to serve as an Assembly Member of the Sunyani Municipal Assembly. He is a member of the Development Planning Sub-Committee and Agriculture Sub-Committee of the Sunyani Municipal Assembly.

S. Abugre continued to serve as executive member of University Teachers' Association of Ghana (KNUST Branch). He has also been appointed Senior Tutor of Getfund Hostel (Sunyani).

A. B. Afrifa continued to serve as the Faculty Examinations' Officer.

L. B. Antwi: Team Leader, Agroforestry Practices to Enhance Resource-Poor Livelihoods (APERL), **Board Member**, Brong Ahafo Research and Extension Centre (BAREC); **Vice President**, GIF, Brong Ahafo Chapter; and **Board Member**, (PAPR); A Canada-African Research and Learning Alliance

D. Akoto Sarfo continues to be the Secretary Ghana Institute of Foresters (GIF), B/A Chapter and the APERL Project Youth Coordinator. He is currently appointed as the Coordinator of the Sandwich programme

.DEPARTMENT OF WOOD PROCESSING AND MARKETING

Introduction

The Department of Wood Processing and Marketing offers training and research into wood related issues. Their main aim is to provide skillful Wood Scientists and Wood Technologists so that they can contribute effectively to the National development. Thus, the Department prepares graduates to meet national demand for academic skills to effectively work in Timber Industries, Forest Institutions and Research Institutions. The current third year and fourth year Wood Processing and Marketing option classes are seven (7) and twenty-two (22) respectively.

Staff

- | | | |
|-------------------------------|---|-----------------------------|
| 1. Mrs. Sylvia Adu | - | Lecturer/Head of Department |
| 2. Mr. Osei Owusu Antobre | - | Lecturer |
| 3. *Dr. (Mrs.) Mary Apetogbor | - | Lecturer |
| 4. *Mr. Francis Wilson Owusu | - | Lecturer |
| 5. *Mr. Joseph Kwame Appiah | - | Lecturer |
| 6. *Dr. Attah-Abukari | - | Lecturer |
| 7. *Mr. Moses A.Sarfo | - | Lecturer |
| 8. #Mr. Lawrence B. Antwi | - | Lecturer |
- * Part Time Lecturer
is on Contract

RESEARCH ACTIVITIES

MRS. SYLVIA ADU

1. Economic utilization of wood residue.
2. Assessing the Traditional and Kiln method of charcoal production.
3. Assessment of Wood Residues in Energy Generation in Ghana.
4. Assessment of the effect of wood residue on soil.
5. Assessment of the effect of wood residues on water bodies.
6. Assessment of work safety in the timber industry

7. Mechanical strength properties of *Bambusa vulgaris* and *Bambusa virrata* from the Sunyani Localities

MR. OSEI-OWUSU ANTOBRE

1. Mechanical Properties and Structural Utilization Potential of 5-year old *Cedrela odorata* and *Terminalia superba* Trees
2. Effect of Logging on Regeneration of Mahogany species (*Khaya ivorensis*) and Dahoma (*Piptadeniastrum africanum*) in Bura river Forest Reserve
3. Sliced Veneer Conversion ratio of Selected Indigenous Species in Ghana
4. Above Ground Tree Biomass and Carbon Assessment in the KNUST-FFRT Wildlife Sanctuary

PARTICIPATION IN WORKSHOPS AND CONFERENCES

MRS. SYLVIA ADU

1. Conference of Entrepreneurship Educators, Researchers and Entrepreneurs in Africa (CEEREA) at Anita Hotel. November 2011.
2. Workshop on introduction to eLibrary USA, at FFRT – KNUST. March 2012.
3. **Adu, S.** and Adu, G. (2011): Safety Measures in Wood Processing, an Important Component for Entrepreneurship - A case study in a Local Furniture Industry at the 1st International Conference of Entrepreneurship Educators, Researchers and Entrepreneurs in Africa by The Institute of Entrepreneurship and Enterprise Development (IEED) of Kumasi Polytechnic at Anita Hotel (Akyakrom). 28th – 30th, 2011.
4. Adu, G. and **Adu, S.** (2011): The Entrepreneur in Office Furniture Business: Some Critical Technical issues to consider at the 1st International Conference of Entrepreneurship Educators, Researchers and Entrepreneurs in Africa by The Institute of Entrepreneurship and Enterprise Development (IEED) of Kumasi Polytechnic at Anita Hotel (Akyakrom). 28th – 30th, 2011.
5. Adu, G. and **Adu, S.** (2011): The Role of a Furniture Designer in an Entrepreneurial Environment at the 1st International Conference of Entrepreneurship Educators, Researchers and Entrepreneurs in Africa by The Institute of Entrepreneurship and Enterprise Development (IEED) of Kumasi Polytechnic at Anita Hotel (Akyakrom). 28th – 30th, 2011.

MR. OSEI-OWUSU ANTOBRE

1. Workshop on introduction to eLibrary USA, at FFRT – KNUST. March 2012.
2. Mentorship training for Senior members of KNUST, March 2012.

MAJOR SERVICE TO COMMUNITY

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

DEPARTMENT OF LAND RECLAMATION AND REHABILITATION

TEACHING STAFF

1. Mr Nat Owusu, Prempeh – (Lecturer, Head of Department)
 2. Dr D.E.K.A. Siaw - Lecturer
 3. Mr Paul K. Nsiah - Lecturer
 4. *Mr. George Nkrumah Sarpong - Lecturer
 5. *Mr. Bin Mohammed - Lecturer
 6. *Mr. John Ayisi Jatango - Lecturer
- *Part-time staff

OTHER

Mrs. Susana Asiedu-Kumi- Principal Technician

RESEARCH ACTIVITIES

MR. NAT OWUSU PREMPEH

1. Impact of Land use /Land cover change (LULCC) on carbon storage capacity and biodiversity in Savannah Ecosystem in Ghana.
2. Mapping the concentration and spatial distribution of residual Arsenic and other heavy metals in a tailings dam facility at AngloGold Ashanti, Obuasi Mine, Ghana
3. Farmers' knowledge and local practices in the control of termite attacks on Mango plantations in the Northern, Upper East and West Regions of Ghana.

DR. D.E.K.A. SIAW

1. Assessing the socio-economic impact of small ruminant livestock in three communities in Sunyani West District under the APERL project
2. Seed viability and germination of selected indigenous forest tree species
3. Exploring the potential of indigenous tree species in phytoremediation of ex-tailing storage facility.

MR. PAUL KOFI NSIAH

1. Assessment of soil conditions on reclaimed sites (AngloGold Ashanti and Newmont Ghana Gold Limited)
2. Assessment of Revegetation Success on a Reclaimed Waste Dump at Newmont Ghana Gold Limited
3. Assessing the Operations of Fire Volunteers in Wildfire Management at Chiraa Community
4. Farmer's Knowledge and Perception on Wildfire Management and food security

PARTICIPATION IN WORKSHOPS AND CONFERENCES

MR. NAT OWUSU PREMPEH

1. Association for Tropical Biology and Conservation (ATBC) and Society for Conservation Biology (SCB) joint conference. June 12th- 16th, 2011, Naura Springs Hotel, Arusha, Tanzania.
2. Protected Areas and Poverty Reduction (PAPR) International Workshop, 16th - 22nd June, 2011, Usa-River, Arusha-Tanzania.
3. Facilitation Forum for the utilization of Community Fire Guidelines and Manual for Ghana. April 7th - 8th, 2011, Miklin Hotel Kumasi – Ghana
4. Protected areas and sustainable livelihoods issues: Opportunities and challenges from the Pacific Rim National Park Reserve, BC, Canada. Presentation made at the Study Tour Canada, 26th July-27th August, 2010, Vancouver Island University, BC, Canada.

DR. D.E.K.A. SIAW

1. **Participant:** Facilitation Forum for the utilization of Community Fire Guidelines and Manual for Ghana. April 7th - 8th, 2011, Miklin Hotel Kumasi – Ghana
2. Participant: APERL Stakeholders midterm evaluation and review workshop. 24th- 26th March, 2011, Chesville Hotel, Sunyani, Ghana

MR. PAUL KOFI NSIAH

1. Workshop on Instructional Skills organised by Vancouver Island University at FFRT
2. Workshop organised by the Quality Assurance and Planning Unit of the Vice Chancellor's Office on the theme "Integrating into the Vision of KNUST" held on the 18th and 19th of October, 2010

MAJOR SERVICE TO COMMUNITY

Adomako, A.A., Afrifa, A.B. Owusu Prempeh, N. and Acquah, E. (2010). Draft guidelines for undergraduate thesis writing at the Faculty of Forest Resources Technology (FFRT), KNUST

Nat Owusu Prempeh

1. Member, Committee for Rebranding of Unpopular Programmes at College of Agriculture and Natural Resources.
2. Board member, Protected Areas and Poverty Reduction(PAPR); A Canada-Africa Research and Learning Alliance
3. Board Member, Brong-Ahafo Research and Extension Centre (BAREC)
4. Member, Hall Council, KNUST-FFRT Hostel, Sunyani Campus
5. Member, Design and Delivery (D& D) team , CANR project for the institutionalization of Integrated Natural Resources Management(INRM) principles at CANR, NPT 278

6. Member Administrative instrument Committee for the embedding of INRM principles at CANR, KNUST. NPT 278 project
7. Member, College of Agriculture and Natural Resources (CANR) Board, KNUST
8. Member of Faculty Board, FFRT-KNUST, Sunyani campus,

Dr. DEKA Siaw

1. National Treasurer, Ghana Institute of Foresters (GIF)
2. Board member, Vision 2050, a non-governmental organization which is executing carbon credit project in Ghana

Mr. Paul Kofi Nsiah

1. Director, Community Based Fire Management Advisory Group (CFMAG)
2. Member, Hall Council, FFRT-KNUST Hostel
3. PTA Chairman, Anglican Junior High School, Sunyani

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 been awarded a project by AngloGold Ashanti (AGA) Obuasi mine to reclaim and rehabilitate 100 hectare old tailings storage facility at Boete community, near Obuasi. The Department is also collaborating with GHACEM in the QuarryLife project. Two members of staff have currently won an initial award to undertake rehabilitation work at their study sites at Yongwa and Akosombo. The department is also pursuing to undertake similar consultancy services for Newmont Gold Ghana limited.

DEPARTMENT OF ECOTOURISM AND FOREST RECREATION

TEACHING STAFF

1. Mrs. Lucy Aku Gyiele - Head of Department
2. Mr. George Intsiful
3. Mr. Richard Obour
4. *Mr. Emmanuel Acquah, University of Victoria, Canada

***On Study Leave**

Part-Time Staff

1. Mr. K.A. Sasu
Mr. Thomas Amoako-Mensah
2. Ms. Patricia Sallah
3. Mr. Emmanuel Danquah

RESEARCH ACTIVITIES BY STAFF

Lucy A. Gyiele

1. Assessment of visitor satisfaction and customer service delivery at Mole National Park, Ghana
2. Nesting ecology of sea turtles in Ada-Foah: prospect for ecotourism
3. Assessing the population of Bongo antelope (*Tragelaphus eurycerus*) in Ankasa Conservation Area
4. Assessment of ecotourism potentials of Komenda Beach in the Central Region of Ghana

George Intsiful

1. The ecology and the fishery potential of freshwater prawn, *Macrobrachium vollehovenii* of the Pra Basin in Ghana
2. Monitoring Law Enforcement performance in the Kakum National Park in the Central Region of Ghana
3. Ecotourism marketing in Ghana: A case study of the Kakum National Park in the Central Region of Ghana

Richard Obour

1. Evaluating the Muruguru and Mognori Community Resource Management Committees near Mole National Park
2. Assessment of poaching trends in Ankasa Conservation Area
3. Ecotourism potentials in alleviating rural poverty: A case study of Kakum National Park
4. Evaluating the implementation of ecotourism principles: A case study of Kakum Conservation Area

PARTICIPATION IN TRAININGS, WORKSHOPS AND CONFERENCES

Lucy Aku Gyiele

1. Participant: International Conference on the use of integrated natural resources management principles for improving higher education in agriculture and natural resources, organized by College of Agriculture and Renewable Natural Resources of the Kwame Nkrumah University of Science Technology. 14th – 16th March 2012, ICIL, KNUST Campus, Kumasi.
2. Participant: APERL Stakeholders one-day reflection exercise on the 27th January, 2012, Chessville Hotel, Sunyani, Ghana
3. One-day training workshop on e-library organized by the US Embassy Information Resource Centre, 1st March 2012, GIS Laboratory, KNUST-FFRT, Sunyani

George Intsiful

Participant: One-day training workshop on e-library organized by the US Embassy Information Resource Centre, 1st March 2012, GIS Laboratory, KNUST-FFRT, Sunyani

Richard Obuor

Participant: One-day training workshop on e-library organized by the US Embassy Information Resource Centre, 1st March 2012, GIS Laboratory, KNUST-FFRT, Sunyani

Participant: APERL Stakeholders one-day reflection exercise on the 27th January, 2012, Chessville Hotel, Sunyani, Ghana

MAJOR SERVICE TO COMMUNITY

Lucy Aku Gyiele

1. Chairperson: Housing Committee, KNUST-FFRT, Sunyani Campus
2. Member: Estate Organization Management Committee
3. Member: Research / publication Committee
4. Member, Hall Council, KNUST-FFRT Hostel, Sunyani Campus
5. Member, College of Agriculture and Natural Resources (CANR) Board, KNUST
6. Member of Faculty Board, FFRT-KNUST, Sunyani campus,

George Intsiful

1. Hall Master, KNUST-FFRT Hostel, Sunyani Campus
2. Member: Welfare Committee, KNUST-FFRT, Sunyani Campus
3. Member: Library Committee

Richard Obuor

1. Chairperson: Welfare Committee, KNUST-FFRT, Sunyani Campus
2. Member: Housing Committee, KNUST-FFRT, Sunyani
3. Departmental Examination Officer
4. Member: Examination Coordinating Committee

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 and stakeholders for purposes of collaborative research and training of undergraduate students. The key stakeholders of the Department are the Ghana Tourist Board, Sunyani, Kakum, Ankasa and Mole National Parks; Vancouver Island University, Canada.

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. 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 *Xylopiya aethiopicum* 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.

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

1. *Leucaena leucocephala* and *Moringa oleifera* leaf meals in the nutrition of broiler rabbits.
2. Evaluation of graded levels of fish-meal on feed intake, nutrient digestibility and blood profile of growing rabbits
3. Oestrogen and progesterone profiles of postparturient N'Dama cows.

TRAINING

The Station continued to offer its facilities for the practical training of students in the area of livestock production and milk processing. Some final year students of this university undertook their final year projects at the Station. Many second cycle institutions also paid educational visits to the Station during the year.

MAJOR COMMUNITY SERVICE

Many individuals, including students, came to the Station to learn yoghurt production in the course of the year. Many livestock farmers also received advisory services from officers of the Station. The Station assisted some final year students from other Ghanaian universities to undertake their final year project works.

INCOME GENERATION

About GH¢ 100,000.00 was generated by the Station during the year under review to support its research and renovation works.

BUREAU OF INTEGRATED RURAL DEVELOPMENT (BIRD)

INTRODUCTION

In 2011-12 academic BIRD continued to carry out its core business of research, consultancy and outreach. It is noteworthy to mention that in despite 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.

Scope of Operation and Activity

BIRD offers services in four key areas namely: Research and Development Planning, Capacity Building and Institutional Development, Gender and Development, and Entrepreneurial Development of Small and Medium Scale Industries. The specific areas of competence under these broad service areas are as follows:

i. Research and Development Planning

- Policy, Planning and Implementation
- Decentralization and Governance
- Project Planning, Implementation, Monitoring and Evaluation
- Baseline and specialized sector studies
- Natural Resources Management
- Environmental and Public Health education
- Rural Access to Socio-Economic Infrastructure
- Agricultural Development Planning and Management
- Natural Resources Management

ii. Capacity Building and Institutional Development

- Community-based organisational strengthening and capacity building.
- Institutional/Organisational assessment
- Community sensitisation
- Development of training materials
- Institutional strengthening and capacity-building
- Promotion of public/private partnership and management models
- Network support for NGOs

iii. Gender and Development

- Gender specialized studies
- Mainstreaming gender into development
- Women's organizations and development

iv. Entrepreneurial Development

- Training in basic principles of business management
- Training in credit management
- Feasibility studies of rural enterprises
- Enterprise product development
- Enterprise/project appraisal
- Rural and Small-Scale Enterprise development
- Value Chain Development

STAFF POSITION

There are two senior members and one senior member at post supported by five supporting staff.

Two other staff members are currently pursuing PhD programmes as follows:

1. 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.
2. 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. He 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).

RESEARCH

The following research activities are on-going:

1. 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.
2. Development of indicators that will be used to track rural development in Ghana with support from the Ministry of Local Government and Rural Development
3. 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.
4. A study on the status of rural development in Ghana. The research being carried out in collaboration with MLGRD.
5. The Bureau contracted to carry out an impact assessment on the Rural Enterprises Project. The assessment was country wide and funded by IFAD. The contract sum was US\$81,000.

COMMUNITY SERVICE

BIRD continues to offer extension services to a number of District Assemblies and communities through capacity building and training programmes. In the past year BIRD assisted in the community Base Planning and Management for Sustainable Development Committees (SDCs) of the Newmont Ahafo Development Foundation (NADeF). The Bureau has also been tasked to develop two new modules (Economic Empowerment and Collaboration Amongst Contiguous Traditional Areas).

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/CANR – Centre for Development Innovation (CDI) Collaboration

BIRD is leading in the development of MoU between CANR and CDI of Wageningen University that would result in joint design and delivery of programmes and research.

BIRD/Venda Collaboration

BIRD has facilitated a link programme between KNUST and the University of Venda (UNIVEN) 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 has being 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

Short Courses

BIRD is leading CANR in developing a number of short courses to retool professionals in many fields. The course is being designed and delivered jointly with CDI. Some selected course would become sub-regional programmes with full funding support from NUFFIC. The following courses have been designed and will be delivered from this year using the International Centre for Innovative Learning facilities.

1. Gender Issues in Value Chain – International
2. Rural Enterprises and Economic Development – Local
3. Adoptive Management in Natural Resource Management – International
4. Adoptive Management in Natural Resource Management – Local
5. Governance in Natural Resource
6. Seed System in Root and Tuber Crops - International

NPT/GH/NPT 278 PROJECT

BIRD continues 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;

- Impact Assessment of REP
- 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

CHALLENGES OF THE BUREAU

The major challenges of the Bureau are in the areas 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 this 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.

AGRICULTURAL RESEARCH STATION (ARS) – ANWOMASO

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

ACTIVITIES:

The activities of the Station over the period included:-

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

RESEARCH:

Research activities being undertaken at the Station include:

1. Integration of pastures and small ruminants in oil palm plantations
2. Performance of various forage species in the semi deciduous forest zone of Ghana
4. Tolerance of forage species to oil palm canopy cover.
5. Growth response of *Moringa Moringa oleifera* to spacing
6. Effects of different methods of Fertilizer application to growth and yield of *Moringa*
 1. *Moringa oleifera*.
7. Effects of Plant Stand density to growth and yield of *Moringa oleifera*.

PLANTATION DEVELOPMENT AND ARABLE CROP PRODUCTION

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

OTHER COMMERCIALIZATION ACTIVITIES

The Station is embarking on an intensive vegetable production as a short term income generating enterprise and the establishment of Para rubber *Hevea brasiliensis* as a long term income generation to broaden its internal income creation.

EXTENSION AND COMMUNITY SERVICE

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

STUDENTS' VISITS

The second year regular students (20011/2012 group) of Faculty of Agriculture, visited the Station in one of the practical periods to observe and study the various forage species (legumes and grasses) established in the Forage and weeds museum at the Station. The first year students of the Faculty of Agriculture undertook part of their long vacation training at the Station over the period. The following Senior High School students too visited the Station to observe the activities being undertaken for acquisition and improvement of their knowledge

1. Toase Senior High school
2. Maabang Senior High school.

CHALLENGES

The Station still continues to operate without the basic facilities viz: a residential and office accommodation, electricity, water and therefore continues to use an old zinc shed, the only structure available for an office, changing room for workers and students, as well as a store for records, farm inputs and implements. 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 realize due to some of the following set backs:-

1. Old and aging labour,
2. Inability to get casual labour due to low minimum wage rate
3. Ineffective security system leading to pilfering of farm produce
4. Annual bush fires in the dry seasons resulting in the slow development and low yield of palms.
5. Degradation of arable land due to sand winning activities.

COLLEGE OF ARCHITECTURE AND PLANNING

The College of Architecture and Planning is made up of four Teaching Departments and two Research Centres. These are:

DEPARTMENTS

- Department of Architecture
- Department of Building Technology
- Department of Planning
- Department of Land Economy

RESEARCH CENTRES

- Centre for Land Studies
- Centre for Settlements Studies

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

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

Department of Architecture

- ❖ *B.Sc. in Architecture*

Department of Building Technology

- ❖ *B.Sc. Building Technology*
- ❖ *BSc. in Quality Surveying and Construction Economics*
- ❖ *BSc. in Construction Technology and Management*

Department of Planning

- ❖ *BSc. in Development Planning*
- ❖ *BSc. in Human Settlement*

Department of Land Economy

- ❖ *BSc. in Land Economy*
- ❖ *BSc. in Real Estate*

All the Departments run Postgraduate programmes.

ADMINISTRATION OF THE COLLEGE

Provost
College Registrar

Professor E Badu
Mr. O. A. Debrah

College Finance Officer
College Librarian
Assistant College Registrar

Mr. George E. Asamoah
Mr. Agyen Gyasi
Mr. D. Nti Buabeng

ACTIVITIES

HUMAN RESOURCE DEVELOPMENT

The College and the University supported some lectures to obtain their terminal degrees in their areas of specialisation. Three of such beneficiaries returned to post in this period under review. The College also recruited a lecturer who is a product of the Vice Chancellor's Initiative Programme.

INTERNATIONAL CONFERENCE ON INFRASTRUCTURAL DEVELOPMENT

The College organised the first ever International Conference on Infrastructural Development in Africa. It was organised from 22nd to 24th March, 2012 at the Golden Tulip Hotel in Kumasi. The conference attracted a lot of participants from Ghana, Nigeria, Britain, South Africa and many countries across the globe. The College has plans to support members of staff to attend such conferences in subsequent years.

STUDENTS' CAR PARK

The College in partnership with the Ghana Highway Authority and the Students' Society have constructed a Car Park. The creation of the new car park has significantly reduced the traffic congestion at the College.

LAUNCHING OF A BOOK

The College keeps on opening new frontiers of knowledge for professionals and students in the built environment. This year, the College launched a new book titled 'the future of the tree'. The book addresses the growth and development challenges facing Kumasi and its environs. The book also provides an extensive academic literature for research. The book was edited by Prof K. K. Adarkwa, a former Vice Chancellor and Professor of Planning. It was written by the Departmental members of the College. Under the direction of Prof. K.K. Adarkwa, work is far advanced for the publication of another book focusing on the functions of Ghanaian cities.

REHABILITATION OF THE STUDIO BLOCK/ WORKSHOPS

The College is committed to improving existing infrastructure to facilitate the training of its students. To this end, a contract has been awarded to C – Deck Ltd to renovate the four storey studio block. In addition, the studio block for post graduate students in Architecture which is under renovation is almost completed. It is hoped that the contractors would soon hand over the building for use by the students.

INSTALLING VOIP FACILITIES

Last year, the College reported that it was installing Voice Over Internet Phones (VOIP) in the Offices of all its lecturers. The project is about ninety-five percent complete.

SUPPLY OF WATER TO HOUSING AND PLANNING UNIT

The Housing and Planning Unit was faced with perennial water problems. This year, the College through the Maintenance Section of the University has rectified the problem. The unit now enjoys uninterrupted supply of water.

DEPARTMENT OF PLANNING

INTRODUCTION

The Department of Planning has accreditation to train skilled personnel (from undergraduate to PhD level) to promote, coordinate and manage development at the national and sub-national levels. The philosophy of the department is to promote an “integrated process of political, social, economic and spatial dimensions which affect the quality of life of all people”. The Department's approach in tracking development problems is therefore interdisciplinary, reflecting the multi-dimensional nature of development problems.

The Department's main mission is therefore to train skilled personnel required to formulate and manage various development policies and programmes at all levels of national development in line with the National Vision on Socio-Economic Development. 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 rapidly changing socio-economic and spatial development needs of Ghana, Africa and other developing economies.

ACADEMIC PROGRAMMES

The Department of Planning has two undergraduate programmes, namely B.Sc. Human Settlement Planning and B.Sc. Development Planning. The Department also runs two taught post graduate programmes. These are M.Sc. in Development Policy and Planning (Regular and Sandwich) and M.Sc. in Development Planning and Management which is code named SPRING Programme. The Department also runs Research degrees leading to the award of M.Phil in Planning and M.Phil in Development Studies. Research courses in PhD Planning and PhD Development studies are also offered.

The B.Sc. Human Settlement Planning programme which was introduced in the 2005/2006 academic year is making steady progress. Within the next few years the Departments expects to train sufficient Settlement Planners to man the Town and Country Planning Offices in all Metropolitan, Municipal and District Assemblies (MMDA) in Ghana.

STAFF STRENGTH

The Department is made up of one full Professor, one Associate Professor, five Senior Lecturers, thirteen lecturers and one Assistant Lecturer. During the year under review the Associate Professor in the Department was appointed as acting Provost of the College of Arts and social Sciences whilst one of the lecturers is currently on secondment to the National Development Planning Commission. Two Senior Lecturers and One Lecturer are on contract. One member of staff has been awarded a commonwealth scholarship to pursue doctoral studies in Australia.

The student teacher ratio (STR) of the Department stands at 1:43 as against the anticipated norm of 1:18. This implies that the lecturers are overloaded. We hope to recruit more qualified staff in the coming year to improve the STR.

COLLABORATIONS

During the year under review the Department's Flagship Collaboration Programme with the Dortmund University of Technology saw the graduation of its first jointly supervised PhD candidate in November 2011. The Department in collaboration with its partner Universities in Dortmund and Dar es Salam has secured funding to organise its second international PhD Seminar in Arusha, Tanzania.

The Department has also made efforts to reinvigorate its Faculty and Student Exchange arrangement with the Minnesota State University, Mankato, USA.

The Department initiated the signing of a Memorandum of Understanding (MoU) between KNUST and the University of Cape Town in South Africa to pave way for the Department to participate in the preparation of the State of Ghanaian Cities report under the State of the Cities in Africa Project (SOCA) with funding from Cities Alliance.

The Millennium Cities Initiative, the Urban Design Lab (at the Earth Institute of the Columbia University in New York,) the Kumasi Metropolitan Assembly, the Asantehene and the Department of Planning jointly initiated a research that will focus on identifying urban design and physical planning challenges that need to be addressed to help the city of Kumasi achieve the Millennium Development Goals. As a result of this initiative 27 postgraduate students and 6 faculty from the Columbia University came to Kumasi to work with final year settlement students of the Department of Planning.

The Department also took advantage of an existing MoU between KNUST and the University of Reading to collaborate with the School of Real Estate and Planning of the University of Reading for an international work placement programme for its new M.Sc. International Planning and Sustainable Urban Management (IPSUM) students. The Department will implement this programme together with India and Srilanka this year.

In partnership with the National Population Council and the United Nations Fund for Population Activities (UNFPA), the Department has reviewed a training manual captioned "Integration of Population Variables into Development Planning".

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. The Department is taking steps to improve the quality of teaching through research and publication.

DEPARTMENT OF ARCHITECTURE

INTRODUCTION

Over the past years, the Department of Architecture has faithfully responded to the needs of society academically, culturally and socially through its products. All academic programmes developed have been geared towards making the department a Centre of Excellence in architectural education.

Students of the Department are taught various programmes, that makes them effective leaders and competent professionals.

TEACHING

The undergraduate programme is a broad-based one which gives a solid basis for an architectural education that leads to the graduate programme.

Presently, the Department is running both 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, the theoretical courses provide the needed input for the architectural content of the students' drawings.

Students of architecture are expected to successfully complete the undergraduate programme if they wish to be professional architects, architectural scholars and leaders of technical teams responsible for the development of the built environment.

The staff strength has been boosted recently by the return of a Senior Member who has completed his Ph.D studies in the U.K.

NEW PROGRAMMES

In the previous year's report, the Department stated its intention to introduce new courses at both the undergraduate and graduate levels. Discussions are still on-going and hopefully these new courses will start soon. The Master in Architecture (M.Arch) programme which has been re-structured has now started as a fully fledged course to replace the Post-graduate Diploma in Architecture. With the (M.Arch) degree, students can now take up further studies which will lead to doctoral degrees. The Department intends to add Doctoral programmes to its current list of courses in future.

A one year research-based Master of Architectural Studies degree programme will be started in the 2012 /13 academic year for practicing architects who already have the Post Graduate Diploma in Architecture

The M. Phil Degree programme in Architecture, still continues with specialisation in Housing, Architectural History, Urban Design, Architectural Design and Environment Behaviour. These programmes would further help strengthen the theoretical and academic components of graduate programmes in the Department and prepare graduands for higher or terminal degrees. It will also enable them to specialize and focus on relevant and beneficial areas within the context of the built environment.

STUDENT POPULATION AND COMPOSITION

The Department of Architecture's current student population are as follows:

MPhil	3
M.Sc.	4
M.Arch	88
PG Dipl. In Arch.	79

B.Sc. (Arch)	304
Total	478

RESEARCH ACTIVITIES

Each year, as part of the curriculum of the Department, second and third year classes conduct research activities by way of field surveys in rural and urban areas. These surveys serve as the basis for the respective year's 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 urban centre selected for the year's work.

This year the 2nd year conducted a two week survey of Kwamo, near Ejisu whilst the 3rd year conducted theirs in Kumasi. In recent years, lack of funds and logistics has made the 5th year concentrate on the CBD of Kumasi for field studies. In addition to this, some members of staff have also conducted research on individual or group basis to facilitate the writing of papers for publication in refereed journals

COLLABORATION

Trasacco Ltd, a major construction firm in the country, continues to collaborate with the Department for the mutual benefit of both parties. Five students are selected from the final year undergraduate group to work in their design offices and construction sites after which one student is awarded a scholarship for graduate studies.

The Ghana Institute of Architects continues to visit the Department to help with the design studios and facilitate seminars and workshops.

INTERNATIONAL AFFILIATIONS LINK/ INTERNATIONAL RELATIONS

KNUST/University of Michigan, Academic Link

This link with the University of Michigan has been in existence for over seven years. Each year their students come over to Ghana for a Summer School. This will continue in the 2012/2013 academic year.

KNUST/Katholieke 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

Discussions are also on-going with the Nottingham Trent University of the United Kingdom, for some form of collaboration. Their Dean of the School of Architecture, Design and Built Environment, visited the Department earlier this year to kick start this relationship.

Formation of Association of Schools of Architecture in Africa

The Department has been selected to co-host the Aga Khan Award for Excellence in Architecture whilst the inaugural meeting of the Schools of Architecture will be held at the Golden Tulip Hotel in Accra in June 2012.

CENTRE FOR LAND STUDIES

The Centre for Land Studies is a Research Department within the College

FUNCTIONS

The functions of the Centre are primarily in the realm of land administration, land management and development. The focus is on:

- 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.

The Centre also carries out the dissemination of its research output through seminars, workshops, conferences and direct research reports mailing to appropriate organizations, institutions and the general public.

STAFF

R. Kasim Kasanga;	Professor/Head
K. Opong Nkrumah;	Research Fellow
Mark Owusu Yeboah;	Research Fellow

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 Natural Resources 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, and the University of Munich, Germany; etc.

Selected Research Output

Selected research works that have been accomplished so far include the following:-

- Land Ownership and Acquisition in all the ten regional capitals of Ghana - A Study funded by the then Ministry of Lands and Natural Resources under the mandate of the Centre to investigate ownership and tenurial arrangements in the capital cities of Ghana.

- A Review of Integrated Rural Development Projects in Ghana. This was commissioned by USAID for the evaluation of the impact of developmental assistance to selected communities.
- Women's access to Land in selected communities in Ghana. This research was sponsored by DFID with the objective of establishing the vulnerability of women in acquiring land for agricultural production.
- Valuing peri-urban natural resources is a study of relative costs and benefits to stakeholders in land conversion in peri-urban Kumasi. This study was undertaken in collaboration with a team of experts from the U.K. and sponsored by DFID.
- Legal institutions and protection of land rights. This was a collaborative research with Dr. Richard Crook of IDS, University of Sussex, U.K. and funded by DFID. It was a study into land ownership, tenure and dispute resolution mechanisms.
- Kumasi Natural Resources Management Research Project, towards Sustainable livelihoods of people in the Kumasi Peri-urban Areas. This project was sponsored by DFID and coordinated by the Natural Resources Institute of Greenwich, U.K. Its focus was on the effect of urbanization on the control of and access to natural resources.
- Further Knowledge of Livelihoods affected by Urban Transition in Kumasi. This was sponsored by DFID in collaboration with the University of Birmingham, U. K. The principal objective of this study was to find new knowledge to fill any gaps in existing knowledge on livelihoods affected by urban transition.
- Documentation of literature on customary land law. This project involved the documentation of available literature on various customary land laws within the various ethnic groups in Ghana. This was done for the National House of Chiefs and the Law Reform Commission.
- Land Rights and Vulnerability Assessment. This project examined various rights/interests in land in established Customary Land Secretariat offices in the country and the ease with which various stakeholders especially the poor and women can assess land in the study areas.
- Education and Awareness Creation on the Implementation of the new Lands Commission Act (2008) Act 767. This project was undertaken under the Small Grants Program of the Land Administration Project (LAP). The aim was to support activities of Civil Society and Non-Governmental Organizations in institutional building, advocacy, governance and participatory efforts in national land issues. The project focused on the education and awareness creation in the registration/documentation procedures as well as 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 “Equitable Forest Reserve Plantation Revenue Sharing amongst all stakeholders in Ghana”.

SPECIFIC ACHIEVEMENTS

- **Land Title Registration in Ghana**

The Centre initiated and developed a concerted and systematic research effort towards the introduction of Deeds/Title registration in Ghana. It has successfully created the awareness of the essence of Title/Deeds registration as a means of securing valid title to land. The positive effects of this are now felt by the government, chiefs and the public as evidenced by the increasing volume of Title and Deeds Registration undertaken by the Lands Commission.

- **Land Tenure Reforms**

Through its systematic research and dissemination of information, the Centre has been able to confirm the fact that the country’s indigenous land tenure arrangements have certain positive ingredients worth preserving. As a result, land nationalization, which hitherto was a thorny and politically sensitive issue is no longer part of the debate in the land reform process in Ghana.

- **Halting Land Desertification**

In collaboration with the Council for Scientific and Industrial Research (CSIR) and the United States Agency for International Development (USAID), the Centre conducted a research project in North-Eastern Ghana. With appropriate policy recommendations submitted to Government, a national awareness for 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 and Government agencies towards protecting and conserving the Northern Savannah ecological zone and preventing the advancement of the desert southwards.

- **Land Policy Reforms**

Research of immense policy value and practical application carried out by the Centre are in the area of housing and peri-urban research, rural development, Land Taxation, and Land Use Planning. The Centre is one of the focal points of the Land Administration Project (LAP) of the Ministry of Lands and Natural Resources which is currently implementing the land reform programme in the country.

On-going Research

The centre is currently undertaking research in the following areas:

- **Towns in Ghana**

This is an on-going research in collaboration with the department of planning. It reviews the book, ‘Towns in Ghana’ written by Groove and Houzer. The study is to find out changes in the hierarchy of towns since 1965.

- International concerns on land grabbing in developing countries: The case of Ghana. This research is in collaboration with Mr. Kidido, of the Department of Land Economy.

TEACHING SERVICES

Staff of the Centre participate in teaching programmes, including students' supervision, at the Departments of Land Economy, Planning, Community Health, Biological Science and Civil Engineering.

CONCLUSION

The Centre has progressively achieved its mandate over the years and will continue to impact positively on land and related research matters in the country.

DEPARTMENT OF LAND ECONOMY

INTRODUCTION

Land is fundamental to human survival and is also of critical social, economic, religious and cultural significance to most Ghanaians. The utilization and management of land as a resource therefore has far-reaching consequences for both current and future generations.

Over the last four decades, the Department has been at the forefront in training and equipping professionals with relevant skills in land resource utilization and management. The department offers courses leading to the award of BSc. Land Economy and BSc. Real Estate degrees.

STAFF STRENGTH

Prof. S.O. Asiama♦	-	Associate Professor
Dr J.T. Bugri	-	Senior Lecturer/Head
Dr D.N.A. Hammond♦	-	Senior Lecturer
Mr. W. M. Adolwine	-	Lecturer
Mr. A. Gambrah	-	Lecturer
Mr. J. Z. Ayitey	-	Lecturer
Mr. E. P. Tudzi	-	Lecturer
Dr. F. Gyamfi-Yeboah	-	Lecturer
Ms Serwaa Adjei-Mensah*	-	Lecturer
Dr. C.A. Mahama∞	-	Lecturer
Mr. E.K. Gavu	-	Assistant Lecturer
Mr J. Kidido	-	Assistant Lecturer
Mr. J. Frimpong Asante	-	Technical Instructor

♦ *On Contract* * *On Study Leave* * *On Leave of Absence*

STUDENT POPULATION

At the undergraduate level, the student population stands at 582, representing an increase of 14% over the previous year. On a gender basis, 379 (65%) are male, while 203 (35%) are female. This shows an increase in female population from 33% to 35% over the last year. On the basis of programme distribution, 402 (69%) are enrolled on the Land Economy programme, while 180 (31%) are on the Real Estate programme.

Given the current student population and staff strength, a Staff-Student Ratio (STR) of 1:49 exists and plans are in place to add onto the current staff strength.

RESEARCH ACTIVITIES

Staff research activities were in diverse fields and included:

- Land tenure and policy
- Local governance
- Land revenue mobilization
- Infrastructure and the disabled
- Valuation and compensation
- Gender and land rights
- Real estate development and finance
- Environment and development

PROFESSIONAL AND LOCAL AND INTERNATIONAL LINKAGES

During the year under review, the BSc Land Economy and BSc Real Estate degree programmes were offered accreditation by National Accreditation Board. The Department in collaboration with the Ghana Institution of Surveyors and the West Africa Chapter of the Africa Real Estate Society organised a Seminar on the theme: “Accelerating the Impact of Real Estate Education and Practice in Developing Economies. This was held at the NODA Hotel in Kumasi from 9-12 August 2011. The Department continues to provide active support to the Land Administration Project and Civil Society Coalition on Land (CICOL).

SERVICE TO COMMUNITY

Staff continue to be of service to local, national and international communities. **Prof S. O. Asiamah** serves on the National Policy Steering Committee of the Land Administration Project (LAP). **Dr. John Bugri** continued to serve as the representative of the College of Architecture and Planning on the Students’ Financial Services Management Board and also represents the Ghana Institution of Surveyors on the Board of the Brong Ahafo Regional Lands Commission. **Dr. Daniel Hammond** continued his role as external examiner and moderator to the Estate Management Department of the Kumasi Polytechnic. In the case of **Mr. Eric Tudzi**, training of student leaders and provision of career guidance and counseling to students through GHAFES and membership of KNUST Branch of KNUST Alumni Association at the executive level engaged his attention. **Mr. Jonathan Ayitey**, continued as member of the Senior Members Housing Committee, representative of the College of Architecture and Planning on College of Science Board, Fellow of University Hall, member of the Property and Legal Committee of Ghana Watchtower Bible and Tract Society, and also the Examinations Officer of our College. **Mr. James Frimpong-Asante** continues to provide free consultancy services to the Kings Village Project at Bontanga in the Tolon-Kumbungu district of the Northern Region. **Dr Frank Gyamfi-Yeboah** returned from study leave and serves as the representative of the Department on the Council of the Ghana Institution of Surveyors.

CENTRE FOR SETTLEMENTS STUDIES

MANDATE

The Centre for Settlement Studies is mandated to conduct research into human settlements and planning issues and also devise interventions to address the socio-economic and housing needs of rural and urban poor.

Over the last decade, the Centre broadened its focus to include policy- oriented research on other aspects of human settlements. This is in line with the Ghana National Development Policy framework on poverty reduction and wealth creation. The Centre's current issues in the areas of research and development of human habitat include: population and employment, urbanization, housing, vulnerability, livelihood analysis, gender, poverty, infrastructure and service, land use planning and physical development, governance and decentralization, and settlements management.

RESEARCH STAFF

The research staff of the Centre are:

Romanus D. Dinye;	Associate Professor/Head
Rudith S. King;	Senior Research Fellow
Joseph Edusei;	Senior Research Fellow
Paul K.B. Asamoah;	Senior Research Fellow
Devine K. Ahadzie;	Senior Research Fellow
Henry Boafo;	Research Fellow

The Centre has 26 supporting staff comprising stores superindentant, administrative personnel, technicians, artisans and labourers. The Carpentry and its allied workshops play a vital role in the University. Apart from assisting students to undertake their project work, it supplies furniture and wood products on demand.

PROMOTION OF KNOWLEDGE

SHORT COURSES

The Centre has successfully developed and runs two (2) short courses for lecturers, researchers, postgraduate students, staff of other tertiary institutions as well as practitioners in the construction industry. :- *i) Course on Contemporary Issues in Research Methodology and the Use of Factor Analysis in Social Science and Management Research; and Building Construction Regulations and Environmental Management.* The Centre successfully organised a training workshop in Building Construction Regulations and Environmental Management for Building Inspectors and Construction Technician Engineers of the various Metropolitan, Municipal and District Assemblies nation-wide.

RESEARCH OUTPUT

In collaboration with the International Water Management Institute (IWMI) of Germany, the centre completed a research on the impact of the Bui Dam on the communities in its catchment area. The output of the work probably influenced the decision on compensation given to members of the communities affected.

In collaboration with the Institute of local Government Studies, the Centre organised a Workshop on Policies for Accelerating the Decentralisation Process in Ghana at Miklin Hotel.

TEACHING ACTIVITIES

The Research Fellows of the Centre also lecture and supervise students' project in the various departments of the colleges.

INCOME GENERATING ACTIVITIES

The Production Units of the Centre has a workshop which produces door and window components as well as 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 and value added by the Centre.

DEPARTMENT OF BUILDING TECHNOLOGY

INTRODUCTION

The Department of Building Technology is one of the four teaching Departments of the College of Architecture and Planning.

The products of the Department are employed in the public and private sectors of the construction industry. A sizeable number are also employed in Universities and Polytechnics as Lecturers and Research Scientists.

The Department is currently running two BSc. programmes at both regular and distance education levels. These are

- BSc. Construction Technology and Management (CTM)
- BSc. Quantity Surveying and Construction Economics (QSCE)

In the addition to the above programmes, the Department in collaboration with the Institute of Distance Learning (IDL) also runs two-year Top-Up programmes in Construction Technology and Management and Quantity Surveying and Construction Economics for Higher National Diploma holders.

At the postgraduate level, the Department of Building Technology offers four programmes in:

- MSc. Construction Management
- MSc. Procurement Management (started 2011/2012 academic year)
- MPhil Building Technology
- PhD. Building Technology

STAFFING

The Department of Building Technology has staff strength of 15. Currently, staff/student ratio at the undergraduate level stands at 1:36 as against the 1:12 required by the university. A number of Lecturers from other departments in the university, however, provide teaching service to the Department in areas such as Engineering Surveying, Mathematics and Statistics, English, Operational Research, Financial Management and Economics.

Staff Training

Three senior members of staff are currently pursuing PhD Studies and it is hoped that they will soon join the department.

RESEARCH

Lecturers in the Department undertake research in various disciplines in the construction industry. Publications emanating from such research efforts published both locally and in international journals, contribute significantly to existing knowledge in the construction industry in Ghana. The Department's research output has seen tremendous improvement over the last three years as depicted by the University Quality Assurance Bulletins. At the end of the 2010/2011 academic year, two young members won the first and third position of the University's Most Promising Young Researcher's Award.

In the year under review, research in the department covered these areas:

1. Sustainable and Lean Construction
2. Construction Education and Training
3. Incidence of domestic fire outbreaks in Ghana: Causes and prevention.
4. Utilization of indigenous materials in construction
5. Construction industry development
6. Accessibility of public buildings in Ghana
7. Construction disputes management
8. Human resource management
9. Construction Economics and Financing
10. Infrastructure Development and Management
11. Innovative Financing of Infrastructure
12. Business Strategy, Marketing, Logistics and Supply Chain
13. Climate Change, Sustainability and Environment

Publications arising from research activities in the Department

Within the 2011/2012 academic year, a total of 40 papers were published in the Department. These include 4 books, a Chapter in a book, 1 book review, 16 refereed journal papers and 24 peer reviewed conference papers.

CONFERENCES ATTENDED

Members of staff of the Department participated in a number of local and international conferences including the following:

1. West Africa Built Environment Research (WABER) Conference, 19-21 Jul. 2011. Accra, Ghana
2. 6th Built Environment Conference 31 July-2 Aug. 2011. JHB, South Africa.
3. 1st International Conference on Infrastructural Development in Africa, Kumasi, Ghana
4. The CIBW 107 International Conference on Innovation and sustainable construction in developing countries 1-3 Nov. 2011. Hanoi –Vietnam
5. ICoPFM 2011 International Conference on Project and Facilities Management, 18 -19 May 2011. University of Malaya, Kuala Lumpur, Malaysia.

PARTIAL REVIEW OF CURRICULA

Within the 2011/2012 academic year, the Department of Building Technology undertook a partial review of the curricula for the BSc Construction Technology and Management and the BSc Quantity Surveying and Construction Economics programmes, which have run for four

years. The new document has since been forwarded to the Academic Board for consideration and approval. When approved, it will be implemented in the 2012/13 academic year.

SERVICE TO COMMUNITY

Staff of the Department of Building Technology has provided diverse service to the University community and to other organizations in Ghana. Services the Department provides include the following:

1. Consultancy Services: As cost consultants and quantity surveyors on projects in and outside the University.
2. Manufacturing of Classroom Furniture for all departments and offices in the University.
3. Chairpersons and Members of Statutory Committees and Boards
4. National Council Members of the Ghana Institution of Construction (GIOC)
5. National Council Members and Fellows of the Ghana Institution of Surveyors (GhIS)
6. External Examiners, Reviewers, and Moderators of other Universities and Polytechnics in Ghana, KAAF University, University of Education-Winneba, Kumasi Polytechnic, Cape Coast Polytechnic, Sunyani Polytechnic, Tamale Polytechnic etc.
7. Representatives of the Chartered Institute of Builders International
8. Boards Members of some Second Cycle Institutions.
9. Chairpersons of Building Committees of Religious Organizations and NGOs

LOCAL/INTERNATIONAL LINKAGE

Institutional Linkages

The Department has strong linkages with all Polytechnics in Ghana, providing services such external examiners, reviewers, and moderators, and also with KAAF University, Budumbura. There is also a strong linkage with the Council for Scientific and Industrial Research through the Forestry Research Institute of Ghana and the Building and Roads Research Institute. There are also strong linkages with professional bodies in the construction industry such as Ghana Institution of Surveyors (GhIS), Chartered Institute of Builders (CIOB), Ghana Institution of Architects (GIA), Ghana Institution of Engineers (GhIE) and Ghana Institution of Construction (GIOC).

There also exist inter-departmental collaborations with the Department of Architecture, Department of Planning and Department of Horticulture in the University. Staff of the Department of Building Technology provides teaching services to these departments.

International Linkages

The Department of Building Technology is affiliated to the following overseas universities:

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

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

The terms of the MOU with these two institutions include exchange of Lecturers, Post-Doctoral visits, Visiting Professorship, student exchanges, industrial and institutional visits etc. There is a current plan for final year students of IDL to pay an industrial visit to South Africa under the auspices of the Dept of Construction Management and Quantity Surveying of the Faculty of Engineering and the Built Environment, University of Johannesburg.

DONATION

The Department of Building Technology took delivery of 113 copies of 10 International Journals donated by Prof. George Ofori, of the Department of Building of the National University of Singapore. Prof. Ofori has in the last four years donated several copies of assorted journals to the department. This have partly accounted for the improvement in research efforts at the Department.

VISITING PROFESSOR

The Department hosted Professor David Edwards, a visiting Professor from the Birmingham City University, UK two weeks during which he presented seminars and also gave guidance and directions to PhD and MPhil students in the Department. Professor Edwards has been appointed a supervisor to some PhD students in the Department.

INCOME GENERATION ACTIVITIES

The Carpentry and Joinery section of the Department continued to generate income for the Department. This section manufactures tables and chairs and other woodwork for the University community as part of its teaching/research functions. The Department's internally generated fund has seen a sharp increase over the last three years. Within the 2011/2012 academic year, the workshop generated over GHc 50,000 to finance teaching, learning and research activities in the Department.

A NEW MSc. PROCUREMENT MANAGEMENT PROGRAMME

The department has started a two (2) year *Master of Science (MSc) degree in Procurement Management* since the beginning of the 2011/12 academic year. The development of the programme was to fill the noted human capital deficiency in procurement practice.

COLLEGE OF ART AND SOCIAL SCIENCES

FACULTY OF SOCIAL SCIENCES

DEAN'S OFFICE

The Faculty of Social Sciences is still the largest faculty in the entire university in terms of number of departments and 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 key officers of the Faculty are;

Dr. Kofi Osei Akuoko	(Dean of the Faculty)
Dr. (Mrs) Fredericka Dadson	(Vice Dean)
Mr. Nicholas Nyamekye	(Faculty Librarian)
Mr. Felix Asante	(Faculty Examinations Officer)

There are fourteen (14) undergraduate programmes in the faculty. 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 in Geography and Rural Development and Culture and Tourism, and the Department of Modern Languages also offers two separate programmes in French and Akan. At the beginning of 2012/2013 academic year the Department of Sociology and Social Work will offer two separate programmes, in Sociology and Social Work.

All the undergraduate programmes are also offered under our Part-Time/Parallel programmes.

The student-lecturer ratio is still much higher than the required mandatory ratio. We are therefore 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 undertake advanced basic and applied 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 ensuing Departmental Reports. We continue to collaborate with sister universities from Denmark, China (UEST), Canada, United Kingdom, the USA and a host of institutions across the African continent. The French embassy in Ghana has provided technical and financial support to the Department of Modern Languages. The British Council is also supporting the English Department with technical facilities to enhance the teaching of English Language.

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 support the socio-economic development of Ghana.

FACULTY OF SOCIAL SCIENCES BUILDING

In December of 2011, the Faculty renewed its efforts towards the construction of a Faculty building to house all its departments in the near future. A three-man committee was put together to spear-head these efforts.

The Provost led the Faculty's Building Committee to hold consultations with representatives of the Director of Works. In March, land was identified for this project opposite the KNUST School of Business and the survey work done.

Drawings completed for a proposed Faculty Building four years ago have been handed over to the representatives of the Director of Works for study and amendments. Now that land has been secured for the project, the Faculty will begin work on sourcing funds for it.

DEPARTMENT OF ENGLISH

In the 2011/2012 academic year the major activities of the Department of English were in two main areas of reviewing its undergraduate and postgraduate academic programmes, and preparing a detailed proposal on the institutionalisation of the study of English for Francophone students of KNUST.

REVIEW OF ACADEMIC PROGRAMMES

A tradition has been established in the Department which prompts the review of its undergraduate and postgraduate programmes every five years. This exercise enables the Department to adjust appropriately to contemporary trends in the study of English language, literature, and other related areas such as Communication (Print & Electronic). The review this year focused on designing more English courses for undergraduate programmes to effect a balance between literature and language courses for the ultimate benefit of undergraduate programmes. The review programme begins at level 100 in the 2012/2013 academic year.

At the graduate level, the review is ongoing because it involves, at this stage, the input of experts in the study of language who can assist the Department to cater to the interests of a new crop of applicants seeking to improve themselves in the teaching of English at the secondary and tertiary levels. Experts have been identified who will assist the Department in designing English Language courses for the MPhil/PhD programmes. They should be ready for the 2013/2014 academic year.

INSTITUTIONALIZATION OF THE STUDY OF ENGLISH FOR FRANCOPHONE STUDENTS

Upon request from Academic Board, the Department of English has this past year worked assiduously on the above stated project. At the end of March 2012, Academic Board approved the proposed short course for the increasing number of foreign non-English speaking students who are admitted into both graduate and undergraduate KNUST academic programmes. The

Department is putting together a few resources to begin teaching in the 2012/2013 academic year. Fortunately, the University has allocated space at Destiny Hall for this service.

COLLABORATION

The Department, with the active involvement of the Association of Students of English (ASEK), has made contact with the British Council, seeking to revive the Council's support for the study of English. There already are strong indications that the Council would be willing to send us experts to assist the Department identify areas of support not only for its academic programmes but also for the provision of a language laboratory and other resources for the teaching of English as a Second Language, which would boost the study of English in no small way.

A former student of the Department of English, and one of its pioneer M.A. Programme students, Dr. Yaw Adu-Gyamfi of the English and Modern Languages Department of Liberty University, U.S.A., is currently facilitating a scholarship scheme for two of our students to undertake courses in the Teaching of English as a Second Language. Such training should support not only the Department's remedial programme for foreign students but, more importantly, provide personnel for the teaching of some of its new language courses.

INCOME GENERATING ACTIVITIES

The Department continues to provide students with Proficiency Certificates in English for which a small fee is charged. It is expected that the short course in proficiency in English for non-English speaking students to the University should generate some more income for the Department and the University.

SERVICE TO THE UNIVERSITY

The Department, in spite of major constraints, continues to provide service courses in English language and literature to students from all academic units of the University. It also plays a central role in the setting of questions, supervision and marking of examination scripts for mature candidates to be admitted to programmes within the Faculty of Social Sciences.

MPHIL/PHD PROGRAMMES

For the past fifteen years the Department's postgraduate programmes, re-accredited in April 2011, have held steady even in the face of staff constraints. It graduated two PhD candidates and five MPhil candidates during the past year.

STAFF RESEARCH/CONFERENCES

In the year under review, Dr. Esther Serwaa Afreh successfully completed her PhD studies and was awarded her degree in March of 2012 by Legon. In June/July, 2011 she attended two conferences in Maryland, U.S. A. where she presented a paper at the 42nd Annual Conference on African Linguistics ("The Semantic Network of the Akan Posture Verbs da 'lie', gina 'stand' and te/tena "sit"), and in Xi'an, China where she presented another paper on Cognitive Linguistics.

Since April 2011, Dr. F. Dadson has been working with a team of researchers from the University of Cape Coast and Legon on an anthology of folktales from every corner of Ghana. This first assignment is being processed after submission of the tales. Dr. Dadson is working closely with Dr. Sanka on this project. The next phase is the writing of scholarly essays to complement the anthology of tales.

DEPARTMENT OF GEOGRAPHY AND RURAL DEVELOPMENT

INTRODUCTION

The Department of Geography and Rural Development (DGRD) is one of the seven (7) Departments of the Faculty of Social Sciences in the College of Art and Social Sciences. The demand for its delivery of teaching, learning and Research continues to be 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: The College of Science, the College of Health Sciences; the College of Agriculture and Mechanical Engineering all in the Kwame Nkrumah University of Science and Technology (KNUST).

In consonance with the university's core values and objective of offering top-notch teaching and research activities, the Department of Geography and Rural Development offers a wider range of courses ranging from Geomorphology, Climatology and Biogeography, Cartography and Mapwork, Gender and Population Studies, Decentralisation and Rural Development, to Geography of Tourism and the new state of the art tool for Geographic Research, that is Geographic Information Systems (GIS).

Teaching and learning activities in the Department are motivated by the expectation that the Department's quota of first grade students will be turned-out into outstanding and versatile graduates, ready to take higher responsibilities and challenges in all fields of endeavour.

The Department continues to deliver courses leading to the Award of the Four (4)-year Bachelor of Arts Degree and also coordinates and runs the Four (4)-year Bachelor of Arts Degree in Culture and Tourism concurrently, as undergraduate programmes. It also offers a Two (2)-year M.Phil 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 1 Full Professor, 1, Senior Lecturer and 15 Lecturers. The head of department is assisted by 1 Administrative Assistant.

Staff-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 SUNNY Geneseo since 2010 through the help of the former Head of Department, Dr. (Mrs) Eva Tagoe-Darko.

The Department's lecturer and 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, to 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 of 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. Partly, 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 U.S. A. 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 Reading Room/Publications on 25th April, 2011. This was in fulfillment 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 also hopes to enhance its research drive to a level that will facilitate the rapid promotion of members. To aid teaching and research the Geographic Information Systems Laboratory (G.I.S.) is currently equipped with twenty (20) state of the art computer tables and chairs. The twenty five (25) computers donated by the State University of New York Geneseo Campus have been collected from the Stores and Procurement Department ready for the necessary internet connections to start operating as our G.I.S. Lab.

As mentioned earlier, the Department's Lecturer and Cartographer, Mr. E.K. Garsonu has as an interim measure, installed some G.I.S. and Remote Sensing software which he uses to teach and provide practical demonstrations to our students while we await the necessary networking installations already submitted to procurement/tender. It is also envisaged that the practical dimensions of the various courses will be enhanced through frequent field works and case study methodologies

The department intends to offer improved/modified and upgraded demand-driven courses on full-time, part-time and through distance education modules.

In conclusion, in spite of the 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 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, organized a series of activities and hosted a few visitors in the course of the 2010/2011 academic year.

The Department runs two undergraduate programs at present. These are:

1. B.A. History and
2. B.A. Political Studies.

However, the Department is at an advanced stage in introducing three post graduate programs in History. These will be:

1. MA History (including MA in Archives Administration/Archival Studies)
2. MPhil History and
3. PhD History

STAFF MOVEMENTS

Two of the staff members were granted study leave at the end of the academic year. Dr. W.J. Donkoh won a Fulbright award and was granted five months study leave which she spent at the College of William and Mary at Virginia. Mr. Kwasi Amakye-Boateng was also granted a three year study leave to undertake his PhD at the University of Ghana.

Professor Charles Adom Boateng joined the Department on sabbatical leave from the Kean University at Union in New Jersey for the academic year. He has now been appointed as Adjunct Professor of Political Science in the Department. Dr. Nicholas Yaw Amponsah from the University of Ghana was also appointed at the end of the year to spend his sabbatical leave in the Department. He will take up that appointment in July this year.

Four new lecturers were also recruited into the Department. Three of these were products of the Vice-Chancellor's Initiative to train staff for the University. They are Dr. Mariama Marciana Kuusaana, Dr. Ali Yakubu Nyaaba and Dr. Daniel Owusu-Ansah.

The fourth person, Dr. Frankie Asare-Donkoh resigned after four months at post and returned to the UK.

RESEARCH ACTIVITIES

Senior Members in the Department undertook various research activities that strengthened their teaching and also provided information for the general public. Some of the research activities have already led to publications.

OTHER ACTIVITIES

The Kwantlen Polytechnic University of Vancouver, BC teamed up with the Department to test-run a Pilot Project on a Webconferencing Course on Globalisation in Kumasi. The same University is in collaboration with the Department to co-host the Second Kwame Nkrumah International Conference (KNIC2) at KNUST in September this year.

The Department was visited by two universities from the United States and from Switzerland. Central Michigan University and Basel University.

The Political Studies Program which has been running for six years was moderated in the course of the academic year by Professor Kwame Boafo-Arthur of the Legon Centre for International Affairs and Diplomacy (LECIAD)

Again, the Public Affairs Section of the United States Embassy in Accra donated a set of books to the Department.

AWARDS

Two of the students from the graduating class in History received the prestigious Peggy Appiah Prize for Excellence in History. The prize was awarded to them at an impressive ceremony at the Council Chamber by His Excellency, John Agyekum Kuffuor, former Head of State. They are Miss Amisah Zenabu Bakuri and Miss Theresah Hutchinson.

CONCLUSION

The 2010/2011 academic year was a fruitful year for the Department,

DEPARTMENT OF MODERN LANGUAGES

INTRODUCTION

The Department of Modern Languages, made up of two sections, French and Akan, continues to engage conscientiously in its core business of equipping more students to meet the developmental needs of the nation. Service to the community has equally engaged faculty and the Department as a whole over the year.

TEACHING

French and Akan- Bachelor of Arts Programme

The academic staff was strengthened by the arrival of two French Technical Assistants: Ms. Marie Legresy and Sylvain Connan. Apart from our core business of teaching French Language, French Linguistics and Francophone Literatures, the Akan Language, Linguistics and Literature, we have been encouraging and motivating students to use both languages in positive ways, in areas such as theater arts, media and other practical programmes.

The Akan Section has enjoyed patronage of the study of Akan on the international circle. This year, three students, one from the University of Maryland College Park, USA and 2 from the Universiteit Leiden, Netherlands were offered admission to read Akan/Twi programme in the Department.

MPhil, PhD Programme

In the year under review 20 candidates were admitted to read MPhil (French) and two candidates to read PhD (French). A proposal for the introduction of MPhil Akan has been forwarded to the appropriate quarters for approval.

Staff

The strength of teaching staff for the year under review was 14; 12, full time and 2 part-time. The Department also made use of 4 Demonstrators and 7 National Service Persons in offering various academic and administrative services.

Staff Development

Efforts continue to build up staff capacity through the MPhil and PhD Programme. Two of our PhD candidates have submitted their thesis for assessment and one is at the tail end of his PhD thesis. Two PhD students are half-way through their thesis. Through the Inter-University Conference for Doctoral Studies, the progress of these students is reviewed on regular basis.

Research

Members are actively involved in individual as well as joint research projects.

SERVICE TO THE COMMUNITY

Faculty continues to offer effective service in various areas and capacities to other institutions. They have served on panels for public discussions, speakers at different functions and as resource persons at various platforms.

OUTREACH PROGRAMMES

The Department continues to offer a number of service courses to various Departments of the University, such as French for Communication (Beginners and Intermediate levels) and Akan for some foreign students.

Four students registered in the WASCAL Climate Change and Land Use PhD programme took a special proficiency course in French for Specific Purposes.

Even though the Chinese volunteers who were expected could not come at the beginning of the academic year, the Department started a Chinese Club which afforded a wide range of students the opportunity to study Chinese, thanks to Mr. Melvin Nartey, the instructor. It is expected that the programme will take off fully by the beginning of the next academic year.

INCOME GENERATION ACTIVITIES

The Department's Transbureau continues to undertake all types of translation of texts (literary, scientific documents, functional or basic documents including certificates etc) from French to English and from English to French.

The Department has now received approval from the University to run short courses and other programmes within the framework of income generation activities. Courses to be run under the ambit of Income Generation activities in the Department include Teaching of French and Akan as functional courses; French for Travellers, French for Scientist, French for Business, French for Tourists, Akan for foreign students as well as Chinese proficiency.

Other Activities

The Ghanaian Language Students Association (GLASA) celebrated its first anniversary in the course of the year. A final year student presented a set of jerseys to the Association.

The French Students Association (FRENSA), in collaboration with the Alliance Française in Kumasi, celebrated the Francophone Week from the 19th to 23rd March, 2012. This event was well patronized and sponsored by Ashfoam. The FRENSA also represented the University at the Inter-University Francophone Quiz competition (FRANCOTONIK) in Accra and placed 3rd.

As part of the Francophone Week 2012, an important lecture entitled Culture and Cultural Diversity: a Historic Overview presented by Monsieur Arnaud Dornon of the Institut Français was held with the Vice Chancellor as Chairperson at the Great Hall. The Department also took part in a fair held at the Alliance Française in Accra during the FRANCOTONIK day, to market the Department and its programmes.

COLLABORATION

The Department's collaboration with a consortium of universities in the sub-region and Strasbourg, France, has been strengthened. Two Inter-University Seminars on Doctoral Studies were held at Legon and Cape Coast. The six PhD students of the Department, working at various stages of their thesis, participated in both seminars. A third is expected to be hosted by KNUST.

The Department initiated a relationship with Village du Benin, Togo, in the year and was able to send fifty-eight (58) of our third year students on the Year Abroad Programme there. The

Department still has collaborations with Centre Béninois des Langues Etrangères (CEBELAE), Benin, and fifty-four (54) students went there for the Year Abroad.

Visits

Madame Anne-Marie Coquelin, the new Cultural Attaché of the French Embassy paid a working visit to the Department in the course of the year.

Benefactors

The French Section of the Department of Modern Languages continues to receive support from the French Embassy. Over the year, the French Embassy, in its usual process of giving support to the Department, made valuable donations in the form of basic texts and reference books.

Apart from sponsoring the Inter-University Seminars for Doctoral studies from which the Department has been benefitting tremendously, the French Embassy has continued to offer support in the area of cultural activities.

A remarkable support of the French Embassy in the year is the funding of the first phase of a Language Laboratory and Resource Centre (Maison Française).

The two French Technical Assistants, sent to the Department by the French Government, have helped to improve services offered in the Department. Their dynamism and innovative ideas brought about the introduction of ‘café français’ a Thursday evening programme that brings together students and faculty who want to have fun playing with the French language in the bid to improve their spoken French.

The Department expresses great appreciation to the French Government for its unfailing support in all actions and activities vital to the Department’s development, particularly the French Section. We are equally grateful to our sponsors, Latex Foam who sponsored ‘café français’ and excursion of 55 students to Cape Coast (Elmina Castle, Kakum National Park, Hans Cottage) and Takoradi (African beach, Nzulezu). Ashfoam also sponsored the Department’s Francophone week Celebration and we are grateful. We wish to acknowledge Prof. Kofi Agyekum of the University of Ghana, Legon, who donated some books to the Ghanaian Languages Library of the Department.

CONCLUSION

The Department of Modern Languages is committed to training and equipping more students to meet the nation’s developmental needs and fit them into the mainstream of sub-regional and world progress as agents of change and progress.

On the whole, both academic and administrative staff of the Department has worked assiduously to meet its core responsibilities in administrative work, teaching, research and effective service to the University and the larger community.

DEPARTMENT OF RELIGIOUS STUDIES

INTRODUCTION

The Department of Religious Studies, one of the newest Departments within the Faculty of Social Sciences, is growing steadily.

AIMS AND OBJECTIVES

The Department exists to equip students with requisite skills to identify problems of society and how to respond to them. It aims at exposing students to the religio-cultural dimensions of human development focusing attention on how norms of behaviour are derived and applied. The Department seeks to develop a systematic approach to religious and moral thinking and aims at introducing the major World Religions and the African Traditional Religions to students so as to foster in them a balance of thought and tolerance in respect of religious pluralism of the world. The Department further aims at critically examining faith and belief in the context of a world characterized with scientific modernity.

STUDENT POPULATION

The Department has a total of 242 Students. The Students Lecturer Ratio (SLR) is about 17:1.

TEACHING

Lecturers of the department teach various courses under three broad areas: African Traditional Religion, Christianity and Islam.

RESEARCH

Lecturers of the department are engaged in various forms of research thus their articles can be found in several journals and books.

COMMUNITY SERVICE

Lecturers of the department as part of their duties, and especially as Ministers of Religion, continue to make their presence felt in and outside the university community. They render pastoral and counselling services to students of the Department, Faculty, College and the University as a whole. Some serve as Chaplains to the denominational groups on campus, and Pastors and Imams churches outside the campus. They also function as Academic Tutors to classes within the Faculty of Social Sciences. Some also serve on special sub-committees, at the Department, Faculty and College levels. Prof Asante is the Chairman of the National Peace Council.

FIELD TRIPS

- On February 10-13, 2012, Shiekh S.M. Zakaria travelled to Tamale with students of the Faith and Practice in Islam class, to witness the Damba Festival, and to report on its religio-cultural aspects. The students found out that Damba is a religio-cultural festival, based on the traditions of Dagbon and Islam. Therefore it is very difficult to separate the two.
- On March 5, 2012, Rev. Asiedu-Amoako organised a field trip for the Religion and Environment Class to the Odwenanoma Mountains in the Kwahu Tafo District of the Eastern Region, to find out the local perspective of global warming and climate change. Students found out that, natural and anthropogenic factors have contributed to climate change and global warming in the area. The team recommends that education on the causes and effects of global warming should be given to people in local communities, to change the trend.

NOTABLE EVENTS

- Prof Asante has been elected to Fellowship of the Ghana Academy of Arts and Sciences of (GAAS).
- Five Lecturers (5) of the Department without terminal degrees have registered with the School of Graduate Studies and Research for PhD by research.
 - Two (2) Senior Members of the Department have applied for promotion to Senior Lecturer: Very Rev. Dr. N.I. Samwini and Rev. J.E.T. Kuwornu-Adjaottor.
 - The Department has sent out proposals to donor agencies for funds to purchase a 30-seater bus for its field trips.
 - Twenty-three (33) of our graduates are teaching Christian Religious Studies/ Islamic Religious Studies and Religious and Moral Education at various Senior High Schools (JHS) and Junior High Schools (JHS) across the length and breadth of Ghana.
 - Three of our postgraduates are teaching at Christ Apostolic University College, Christian Service University College, and Sunyani Polytechnic.

PROJECTIONS FOR 2012/2013 ACADEMIC YEAR

The Department is organizing itself to host the 30th Anniversary Conference of the West Africa Association of Theological Institutions (WAATI) at KNUST.

DEPARTMENT OF SOCIOLOGY AND SOCIAL WORK

VISION AND MISSION

The vision of the department is to promote excellence in Social Sciences for the socio-economic development of Ghana and the World at large. The Mission of the Department focuses on the training and the production of high level human resource capable of applying knowledge and purposeful research, relevant to the Ghanaian environment and the International community.

UNDERGRADUATE PROGRAMMES

The Department now runs two degree programs: Bachelor of Arts in Sociology and Bachelor of Arts in Social Work. In addition, the Department is planning to mount sandwich and top-up courses for Diploma in Sociology and Social Work. Students can pursue these programmes through Distance Education or Parallel Degree Programme (evenings), or as regular students. With the current student population of Eight Hundred and Eighty Eight (888), the Department is one of the largest in the University.

Service courses

The Department continues to offer service lectures to other Colleges and Departments in the University

GRADUATE PROGRAMMES

The total number of graduate students currently stands at 22. The department currently runs M.A. in Sociology as a postgraduate program and has also introduced MPhil Sociology for the year 2012. In effect the two post graduate programs will be run co-currently.

The Department has submitted proposals for consideration by the School of Graduate Studies to offer PhD in Sociology. This will facilitate staff development and create opportunities for interested staff and others at a lesser cost locally.

DEPARTMENTAL ACTIVITIES / EDUCATIONAL TRIPS (CONFERENCES)

The Department's Sociology and Social Work Students Association made donations of various consumable items to the Kumasi Children's Home in November 2011 during the Universal Children's Day.

Ms. Harriet Takyi attended a conference at California in April, 2011. It was the 21st CAPCR conference on Peace and Conflict Resolution in California State University, Sacramento. She presented a paper on "Perceptions of urban and peri-urban community members in Kumasi on environmental health risk in waste water vegetable production".

Dr. Kofi Osei Akuoko attended a conference in Harvard University, Cambridge, Massachusetts organized by the International Journal of Arts and Sciences from May 27 – June 3, 2011 and presented a paper on "Supervisory Style and Workers' Behaviour in selected organizations in Ashanti Region of Ghana".

ACADEMIC STAFF

Ms. Harriet Takyi	-	Head of Department
Dr. Kofi Osei Akuoko	-	Senior Lecturer
Mr. Kwadwo Ofori-Dua	-	Lecturer
Mr. Jonas Asamanin Barnie	-	Lecturer
Dr. (Mrs) Fracess Dufie Azumah	-	Lecturer
Mr. Peter Dwumah	-	Lecturer
Dr. George Oheneba Mainoo	-	Lecturer
Dr. Jonathan Dapaah	-	Lecturer
Dr. Eric Yeboah	-	Lecturer

RESEARCH ACTIVITIES

Members are actively involved in individual as well as joint research projects.

COLLABORATION WITH OTHER UNIVERSITIES

The Department is currently enjoying a fruitful collaborative relationship with the University of Utah, Salt Lake City, U.S.A.

As part of the Department's collaboration with the College of Social Work, University of Utah, USA, two students of the department were awarded scholarships in 2010 and are currently pursuing masters program in Social Work at the University of Utah, USA. Two female students have also been awarded scholarships in 2011 to pursue masters program in Social Work in the University of Utah in 2012. They are due to leave and begin the program in September 2012.

The department has also initiated collaborations with other Universities such as University of Suny Geneseo, USA, University of Pennsylvania, USA, University of Georgia and others. Efforts are being made to make these initiated collaborations a success.

BENEFACTORS

The Department wishes to express its profound gratitude and appreciation to the College of Social Work, University of Utah, Salt Lake City, USA for donating thirteen (13) boxes of Social Work textbooks to the department.

Ms. Harriet Takyi brought 100 text books and journals on Social Work to the department from California.

INCOME GENERATION

The Department is participating in the parallel B.A Degree Programmes in the Faculty.

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 teaching and supervision of many 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. It is our hope that the teaching staff will increase to relieve staff of some of their teaching load so that they can do more research and service to the community.

FACULTY OF ART

The Faculty of Art is one of the largest faculties in terms of student numbers in the College of Art and Social Sciences, KNUST. It is an important contributor to Ghana's tertiary educational system and strives to achieve academic excellence at all times. It currently has six departments which run various relevant 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

DEANSHIP AND HEADSHIP POSITIONS

The following held managerial positions in the faculty during the year under review.

Prof. D.A. Ohene-Adu	-	Dean of the Faculty.
Dr. Kwasi Opoku-Amankwa	-	Vice-Dean and Head, Department of Publishing Studies.
Dr. Charles Frimpong	-	Head, Department of Industrial Art.
Mrs. Nana Afia Opoku-Asare	-	Head, Department of General Art Studies.
Mrs. Vesta E. Adu-Gyamfi	-	Head, Department of Integrated Rural Art and Industry
Mr. K.G. de-Graft Johnson	-	Head, Department of Communication Design.
Mr. Kwaku Bofo Kissiedu	-	Head, Department of Painting & Sculpture

INSTALLATION OF INTERNET FACILITIES

The Faculty has installed nine new Internet Switches to replace the old ones which were not functioning. In addition nine new Lightning Arresters were installed to protect the equipment.

LINKS WITH OTHER INSTITUTIONS

The Faculty has established links with a number of institutions. They include the following:

1. Cape Peninsula University of Technology - Cape Town, South Africa.
2. Ecole National Supérieure des Beaux – Arts, Paris, France.
3. Kolding School of Design, Denmark.
4. Arkeshus University, Norway.

VISITS

- A. Sixty Students and five faculty members came for a four-week working visit as guests of the Faculty of Art. During the visit, there were joint workshops organized between students and staff in the faculty, and the visiting delegation from Denmark.
- B. The Dean of the Faculty of Informatics and Design, Cape Peninsula University of Technology, Cape Town, South Africa, paid a four-day working visit to KNUST and was the guest of the Faculty. He ran a two-day workshop on the writing of research papers for publication for the Academic Senior Members of the Faculty.

DEPARTMENT OF COMMUNICATION DESIGN

INTRODUCTION

The Department of Communication Design is one of the departments in the faculty of Art. Its aim is to achieve excellence in teaching, learning and research in the area of graphic arts and multimedia applications.

TEACHING STAFF

K.G. deGraft-Johnson	Lecturer/Head of Department
D.A. Ohene-Adu	Associate Professor
F.E. Eshun	Lecturer
K. Kusi –Appouh	Lecturer
A. Rahman	Lecturer
G. Kushiator	Lecturer
A.K. Badu	Lecturer
R.D. Debrah (Ms)	Assistant Lecturer
E. Appiah	Lecturer (<i>On Study Leave</i>)

Recruitment of qualified, well-oriented staff has been difficult in spite of the current relatively attractive conditions of service. The interest in university teaching shown by qualified persons in the communication design industry, has not been encouraging. The staff-student ration stands at 1:53. (The approved ratio is 1:18).

In recent months, however, the Dean, Provost and Vice-Chancellor have managed to fast-track the recruitment of additional staff, by giving priority to the few candidates expressing interest.

STUDENT NUMBERS

Total number of undergraduate and postgraduate students stand at 479.

PROGRAMME OF STUDY

The Department of Communication Design now runs a four-year B.A. Communication Design degree programme. Students elect to major in one of the following for two consecutive years beginning in their Third Year, ending in their Fourth of Final Year:

Major areas of specialisation

- Graphic Design
- Digital Media Studies (*popularly called "Multimedia"*)

Students in the First and Second Year are put through a "Foundation" programme to prepare them for the two major areas of specialisation. The department considers this to be instrumental in quality assurance regarding how students obtain *theoretical knowledge*, acquire the *appropriate skills*, to strive to *innovate*, become *creative*, develop *critical-thinking*, learn to *collaborate*, and strive for *effective communication*.

A two-year Master's programme in Communication Design which was launched in the 2007/2008 Academic Year, with four postgraduate students, is now in its fifth year. While it was envisaged that some postgraduate students would prove themselves capable of joining the academic staff, only one candidate has so far managed to do so. Others have shown promise; however, the majority appear burdened by the huge costs involved, and the time required, on a daily basis, to enhance their research capabilities, design-thinking, historical knowledge, aesthetic appreciation, critical judgement, and production know-how.

AWARDS/SCHOLARSHIPS

Mr. George Kushiator was awarded the University of Michigan African Presidential Scholar Award to travel to Michigan, USA, for six months, to undertake research. He has since returned, and has assumed duty, shelling out new information, and deeper critical perspectives on design education and research.

EXHIBITIONS/SEMINARS/WORKSHOPS

Poster for Tomorrow, based in Paris (France), and the Department continue to organise an Annual Poster Design Week and Poster for Tomorrow Exhibition. The posters designed are advocacy instruments directed toward positive change through awareness creation. The 2011 Poster for Tomorrow Exhibition was opened by the Dean, Faculty of Art and the Provost, College of Art and social Sciences. Following the 2011 Poster for Tomorrow Exhibition, a

seminar, (the first post-exhibition seminar in design of its kind), was organised at the same venue.

The discussions that followed revisited the significance of posters as advocacy instruments. The seminar was chaired by the Head of Department, K.G. deGraft-Johnson, and had Messrs Gilbert Amegatcher, Eric Eshun, Anthony Kofi Badu and Stephen Tetteh as panel members. The Annual Poster Design Week, this year, took place from 23rd -27th April 2012. Once again, the resource person was Natalia Delgado, a prominent poster designer, and PhD student from the University of Victoria, Canada.

Animation Africa (AnimAfrik) has, in the last eight months, organised two animation workshops with the Multimedia Section of the Department. Both events took place at the KNUST Museum under the patronage of the curator, G.W. Amegatcher. The first entailed collaboration with Ecole des Métiers du Cinéma d'Animation (EMCA, Angouleme, France), a world class training institution for animators, and was supported by Alliance Française (Kumasi). The second, was organised in collaboration with the Department, and included participants from Abetenim JHS (Ejisu-Juabeng District). The workshop's focus on environmental protection was timely and appropriate.

A 3D Animation workshop was organised in collaboration with Pixel Motion, and supported by Animation Africa (AnimAfrik). An assistant lecturer, Ms. Debrah was workshop coordinator and facilitator. Significant to note was that the major resource person was Emmanuel Rock Hanson, a recent graduate (2008) of the Department of Communication Design.

Several photography workshops were organised under the "*Time with the Masters*" series of workshops. The first of these workshops was run by Steven Ababio, a renowned international photographer. The second of the series involved Emmanuel Bobie, of Bobpixel Studios a graduate of the Department of Communication Design, who has had much of his work selected by the highly-reputed stock photo agency, Getty Images. The last of the series, was an enthralling workshop themed "A Thousand Words", with Michael Darkwah, of Kwame Pocho Photos.

OPEN EDUCATIONAL RESOURCES (OER)

A visit by the Africa Representative took place early this year. The Department has been instrumental in developing much of the current stock of material accessed by users of OER at KNUST. Mr. A. Rahman, who last year was a beneficiary of the University of Michigan African Presidential Scholar Award, has ensured that OER remains a vital component of KNUST instructional technology. Emerging challenges confronting the Department's support for OER are an imminent reduction in budgetary support from the major partner at University of Michigan, inter-departmental languor at KNUST regarding resource allocation for OER, and prevailing attitudes at KNUST toward diversifying instructional technology.

INFRASTRUCTURE/FACILITIES AND PROJECTS

The Second Year Studio/Lecture Room has been completed. Lighting, ceiling fans and air-conditioning have been installed so that the premises can double as a Faculty Examination Centre. Security fencing will be fully installed to finally secure the premises.

A photo-studio project undertaken as a self-help project by the Graphic Arts Students Association has become operational and was handed over to Dean of the Faculty of Art, Prof. D. Ohene-Adu in a short ceremony. For its initial set up, it has backdrops, digital cameras, tripods, studio lighting, and a changing room equipped with mirrors.

A modern, digitised Media Centre is currently under construction. It will serve as the embryo for the development of a mini-TV studio and pilot broadcast station. For its first phase, a well-equipped, world-class animation studio, with high-spec PCs, large video monitors, 22-inch screen iMacs and Cintiq Wacom tablets, will be installed. Next, a sound recording studio with state-of-the-art digital recording equipment will be built to complement work in the animation studio. It has been planned, that the 2013/2014 Academic Year should see the Department concentrate on its video production capacity-building programme, as well as on negotiations for the construction of a mini-TV studio.

The darkroom for the Photography Section is being revamped; it should be completed during the 2012/2013 Academic Year.

In a move organised by the Provost, classroom chairs are being procured through a reliable Chinese supplier. Earmarked for use by several departments in the Faculty of Art, these classroom chairs will help to deal with the perennial theft of chairs from classrooms and studios.

A cemented walkway has been constructed between the newly-built photo-studio and classrooms of the Department of Industrial Art. It solves the problem of puddles forming and students struggling to negotiate through them in the rainy season.

The Art Society refurbished the “House of Commons”, a recreational area in the faculty, outfitted with Wi-Fi access by the Faculty which serves as an informal gathering point for ‘creatives’ in KNUST. The department has direct responsibility for its upkeep and security.

The Department of Communication Design has taken delivery of four iMacs and six high-spec Hewlett-Packard PCs for an animation studio under construction.

A rechargeable PA system with an extra mic was recently procured to augment the existing system. The new equipment circumvents the disruption caused by frequent power outages, and intermittent fluctuations in power supply.

SPECIAL INITIATIVES

Curriculum review

The entire curriculum of the Department is being overhauled to bring it in step with contemporary international Bachelor’s and Master’s curricula, and yet still accommodate Ghanaian cultural influences. To complete the review, stakeholders from industry will be given the opportunity to add their voice to the final document.

Reprographic services for students

A Reprographic Centre will soon be set up to offer services in colour laser printing, colour photocopying, binding, lamination, and large format digital printing. The Centre, it is expected, will offer competitive prices, and provide easy access to reprographic services.

Visual communication research

A Visual Communication Research Centre has been planned for. Three major areas of interest would be “Advertising and Packaging Research”, “Typography Research” and “Community Needs Assessment for Visual Communication”. Staffing challenges continue to bedevil its development and operation.

Public service TV production

ReefKnot TV (RKTv), a development-oriented public-service TV station, like the PBS in the U.S., has also been planned. Much hinges on the success of the Department’s lobby for support from the Government of Ghana, and the Department’s collaborator (AnimAfrik); a proposed appeal for support from a targeted European government must also succeed. At this time, discussions are still ongoing.

New Programmes

Curriculum design and course material development will soon be completed for Distance Learning programmes in Graphic Design, Photography, Web Development and Animation. It is anticipated that the Distance Learning programme will commence in the 2013/2014 Academic Year.

An e-learning centre with video-conferencing facilities will be set up for the M. Comm. Design programme; it has been budgeted for but heavy cash outlays doled out to repair the roofing at the Department of Publishing Studies, have helped to stall work on the centre. The e-learning centre will enable inter-departmental exchanges between the Department of Informatics and Design (Cape Peninsula University of Technology) and the Department of Communication Design (KNUST). In the future, other departments will come on-line. Links with the Basel School of Design and Bournemouth University have been considered.

Collaboration

1. Cape Peninsula University of Technology (CPUT) and the Department of Communication Design have begun negotiations over a sustainable, mutually beneficial student-exchange programme. This follows the recent signing of a Memorandum of Understanding between CPUT and KNUST.
2. AnimAfrik has deepened its collaboration with the department. Mr. K. Kusi-Appouh and Ms. R.D. Debrah have guaranteed that the Department’s partnership with AnimAfrik expands exponentially.
3. Qwik Images will soon be partnering the Department to establish a reprographic centre. The CEO of Qwik Images is an alumnus of the Department.
4. The Department and its student-welfare wing, GASA (Graphic Arts Students’ Association) rehabilitated a recently vacated digital laboratory, converting the premises into a photo-studio. Both parties will share in the upgrading and maintenance of the photo-studio.
5. The URO (KNUST) and the Department co-produced a television documentary: “KNUST @ 60: Alumni in Nation Building”

CONFERENCES/WORKSHOPS

- Trainer of Trainers Packaging Design Workshop “Maximising Export Performance through Better Packaging Solution”, Thai Packaging Centre, Thailand Inst. of Scientific and Technological Research, 29th August – 3rd Sept 2011.
- 2011 Animation Workshop, KNUST Musuem - EMCA (Angouleme, France), Anim Afrik and the Dept. of Communication Design.
- 2012 Animation Workshop, KNUST Museum – “Environmental Pollution”

DEPARTMENT OF GENERAL ART STUDIES

INTRODUCTION

Following the restructuring of KNUST into Colleges in 2004, the Art History (renamed African Art & Culture) section of the Department of Design and General Art Studies (now Communication Design) was merged with the Department of Art Education and renamed General Art Studies. The department offers MA, MPhil and PhD degrees in Art Education and African Art and Culture.

Graduates of this Department mostly find employment as teachers of Visual Arts in Junior and Senior High Schools, Colleges of Education, the Polytechnics and the Universities. The diversity of courses offered and the research bias towards promotion and sharing of knowledge make it possible for some of our graduates to find employment (non-teaching positions) in such organisations as the Police Service, Prisons Service, CSIR, the Banks, and NGOs while a few become entrepreneurs in the field of education.

STAFF STRENGTH

The total staff strength of the Department consists of 3 Senior Lecturers, 4 Lecturers and 2 part-time Lecturers.

ACTIVITIES IN THE DEPARTMENT

EDUCATIONAL TECHNOLOGY WORKSHOP

Educational Technology is a semester’s course (EDUTECH) accessible to MA and MPhil Art Education students of the Department of General Arts Studies. The curriculum was designed to train our student Visual Arts teachers to integrate ICT in designing lessons for effective delivery of instruction. The rationale was to leverage the ICT expertise of student teachers who graduate from the Department; and to equip them to integrate emerging technologies to enhance the quality of their teaching and learning in the Visual Arts.

The workshop consisted of both theory and practical hands-on learning experience that focused on pertinent issues concerned with technology-enhanced learning.

At the end of this first semester 2011 weekly training, the students were able to design and structure the content of weblogs and desktop e-learning applications for Picture-Making, Textiles, Leatherwork, and other Visual Arts disciplines. An educational tour organized as part

of the course took the EDUTECH staff and students to the KNUST e-Learning Centre and the Electronic Resource Unit of the University Library to learn at firsthand, how these facilities are put to use in the e-Learning environment.

ICT INTEGRATION WORKSHOP FOR VISUAL ART TEACHERS

The Department organised a One-Day Hands-on Workshop on the theme “Integrating Information and Communication Technology for Quality Visual Arts Teaching” for 25 Senior High School teachers in the Ashanti Region on Friday 11th November 2011. This workshop was organised in collaboration with the Ghana Society for Education through Art (GhaSEA), an affiliate of the International Society for Education Through Art (InSEA) with the aim of exposing Visual Arts teachers to ICT skills and upgrading those with ICT proficiency on how they can combine face-to-face classroom and Art studio pedagogy with computer-mediated activities into an integrated instructional approach to facilitate effective teaching and learning.

The workshop was facilitated by Dr. Harry Barton-Essel of the Department of General Art Studies.

MENDELEY DESKTOP REFERENCING APPLICATION WORKSHOP

As part of the Department’s effort to enhance the quality of student research, a workshop on MENDELEY, a freeware desktop and web programme for managing and sharing research papers, was organised for academic staff and students on the MA and MPhil Art Education and African Art & Culture programmes in the Department. Facilitated by Mr. Eddie Appiah (Lecturer in Communication Design and currently PhD student in Cape Peninsula University of Technology in Cape Town, South Africa) on Tuesday 13th and Wednesday 14th December 2011, the workshop empowered participating staff and students to adopt this new research and data discovery and management tool to establish online collaboration with other researchers.

The two-day workshop began with a lecture on the history, developers, benefits and users of the MENDELEY software. The students were taken through the process of signing up to the Mendeley online social network, installation of the desktop version of the application, managing research projects and referencing. The Student participants created a research social network locus named ART EDUCATION MENDELEY to facilitate information management and sharing among those with common research interest.

POSTGRADUATE RESEARCH SUPERVISION WORKSHOP

The Department hosted a two-day workshop on Postgraduate research and supervision from Thursday 26th and Friday 27th April 2012 that was facilitated by Professor Johannes Cronje, an Instructional Design and Computer Education specialist from the Cape Peninsula University of Technology in Cape Town, South Africa. The workshop focused on knowledge and skills acquisition for designing and developing research topics, using the MENDELEY software and other tools to search for and review literature as well as develop the conceptual framework for graduate thesis, and for collaborating with other researchers for publishing research findings.

WORKSHOP ON WEB 2.0 TOOLS FOR RESEARCH SUPPORT AND NETWORKING

As part of the Department’s efforts towards effective integration of ICT in its programmes, academic staff of the Department were taken through a two-day practical, hands-on workshop to

explore Web 2.0 tools, including Dropbox, GoogleDocs, Spreadsheets, Wikis and WikiEducator, and attain competence in essential ICT skills to improve the content of our MA, MPhil and PhD programmes in Art Education and African Art & Culture. The workshop, which took place at the E-Resources Unit of the University Library on Monday 14th and Tuesday 15th May 2012, also strengthened our capacity for more enhanced teaching, collaborative research and publication performance. Mr. Richard Bruce Lamprey, Head of the e-Resources Unit, facilitated the workshop and was assisted by the workshop Co-ordinator, Dr. Harry Barton-Essel of the Department of General Art 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 properly trained graduates with the requisite knowledge and skills for today's technology-based industries. The Department is committed to providing the best possible conditions for research, study, practice and teaching of design, art and technology as related to the Applied Arts.

The Department is staffed by men and women who are committed to guiding students towards personal and professional excellence thereby producing individuals who 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 608 students.

In our quest to be abreast with current trends in industry, and also inculcate in students the entrepreneurial fervour, the department in the course of the year organised a couple of seminars for students at which prominent entrepreneurs and art practitioners were invited to deliver lectures on relevant topics geared at inspiring and sharpening both the artistic and entrepreneurial abilities of students. In achieving the same objectives, groups of students from the different sections have embarked on educational tours to selected factories and galleries in various parts of the country.

Another significant activity embarked on by the department this academic year has been her initiative in the organization of the first-ever Faculty of Art Christmas bazaar which not only showcased the activities and variety of items produced by students of the department, but also helped generate funds to partly meet the numerous requirements of the three sections of the department.

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/post graduate degree courses leading to BSc Ceramic Technology, BA Textiles and Fashion Studies.

The Department has since 2005 ran postgraduate courses in Ceramics, Textile Design and Metal (Jewellery and Metalsmithing). In all, a total of sixteen (16) students have successfully graduated since their inception.

FACULTY MEMBERS

Charles Frimpong	-	Lecturer /Head of Department
*P. S. Kwawukume	-	Senior Lecturer
*J. K. Nsiah	-	Senior Lecturer
#J. A. Omari	-	Senior Lecturer
#E. V. Ulzen-Appiah (Mrs.)	-	Senior Lecturer
#K. A. Asomaning	-	Lecturer
#Emmanuel Y. Ansah	-	Lecturer
H. Dompok Ofori	-	Lecturer
Peggy A. Fening (Mrs.)	-	Lecturer
William Badoe	-	Lecturer
K. Osei-Ntiri	-	Lecturer
Albert B. Essuman	-	Lecturer
Akosua M. Amankwah (Mrs.)	-	Lecturer
Gladys D. Sarpong (Ms)	-	Lecturer
Kofi Ebenezer K. Howard	-	Lecturer
Samuel Nortey	-	Lecturer
Benjamin K Asinyo	-	Lecturer
Kofi Adjei	-	Assistant Lecturer
Adala Etonam Cyril	-	Assistant Lecturer
Charles Adu-Boachie	-	Technical Instructor
Isaac K. Agyei	-	Technical Instructor

***On Contract # Part-time**

DEPARTMENTAL COLLABORATION

- The department collaborated with a businessman Mr. Alex Banful in organizing the first textile design competition, which saw 10 of our students winning total prize money of over \$4,000.
- Linkages between the textile industries and the Textile section of the department also saw the organization of a workshop on the use of Swarovski Crystals in the Embellishing of Printed Textile Designs.
- The collaboration between the department and Development Dimensions Limited has seen the drafting of skill training programme in jewellery making. Once approved, this endeavour will enhance the outreach programmes of the two institutions.

DEPARTMENT OF INTEGRATED RURAL ART AND INDUSTRY

INTRODUCTION

The Department of Integrated Rural Art and Industry is one of the five Departments of the Faculty of Art. The Department offers training in seven core courses, viz. Product Design (Rhino) Leather Technology, Clay Technology, Fibres and Fabrics Technology, Rattan and Bamboo Technology, Metal Work and Fabrication and Wood Technology. There are other related areas which are either allied courses or elective courses.

The peculiar strength of the Department is in the Integration of the various programmes, which to add value to the end products of the artworks produced. The Department has consistently maintained high standards in training its students and the continual, modification of the internal content of lectures to reflect the fast changing developments in the local and international professional fields.

STAFF DEVELOPMENT

The Department currently has eight senior members with additional three PhD holders who will soon be joining the Department. In line with its new policy of improving staff output through regular training, members continue to benefit from training and development opportunities by our corroborators at national and international organizations. The Department recently signed an MoU with some research institutes including Technology Consultancy Centre (TCC), Aid to Artisans Ghana (ATAG) and the National Commission For Culture (NCC). The Cultural Initiative Support Programme (CISP) under the auspices of the European Union and the National Commission for Culture (NCC) in conjunction with the department, organized six workshops for artisans spanning the Northern Sector, Middle Sector and Southern sector of Ghana.

MEMBERS OF DEPARTMENT

- | | | |
|--------------------------------|---|-----------------------|
| 1. Vesta E. Adu-Gyamfi (Mrs) | - | Senior Lecturer/Head |
| 2. Dr. John Osei Bobie Boahin | - | Lecturer |
| 3. Dr. Rudolf Steiner | - | Lecturer |
| 4. Dr. Abraham Ekow Asmah | - | Lecturer |
| 5. Mr. Harold Awuley Quaye | - | Lecturer |
| 6. Mr. Frederick Ampah Clement | - | Lecturer |
| 7. Mr. Emmanuel Tabi-Agyei | - | Technical Instructor |
| 8. Mr. Eugene Yvonne Padditey | - | Asst. Lecturer |
| • Dr. Kwabena Asubonteng | - | Yet to join the staff |
| • Dr. Kafui Kwasi Agyeman | - | Yet to join the staff |

PROGRAMMES OFFERED BY THE DEPARTMENT

UNDERGRADUATE PROGRAMMES

The Department continues to play its role in training students of the Faculty of art in the four year Bachelor of Arts (Integrated Rural art and Industry). Students study all the seven core courses, and drop any two after the first year, another two in the second year and specialize in any two plus the Computer based Rhino programme in Design. The Department offers part-time programme to those who could not gain admission through the regular intake. Besides, there are other short courses provided on demand like certificate or proficiency programmes.

GRADUATE PROGRAMMES

The Department will start Master's programme in Integrated Art and Industry and a Postgraduate Diploma in Integrated Art and Industry either full time or part-time. The Post Graduate programme is designed to last for two years and the Post Graduate Diploma takes one year.

NEW GRADUATE PROGRAMMES AND COURSES

The Department would be running new courses at the Postgraduate level (Master of Integrated Art and Industry and Postgraduate Diploma in Integrated Art and Industry) and short courses which would be demand driven. The first batch of students for the two year Master programme and one year Postgraduate Diploma would be admitted at the beginning of the coming academic year. (August 2012). These new programmes are intended to strengthen specialization in the area of interest – the theoretical, studio practice and academic components of the graduate programmes, and prepare graduates for higher degree and terminal degrees in the field of Integrated Art and Industry.

One would need a good first degree in Integrated Rural Art and Industry preferably a first class or second upper class or its equivalent. The department seeks to train designers, artists, technologists and researchers to man the Visual Art departments of both large and small scale industries to function effectively and complete favourably on the international market.

1. Community Service

The Department continues to make available to craftsmen and artisans, second cycle institutions, Ghana Tourist Board, CAMPFED Ghana and the individual small scale industries dotting the breath throughout the breath and length of the nation.

Besides, the Integrated Rural art and Industry students go on industrial attachment for twelve weeks in the second semester of every academic year, and this has opened up lots of opportunities and linkages between the stakeholders and the Department.

2. Teaching

The Department has eight hard working senior members offering dedicated service which enables it to maintain its present enviable position in the areas of teaching research and service to the community. Plans have been made to employ three PhDs to augment the staff strength.

3. Details of Links with Industries

The Department continues its linkages with Aid to Artisans Ghana, CAMPFED, Ghana Tourist Board, Akershus University College, Norway, Ecole Des Beaux Arts Paris, France, Penn State University Pennsylvania U.S.A.

INTERNET CONNECTIVITY AND COMPUTER LABORATORY

The Department was connected to the internet for the first time in the year under review; unfortunately there has been intermittent disruptions coupled with numerous power outgages resulting in most equipment breaking down. This has made the delivery of our responsibilities quite difficult. The computer laboratory is under equipped taking the student population into account.

EDUCATIONAL VISIT

Several Senior High Schools and few Junior High Schools have visited the Department for familiarization tours to boost their study and understanding in the Visual Arts and Home Economics courses.

ATAG/EDIF DESIGN COMPETITION

Edif, Emefa Jewelry, Aid To Artisan Ghana and Export Promotion Council organized national competition on Design in the year under review and the first three topmost positions were won by students of the Department;

The 1st position - Isaac Dwoodwo Nunoo – 4th year
2nd position - Benjamin Boateng - 3rd year
3rd position - Bismark Pupilampu Jnr. - 4th year

Some of the entrants (students from the Department) won various prizes. The Department and KNUST congratulate these winners.

FUTURE

The Department hopes to mount the PhD programme in future as we continue to develop our human resource base.

DEPARTMENT OF PAINTING AND SCULPTURE

RESEARCH ACTIVITIES

1. Lecturers at the Sculpture Section are continuing their research in the use of Reinforced Resin for Outdoor Sculpture.
2. The exploration of the artistic and industrial properties of the *Broussonetia Papyrifera* or Paper Mulberry Plant in the development of beautiful handmade papers and as a medium for art at the Painting Section is ongoing, and has had interesting results so far. Mr. Michael Adashie is leading this research.
3. A Comparative Study of *Prekese* Seed Oil and Linseed Oil as Diluents for Oil Colour – Mr. Michael Adashie.

EXHIBITION

Prof. R. T. Ackam mounted; RICHMOND ACKAM: “ACKAMISM” exhibition at the John Jay College curated by Prof. Visani in February 2011.

STAFF ACTIVITIES

- K. B. Kissiedu in June 2011 served as an External Examiner for Makere University, Kampala Uganda.
- K. B. Kissiedu in November 2012 participated in the Triangle Networked conference in London.
- Prof. R.T. Ackam also served as an External Assessor for Promotions for the University of Education, Winneba. He also gave Lectures on “Ghanaian Art and Craft” as well as

“African American Art” to American Students on Study Abroad Programme from the University of California and School of International Training, Vermont.

COLLABORATIONS

The Department of Painting and Sculpture has been exploring establishing linkages with local and international institutions in art and related fields. The idea behind this initiative is to bridge the gap between the Department and key art related institutions both in Ghana and abroad.

Some institutions and organizations that the Department has engaged with over the past academic year include the following:

1. Sansa International Artist’s Association, Ghana
2. Foundation for Contemporary Art, Ghana
3. Nubuke Foundation, Ghana
4. Stedelijk Museum Bureau (SMBA), Amsterdam
5. Yale University, U.S.A.

So far, the Department has had workshops and Seminars with Nubuke Foundation and SMBA. The directors of Nubuke and SMBA were both present at these Workshops/Seminars. Also, Rochelle Feinstein, the director of Graduate Studies, Painting and Printmaking, Yale University School of Art visited the Department in April 2012, and had a Seminar with Staff and Students. It is hoped that these linkages will help the Department to be abreast with contemporary developments in the arts.

STAFF RECRUITMENT

During the academic year under review, two Senior Members were appointed for the department. They are:

1. Mr. Kwabena Afriyie - Poku
2. Mr. George Ampratwum

ADMISSIONS

The Department of Painting and Sculpture admitted 87 first year students for BFA and 12 for MFA in the 2011/2012 academic year.

GRADUATION

The following numbers of students were presented for graduation at the 45th congregation;

i. BFA Sculpture	-	33
ii. BFA Painting	-	22

DEPARTMENT OF PUBLISHING STUDIES

INTRODUCTION

The Department of Publishing Studies provides education, research and training and other services in Authorship, Editing, Publishing and Print Management, Book Design and Illustration, Book Marketing, Publicity, Sales and Rights, and E-Publishing.

STAFFING

The Department has teaching staff with varied expertise and research interests in books and literacy development, book illustration and design, and publishing and print management generally. The Department however needs lecturers to support teaching and research in two major areas – Publishing/Editorial practices and Print management.

ACADEMIC PROGRAMMES

The Department of Publishing Studies runs a 4 years Bachelor of Arts degree in Publishing Studies and two years Master of Arts in Publishing Studies programme.

MAJOR EVENTS/ACTIVITIES

1. **Rt Rev Dr. Edem Tettey** a lecturer in the Department of Publishing Studies was elected and inducted into office as the Moderator of Global Evangelical Church, in January, 2012.
2. The Department is collaborating with National Vocational Training Institute (NVTI), to mount a ‘bridging up’ certificate programme for holders level two certificate in General Printing. The bridging up programme would enable candidates who excel to be enrolled into the Publishing Studies programme.
3. The Department of Publishing Studies is collaborating with Simon Fraser University, Canada, University of British Columbia, Canada and Stanford University, USA to support [and enhance] the research community in Africa by using online technologies to enhancing [scientific communication in higher institutions of learning in Africa]. The goal of this partnership is to enable the department equip research and academic institutions with skills and abilities in new online technologies to improve the professional and public value of scholarly research. This collaboration has culminated in the running of several workshops in different countries of Africa (South Africa, Kenya, Uganda, Botswana, Nigeria and Ghana) by **Dr. Samuel Smith Esseh**.
4. The department will be partnering with **GLORIAD**, the Global Ring Network for Advanced Applications Development, to run the next workshop focused on Open Access policies for Institutions, in Kenya by May 2012. The department has also received a preliminary funding approval under the Linnaeus-Palme programme to collaborate with Jönköping International Business School, Högskolan Jönköping of Sweden on different areas of mutual benefits. This partnership will see staff exchange between the two institutions in the year 2012.
5. **Mrs. Lucy Ry-Kottoh** chaired a plenary session at the 2nd National Disability Conference at the Great Hall, KNUST from August 9 to August 12, 2011, organised by the CEDRES, KNUST. She continues to serve on Technocrat Management/Editorial Board. **Dr. Samuel Smith Esseh** and **Mrs. Lucy Ry-Kottoh** facilitated a three-day

workshop in Accra at INSTI-CSIR from November 16 to November 18, 2011. The workshop, Publishing Ghana Journals Online: Online Publishing & the Use of the Online Journal System (OJS) was organised by International Network for the Availability of Scientific Publications (INASP) and Consortium of Academic and Research Libraries in Ghana (CARLIGH). **Dr. Samuel Smith Esseh** and **Mrs. Lucy Ry-Kottoh** also serve on the Editorial Board of Journal of Technology, published by Takoradi Polytechnic.

6. **Mrs Aba Brew-Hammond** continues to lead the Department to extend its expertise to neighbouring communities and has recently established one of its literacy (reading and creative writing) clubs at Good Shepherd Junior High School, Ahinsan, Kumasi. This brings to five literacy clubs established in Basic Schools within the Kumasi.

The Department's block/building which has been under renovation since May 2011 is about 80 percent complete.

FACULTY OF LAW

INTRODUCTION

Established in 2003 within the College of Art and Social Sciences, the Faculty of Law currently offers undergraduate degree programmes leading to the award of Bachelor of Laws Degree (LLB) for two categories of students:

- a) 4-Year LLB undergraduate students
- b) 4 –Year LLB undergraduate (Part-Time Graduate students)

*THE LLB PROGRAMME IS A TAUGHT COURSE WITH EMPHASIS ON CLINICAL LEGAL EDUCATION WHICH INCLUDES MOOT COURT SESSIONS AND VACATION TRAINING PROGRAMMES THAT HELP ENRICH STUDENTS' PRACTICAL EXPERIENCE AND ORIENTATION. THE COURSES ARE DESIGNED TO EQUIP STUDENTS WITH A BROAD AND COMPREHENSIVE BACKGROUND WHICH WILL ENABLE THEM, ON GRADUATION, TO TAKE UP JOBS IN THE LEGAL SERVICES.

The Faculty also admits students from jurisdictions other than Ghana, with Nigerian students constituting the majority of foreign students. For the 2011/2012 academic year, nine (9) foreign students were admitted to the Faculty. It is important to note that the quality of students admitted has improved remarkably in that only those with aggregate 6 and 7 were admitted to the first year in the current academic year.

LLM PROGRAMME

Plans are at an advanced stage to launch the LLM degree programme. In addition, the Faculty is actively considering a proposal to run an LLM degree programme in Environmental Law, jointly with the United Nations University based in Japan and the Faculty of Law, University of Zambia.

KNUST CAMPUS OF THE GHANA SCHOOL OF LAW

A branch of the Ghana School of Law that was established on the campus of the Faculty of Law in the 2010/2011 academic year is now in its second year of existence. The performance of the

first cohort of students at the part one of the bar examinations was commendable. KNUST lends support to the professional programme in many ways, for example, KNUST has offered two offices to the staff of the programme at no cost.

STAFFING

The Faculty has an efficient academic staff consisting of one (1) Professor of Law, one (1) Assistant Professor of Law and Fulbright Scholar, one (1) Senior Lecturer, Eighteen (18) Lecturers, and two (2) Graduate Assistants. The Graduate Assistants support the running of tutorial and seminar sessions. Three more lecturers are expected to join the teaching staff at the commencement of the 2012/2013 academic year.

DISTINGUISHED SCHOLAR SCHEME

The Faculty has established an academic visiting programme under which the Faculty invites applications from academics from anywhere in the world to come to KNUST for a month or a number of months as 'distinguished visitors'. Applications are particularly welcome from those having an interest in international research involving Ghana and Africa. Scholars are encouraged to give public lectures or seminars during the period of their visit.

STAFF CONSULTANCIES

Members of the academic staff of the Faculty of Law have experience and expertise in a number of specialist areas. They are available for consultancy work and have undertaken a number of consultancies on behalf of donor agencies and commercial firms.

Relevant Areas of Expertise are as follows:

- Company & Commercial Law
- Constitutional Law
- Contract Law
- Consumer Protection & Product Liability
- Medical Law & Ethics
- Professional Training/Continuing Legal Education
- Court Procedure
- Judicial & Magisterial Training

REPORT OF THE 19TH ALL AFRICAN HUMAN RIGHTS MOOT COMPETITION

The Faculty of Law, KNUST was runner-up at the 19th All African Human Rights Moot Competition in Benin. The Faculty was adjudged the best second Law Faculty alongside the Faculties of the University of Lagos, Nigeria and the University of Abomey –Calavi, Benin. The competition was held in COTONOU, Benin from 4th to 9th October, 2010. The KNUST team lost to the overall best to the joint team made up of Rhodes University, South Africa, Universite de Cocody, Co'te d, 'Ivoire and the University of Namibia. It was the third appearance of KNUST Law Faculty since the competition began 19 years ago.

Miss Grace Sackey, a third year student and Miss Rebecca Amponsah, a fourth year student, constituted the team for KNUST Faculty of Law. The Team was jointly mentored by Mr Ernest Owusu-Dapaa and Mr Oswald Kafui Seneadza, both lecturers in Public International Law.

The following personalities sat as judges during the finals of the 19th Moot Court Competition: Advocate Robert Dossou, President of the Constitutional Court of Benin; Advocate Reine Alapini Gansou, Chairperson of the African Commission on Human and People's Rights; Dr David Padilla, Former Assistant Executive Secretary, Inter-American Human Rights Commission; Dr Hélène' Lambatim Nadjilengar, Vice President of the Economic and Social Council of Chad and President of the Chadian Women Lawyers Association; Mrs Nana –Oye Lithur, Director, Commonwealth Human Rights Initiative, Ghana; Justice Johann Van der Westhuizen, Judge of the Constitutional Court of South Africa; and Dr Farida Mamad, Faculdade de Direito Universidad Eduardo Mondlane, Mozambique.

The final results, top rankings and photographs of the Competition are available on the official Moot website: www.chr.up.ac.za/moot

A.M.E. AMISSAH DEBATE COMPETITION CUP

The Faculty of Law participated and won the A.N.E. Amissah Debate Competition Cup this year in Accra. The Competition was established on 17th March 2011.

LAW CLINIC

The KNUST Law Faculty has established the first student-based Law Clinic in the country. Like a law firm, the Law Clinic gives free legal assistance to members of the public who cannot afford a lawyer. The Clinic also provides legal information to the community so that more people are aware of their rights.

The Clinic is run by final year students from the Law Faculty under the guidance and supervision of KNUST Faculty of Law Staff who are experienced and qualified lawyers. Students who enrol in the course attend the Law Clinic each week. The student advisers interview clients about their legal problems and then consult with one of the qualified lawyers from the Faculty staff.

Services provided by the law clinic

The Law Clinic provides clients with assistance in relation to civil matters such as: family law; land law; contract law; personal injuries; domestic violence; consumer complaints; nuisances and occupiers liability; work place injuries; motor vehicle accidents; debt; tenancy and wills.

KNUST gratefully acknowledges the support and contributions of the Canadian Lawyers Abroad (CLA), and the University of Ottawa, Canada.

KNUST HUMAN RIGHTS AND REPRODUCTIVE JUSTICE CENTRE

The Faculty also recently established the Human Rights and Reproductive Justice Centre.

The Centre exists because of the need for advocacy and scholarship on human rights and reproductive justice. The Centre hopes to be a means by which members of the public are informed of the issues relating to the need to ensure that equality of the sexes as enshrined by law is realised. The Centre advocates a society where human rights of all Ghanaians are respected and where all Ghanaians should be able to make reproductive choices and exercise their reproductive rights without fear, coercion or discrimination.

It is expected that the Centre should foster legal scholarship and teaching on human rights and reproductive justice, influence the law outside the courtroom, document instances of reproductive injustice or abuses, and collaborate with policy makers on measures to make human rights and reproductive justice a reality.

RESEARCH ACTIVITIES

Members of the faculty have been conducting research in their areas of specialization and some of these publications can be found in the University's quality assurance bulletin.

RESEARCH INTO ACTIVITIES OF STREET GIRLS IN GHANA

Professor Sheryl Buske, Fulbright Scholar seconded to the Faculty of Law has been conducting research which focuses on the plight of the 'Young Kayayoos' working in urban markets. This research seeks to understand why the girls continue to migrate to southern markets, why they stay in such a difficult situation, and how they incorporate motherhood into their street lives.

The majority of the existing research is predicted on the experiences of boys; this research is valuable to Ghana policy-makers and NGOs alike as they grapple with how to respond to the unique needs of this ever-growing population.

THE KNUST SCHOOL OF BUSINESS (KSB)

OVERVIEW OF THE SCHOOL

The KNUST School of Business (KSB) was established in 2005 as an outgrowth of the 29-year old Department of Economics and Industrial management which began by offering a Post-graduate Diploma in Industrial Management, followed by an M.A. in Industrial Management and an MBA programmes since 2002. KSB has been established to fulfil the vision of KNUST to provide the environment for excellence in teaching, learning, and research in management and entrepreneurship in science and technology for the industrial and socio-economic development of Ghana and Africa. In effect, KSB seeks to attain global recognition as a centre of excellence in Africa for the development and the production of high calibre graduates with hands-on knowledge and expertise in management to support the industrial and socio-economic development of Ghana and Africa.

In order to attain its vision as a world-class School of business, KSB has the following as its thrusts: Integrating Business Courses into All University Programmes; Recruitment of Qualified, Experienced and Competent Staff; Excellence in Academic and Industry Research; Centre for Management Consulting and Business Research; Strong Links With The World Of Business, Government, and Society; International Partnerships: Strong Links With The World Of Learning; Developing The Leadership And Management Competencies Of Students; Professional Business Degree Programmes; A Modern Management Library; Modern ICT Resources; Performance & Quality Assurance.

The programmes of study available include:

- Full Time BSc & Masters in Business Administration
- Part-Time BSc & Masters in Business Administration, and

- Week-End Masters in Business Administration

The KNUST School of Business has five approved academic departments, the fifth, however, is not operational at the moment. The concentrations for Award of Bachelor of Science in Business Administration (BSc in Business Administration) and Master of Business Administration (MBA) degrees on offer at the various departments are as follows:

1. The Department of Managerial Science:
 - BSc in Business Administration
 - i. Human Resource Management Option
 - ii. Management & Organisational Development Option
 - Master of Business Administration in:
 - i. Human Resource Management
 - ii. Management & Organisational Development
2. Department of Accounting and Finance
 - BSc in Business Administration
 - i. Accounting Option
 - ii. Banking and Finance Option
 - Master of Business Administration in:
 - i. Accounting
 - ii. Finance
3. Department of Marketing and Corporate Strategy
 - BSc in Business Administration
 - i. Marketing Option
 - ii. Entrepreneurial Management Option
 - Master of Business Administration in:
 - i. Marketing
 - ii. Strategic Management and Management Consulting
 - iii. Entrepreneurial Management
4. Department of Information and Decision Science
 - BSc in Business Administration
 - i. Business Information Technology Option
 - ii. Logistics and Supply Chain Management Option
 - iii. Procurement Management Option
 - Master of Business Administration in:
 - i. Business Information Technology
 - ii. Project Management, Logistics and Supply Chain
5. Department of Service Management
 - Hospitality and Tourism Management

INFRASTRUCTURE DEVELOPMENTS

Ultra Modern Auditorium

Work on the Ultra Modern Auditorium which began in May, 2011 is about 80% complete. It is expected to be handed over in May 2012.

NEW PROGRAMMES OR COURSES INTRODUCED

The Department of Information Systems and Decision Sciences (ISDS) in collaboration with the Public Procurement Authority (PPA) has introduced a three month programme leading to the award of a Certificate in Procurement Management.

COLLABORATIONS WITH INDUSTRY AND EDUCATIONAL INSTITUTIONS

Partnership with College of Engineering in organising ConocoPhillips Lectures

The Information Systems and Decision Sciences (ISDS) department collaborated with the College of Engineering to organise a series of lectures from the 16th to the 23rd of March 2012. These lectures were facilitated by a guest team from ConocoPhillips (COP). COP is the 4th largest oil company and 2nd largest refiner in the world. The aim of the lectures was to educate participants of the prospects and opportunities in the oil and gas industry.

Partnership with World Cocoa Foundation and ADM Cocoa.

The World Cocoa Foundation (WCF) as part of its ongoing *Empowering Cocoa Households with Opportunities and Education Solutions* (ECHOES) alliance programme partnered KSB to plan, develop and implement an Agricultural Logistics Skills development training programme geared towards the training of Post-Secondary graduates. The programme was sponsored by WCF and its partners including ADM Cocoa and Safmarine. KNUST as a partner served as the educational lead responsible for curriculum development, programme hosting and training delivery.

Thirty students (30) were selected to participate in the first training programme which began in June 2011. The duration of the programme was seven (7) months comprising four months of academic training and three (3) months of internship with the programme sponsors as well as other companies within the cocoa industry.

Participants of the programme graduated in November 2011 in a ceremony at the Great Hall with the award of certificates.

KSB programme in certificate in logistics and transport (CILT)

The Chartered Institute of Logistics and Transport (UK) the world's leading professional education body in Logistics and Transport, collaborated KNUST School of Business to run the following Professional Programmes:

- Certificate in Logistics and Transport
- Diploma in Logistics and Transport
- Advanced Diploma in Logistics and Transport.

The first programme to be run was the Certificate in Logistics and Transport. It is prudent to report that, the first batch of 20 participants have written the examination for the Certificate programme and are awaiting their results.

The West African Institute of Supply Chain Leadership (WAISCL)

This centre, housed at the Department of Information Systems and Decision Sciences, aims to provide innovative, practical, and tailored Supply Chain Management (SCM) education, training and sector specific research. The first module of the programme took place in Kumasi from the 8th to the 11th of November 2011 with 20 participants. Participants were awarded certificates and the second module is scheduled to start in Accra by May.

INCOME GENERATION

Income generation is from the part-time programmes run by the School.

DONATIONS RECEIVED

The School received a donation of two copies each of sixty-two book title in procurement for the of running of courses in procurement using the modules developed by Millennium Development Authority (MiDA)/Public Procurement Authority (PPA). This donation was made by the PPA with support from MiDA funded by, the Millennium Challenge Corporation.

AWARDS WON

B-School Leadership Award:

On the 14th of December 2011, the KNUST School of Business was presented with the Le Matinal Educational Excellence award in Mauritius. The ceremony was attended by the Registrar of the School who received the award.

Institute of Chartered Accountants Ghana (ICA, Gh) Awards.

At the 19th graduation & admission ceremony held in Accra on Saturday, 14th April, 2012 by the Institute of Chartered Accountants, candidates from KNUST School of Business received three out of the five awards available.

Recipients of awards in Part Three of the November 2011 CA examinations were:

- **Joseph Arthur** (Current Teaching Assistant) – Overall Best Student.
- **Joseph Coker Appiah** (Immediate past Teaching Assistant) – Best student in cost and management accounting
- **Thomas Teye Akpeh** (Immediate past student) – Best student in public sector accounting

In all, three teaching assistants and seven immediate past students took part in the examination and passed in all four subjects of the level three CA examinations.

SEMINARS

Human Resource Management Seminar

The Department of Managerial Science on the 11th of February organised a Human Resource Management seminar dubbed “Strategic Human Resource Management in Ghana: a Tail of Two Cities”. The aim of the seminar was to highlight the disparity between best practices in Human

resource management and the actual practices in Ghana. It also aimed at encouraging students to see Human Resource Management as a viable programme worth studying as well as to increase awareness and interest in the programme

OTHER INFORMATION

International Competition

From 4th to 10th January, 2012, five final year students of the KNUST School of Business participated in the finals of the Manitoba International Marketing Competition (MIMC 2012) in Winnipeg, Canada. The competition is a 12th week simulation programme which demands weekly entries of international marketing decisions.

For the fourth year running, the KNUST School of Business represented the entire Africa in the Competition which is 30 years old. KNUST School of Business remains the first and the only African University that participates in the finals annually.

EDUCATIONAL TRIPS AND TOURS

WAISCL annual industrial tour.

The tour to South Africa was organised in July 2011 for Under-graduate and Post-graduate students. The tour proved to be very educative and offered students the opportunity to interact with leading companies and their executives in South Africa. A similar exercise is being organised for the year 2012.

Educational trip to the United States of America

The KNUST School of Business in collaboration with ACE Consult a privately owned company organised an educational trip for some MBA students to the USA between the 24th of February and the 4th of March 2012. They took part in the African Business Conference at Harvard University, classes at Columbia University as well as Wharton Business School at the George Washington University.

Educational trip to the Ghana Stock Exchange.

Final year students of the Accounting and finance department went on an educational tour to Accra on the 16th April 2012 to observe the operations of the Ghana Stock Exchange and to interact with staff of Price Water House Coppers. This trip was organized to help the students get firsthand experience and observe the workings in the industry to facilitate the comprehension of what is studied in class.

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 but focused on national industrial development.

The College is now organized 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 9 Teaching Departments and 2 Research Centres as listed below. Among the teaching Departments in the College, the Department of Chemical Engineering runs 3 undergraduate programmes, Mechanical Engineering, Electrical and Electronics Engineering, Computer Engineering and Materials Engineering run two undergraduate programmes each. The remaining five departments run 1 undergraduate programme each. The Departments and the programmes on offer are as follows

Departments	Undergraduate Programmes
1. Department of Agricultural Engineering	+ B.Sc. in Agricultural Engineering
2. Department of Chemical Engineering	+ B.Sc. in Chemical Engineering + B.Sc. in Petrochemical Engineering + B.Sc. in Petroleum Engineering
3. Department of Civil Engineering	+ B.Sc. in Civil Engineering
4. Department of Computer Engineering	+ B.Sc. in Computer Engineering + B.Sc. in Biomedical Engineering
5. Department of Electrical and Electronics	+ B.Sc. in Electrical and Electronics Engineering + B.Sc. in Telecommunication Engineering
6. Department of Geological Engineering	+ B.Sc. in Geological Engineering
7. Department of Geomatic Engineering	+ B.Sc. in Geomatic Engineering
8. Department of Materials Engineering	+ B.Sc. in Materials Engineering + B. Sc. in Metallurgical Engineering
9. Department of Mechanical Engineering	+ B.Sc. in Mechanical Engineering + B.Sc. in Aerospace Engineering
Research Centers	
10. Technology Consultancy Centre	
11. The Energy Center	

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

four thousand one hundred and seven (4,107) undergraduate students and two hundred and fifty-nine (259) postgraduate students during the 2011/2012 Academic Year.

ADMINISTRATION OF THE COLLEGE

The following are the administrative personnel at the Provost office.

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

ACTIVITIES

During 2011/2012 Academic Year, the College undertook a number of activities, a few of which are detailed below:

COLLEGE BOARD RETREAT

The College of Engineering Board held a retreat from 28th October to 30th October 2011 at the Eusbett Hotel in Sunyani. The retreat provided the Board the opportunity to review and take stock of the progress made during the preceding year and set out the activities to be executed in the next year to achieve the four objectives adopted last year. The objectives were

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 quality
4. Improving the efficiency of college administration and management

For each objective, activities to be undertaken were set out with timelines for their completion.

Key among the strategies adopted were, among others monitoring lecturer delivery, increase practical training component of programmes, improve and modernize equipment in the laboratories, workshops and library. Performance targets and activity standards to improve efficiency of College administration were also set.

The College has so far made steady progress and is on course in achieving set targets.

CAREER FAIR

As part of the efforts at bridging the gap between the College and the Industries, the College organized a week-long career fair for students from 27th February to 2nd March 2012. Participating firms took turns to address students on their operations, career opportunities and what is expected of employees. Students were interviewed and selected to first serve their national service with them before formally employing them. The participating companies included Tullow Oil, Transocean, Cummins, Tenaris, AngloGold Ashanti, KACE-AITI, Golden Star, Meltwater, KC, Schlumberger, Conoco-Philips and Charvern, among others.

VISIT BY JAPANESE PROFESSOR

The College also hosted Professor Fumio Tatsuoka of the University of Tokyo, one of the foremost Professors of geotechnical engineering, and currently President of the International Geosynthetics Society. He gave three lectures to staff and students of the College on the following topics;

TULLOW OIL GHANA LTD

Tullow Oil Ghana in collaboration with the University of Houston, USA, and the American Association of Petroleum Geologists (AAPG) of the Publication and Pipeline Committee donated hundreds of books and journals to the College. At a short but impressive handing over ceremony Nana Appia Kyei, Sub-Surface Manager of Tullow, promised that his company was committed to assisting the College in the training of young engineers in the oil and gas industry.

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 2011/2012 academic year stood at around 740.

STATISTICS

BSc Chemical Engineering Programme

	<i>Ghanaian Regular</i>	<i>Ghanaian Fee-Paying</i>	<i>Foreign</i>	<i>Total</i>
Year 1	75	3	16	94
Year 2	90	3	11	104
Year 3	90	3	13	106
Year 4	63	1	6	70
TOTAL	318	10	46	374

BSc Petroleum Engineering Programme

	<i>Ghanaian Regular</i>	<i>Ghanaian Fee-Paying</i>	<i>Foreign</i>	<i>Total</i>
Year 1	48	2	13	63
Year 2	41	3	10	54
Year 3	54	9	9	72
Year 4	37	10	3	50

TOTAL	180	24	35	239
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BSc Petrochemical Engineering Programme

	<i>Ghanaian Regular</i>	<i>Ghanaian Fee-Paying</i>	<i>Foreign</i>	<i>Total</i>
Year 1	40	1	11	52
Year 2	23	4	7	34
3 rd year	22	9	4	35
TOTAL	85	14	22	121

MSc/MPil/PhD Chemical Engineering Programme

	<i>Total Number</i>
Year 1	5
Year 2	6

STAFFING

Currently there are 13 full time, 1 part time, and 3 visiting lecturers at the Department.

PROJECTS

The Department is involved in a large number of funded projects. These projects were initiated by Dr. M. Y. Mensah, a lecturer of the Department. They bring recognition not only to the Department but to KNUST as a whole. These projects are as follows:

- African Knowledge Transfer Partnership (AKTP) facilitated by the British Council of UK and linking Zoomlion Ghana Ltd with the Chemical Engineering Dept of KNUST for the transfer of knowledge in the areas of composting and sanitary landfill management from KNUST to Zoomlion Ghana Ltd. A grant of **GH¢10,800** was made available for the Department for laboratory analysis.
- DANIDA research project on production of second generation biofuels from lignocellulosic materials. The project sum is **2 million US dollars** dedicated for 4 PhD's and 8 MSc's out of which 2 PhD's and 6 MSc's are to come from Ghana.
- Integrated Waste Management for West Africa (IWWA) – a EU funded project involving 4 West African countries (Ghana, Nigeria, Ivory Coast and Senegal) and 19 consortium partners worldwide including KNUST. The project sum is **1 million Euros**.
- Faecal sludge-fed biodiesel plants – The next generation urban sanitation facility. This project is funded by Bill Gates Foundation with a sum of **1.5 million US dollars** and is to facilitate a pilot project leading to the implementation of a commercial plant as well as the training of 2 PhD's and 2 MSc's from Ghana. The project will be implemented by waste enterprisers, Columbia University and KNUST.
- Biobased electricity production and nutrient recirculation from wastewater using Microbial Fuel Cells (MFC). This project is funded by Danida Fellowship Centre with a project sum of **US\$500,000**. 1 MSc student from KNUST will be offered a scholarship on this programme.

On-site treatment of Greywater – upgrading to a resource for irrigation, service or recharge. Countries involved are Ghana, Uganda and Jordan with research collaboration with Upssala University, Sweden. This project is supported by the Swedish International Development

Agency (SIDA) with an amount of SK 4,500,000 (US\$600,000). 1 MSc student will be awarded a scholarship on this programme.

Dr. M.Y. Mensah was also awarded the **1st National Waste Innovation Prize** in March 2012 from the World Bank and the Ministry of Local Government under the programme: Ghana Innovation Marketplace (GIM) – National Business Plan Competition on Innovations in Waste Management. The project title was: Utilization of high calorific wastes for the local production of local cement and other industrial applications. The prize amount was **GH¢30,000**.

RESEARCH

Research projects initiated by academic staff are also in progress.

DEPARTMENT OF MATERIALS ENGINEERING

INTRODUCTION

The Materials Engineering program (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 program 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 replace some essential parts, acquire updated software and 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 have also been repaired.

PROGRAMS OFFERED BY THE DEPARTMENT

UNDERGRADUATE PROGRAMS

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

POST GRADUATE PROGRAMS

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

STATISTICS STUDENTS

The student membership currently stands at 278 undergraduate students and 38 post-graduate students. The breakdown is as indicated below:

BSc. Materials Engineering

(a) First Year		
Materials Engineering students	-	78
Metallurgical Engineering students	-	49
(b) Second Year	-	65
(c) Third Year	-	51
(d) Fourth Year	-	35

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

MSc. Environmental Resources Management

First Year	-	23
Second Year	-	21
MPhil Materials Engineering	-	1
PhD Materials Engineering	-	1

STAFF MEMBERS (ACADEMIC/TEACHING)

We currently have the following members as academic/teaching staff in the department:

Prof. S. Kwofie	-	Associate Professor/Head
Dr. A. A. Adjaottor	-	Senior Lecturer
Dr. Anthony Andrews	-	Lecturer
Mr. E. Amankwah	-	Lecturer
Mr. Amonoo-Otoo	-	Lecturer
**Dr. K. Amoako Appiagyei	-	Senior Lecturer
**Prof. F.W.Y. Momade	-	Associate Professor
***Mr. E. Gikunoo	-	Lecturer
***Mr. Stephen Larbi-Bram	-	Lecturer
** <i>On Contract</i>		*** <i>On Study Leave</i>

DEPARTMENT OF CIVIL ENGINEERING

INTRODUCTION

The undergraduate programme in Civil Engineering was one of the first programmes that KNUST ran jointly with the University of London until the former attained an independent University status in 1961. The Civil Engineering Department focuses on undergraduate and postgraduate 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 2011/2012 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 enrolment in the BSc. Civil Engineering programme for the academic year is 493 as shown in Table 1.

UNDERGRADUATE ENROLMENT IN CIVIL ENGINEERING FOR 2011/2012

<i>Year</i>	<i>Number</i>		<i>Year</i>	<i>Number</i>
Year 1	151		Year 4	69
Year 2	119		Year 5	10
Year 3	142		Year 6	2
Total				493

Admission to the Department continues to be highly competitive and the “cut-off” depends on the number and caliber of candidates applying in a particular year. The overwhelming 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. The Department is currently awaiting formal approval from the Academic Board to start the programme.

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 Programmes

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.

POSTGRADUATE PROGRAMMES AND ENROLMENT

<i>Postgraduate Programme</i>	<i>Enrolment in 2011/2012</i>
MSc, Water Supply and Environmental Sanitation	21
MSc, Water Resources Engineering and Management	12
MSc, Road and Transportation Engineering	23
MPhil, (Civil Engineering)	3

PhD, (Civil Engineering)	7
Total	57

In addition to the regular programmes above, the Department benefitted from major internationally sponsored programmes of research and training, bringing in vital resources for postgraduate level training of professionals for the sanitation sector and climate change research and management. The first, was a collaboration with UNESCO-IHE to start a project titled *Stimulating Local Innovation on Sanitation for the Urban Poor in sub-Saharan Africa and South-East Asia (Smart Sanitation)* over a five (5) year period. This project is funded by the Bill and Melinda Gates Foundation (BMGF) to the tune of Three Hundred and Eighty-five thousand US dollars (US\$385,000). Overall, the project aims to:

1. Increase the number of sanitation professionals in developing countries.
2. Provide adequate research education and training for the new generation of “all-round” sanitary engineers.
3. Make (Post-Graduate) education in sanitation engineering more accessible to individuals from developing countries.
4. Further strengthen the pro-poor sanitation component at the academic institutions involved.

These outputs shall be achieved through specially packaged research programme involving faculty members and the enrolment and successful graduation of Three (3No.) PhDs and Fifteen (15No.) MSc students. Through an internationally competitive process the three PhD students have already been selected.

The Climate Change programme hosted by the Department of Civil Engineering is dubbed the *WASCAL Climate Change and Land Use Programme*. The programme officially started in October 2011 with funding of almost *Two Million Euros (i.e. €1.9M)* by the German Federal Ministry of Education and Research (BMBF) for the first five-year term. KNUST and WASCAL are jointly sponsoring the construction and establishment of the WASCAL Climate Change and Land Use Centre expected to be fully functional by early next year. The establishment of this Centre is expected to facilitate research and mobility of seasoned international academic staff and students.

For the initial five (5) year period the programme will focus on capacity building at the PhD level to help develop the necessary knowledge for sustainable land use and management in the face of Climate Change. Ten (10) students from nine (9) West African countries have already been selected through a very competitive process and admitted to start the PhD programme. They are currently going through the taught course stage where they will be thoroughly primed in skills for data acquisition and analysis, interpretation of spatial data using of remote sensing, GIS and mathematical modelling tools as related to climate change and land use. The ultimate objective is to develop adequate human resource capacity in the sub-region for crafting appropriate adaptation strategies and sustainable management of the impact of Climate Change on land and land use systems. Ten West African countries and two German institutions are responsible for the delivery of courses and supervision of students, making the WASCAL

programme easily one of the most complex collaborative systems of postgraduate education in KNUST.

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.

Over the period, the student: lecturer ratio for the Department, based on undergraduate student enrolment improved significantly from 25:1 in the previous period to 21:1. This was due to both recruitment of new faculty and a reduction in enrolment of students. Currently, more than half of academic staff are above the rank of lecturer while the Professorial rank has improved to about 24%.

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

RESEARCH

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

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

Research Activities: (Structural Engineering)

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.

Research Activities: (Geotechnical Engineering)

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.

Research Activities: (Highway and transportation)

The division continued its research into traffic operations and road safety engineering and management in Ghana. Considerable work was done on the capacity analysis of signalized intersections as well as roundabouts. The safety records of rotary intersections with truck aprons were assessed relative to conventional designs and recommendations made for improving performance. Various studies were also carried out on the quality, availability and affordability of public transport services in Accra and Kumasi. Driver behavior and attitudes towards seatbelt use and motor-cyclist use of crash helmets were also evaluated and recommendations made to inform policy, road safety strategy formulation and enforcement.

Research Activity: (Water Resources Engineering)

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

Research Activity: (Environmental Quality Engineering)

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 organizations. 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 postgraduate 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:

1. 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
2. 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
3. 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.
4. The Bill and Melinda Gates Foundation project on “SMART Sanitation”

DEPARTMENT OF GEOLOGICAL ENGINEERING

INTRODUCTION

The Geological Engineering programme aims at providing expertise in the exploration and exploitation of natural resources and finding effective solutions to geo-environmental problems associated with the exploitation and utilization of 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 with emphasis in Groundwater studies, Engineering and Environmental Geology, Mineral Exploration and Mining Environmental Management 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	82
Two	95
Three	68
Four	29
Total	274

Post Graduate

Year	Number of Students
One	1
Two	2
Total	3

ACADEMIC STAFF

The Academic Staff strength of the Department is seven (7), out of which one (1) is part-time lecturer and one (1) is on study-leave. The current average staff-student-ratio of 1:44 is an improvement over last year of 1:60. The Department has recently recommended for appointment of two (2) new academic staff member whilst further efforts are being made to engage some more academic staff personnel. The academic work is currently supported by two (2) technicians.

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 as listed below.

DONATIONS

During the last academic year (2010/2011), Red Back Mining Ghana Ltd. a subsidiary of the Red Back Inc. operating in the Western Region of Ghana donated Diamond Drilled Cores worth \$113,870.00 to enhance learning and prepare students for the mining industry.

The Minerals Commission this academic year has allocated a Toyota Landcruiser 200GX Station Wagon and a TATA bus to the Geological Engineering Department under a Natural Resource and Environmental Governance (NREG) programme. The vehicles are to enhance manpower training for the mining industry in Ghana.

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 B.Sc. Degree programme in Bio-Medical Engineering is new. The first batch of students to the programme was admitted during the first semester of the 2008/2009 academic year. The Department also offers the following postgraduate programmes:

- MPhil 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 355 is made up of 317 Ghanaian students and 38 foreign students. The student population for postgraduates is 25.

STAFFING

As a result of arrangements to improve the number and quality of teaching staff, the Department has added a PhD holder to the staff of Computer Engineering programme, and enrolled some members of staff and five former National Service Personnel onto a PhD programme under the Vice-Chancellor's Special Initiative.

The population for academic staff now stands at 10. The drive to further increase the *Department's* strength to the required levels continues.

PROFESSIONAL TRAINING

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

RESEARCH

Active Research areas during the year under review include optimisation of efficiency of earth electrodes, applications of ANN to power systems, application of RNS in bioinformatics, digital signal processing, logic test economics, sensor networks, surface plasmon resonance, smart metering, and product design and development for local applications. In the area of product development, prepayment meter, designed and developed by staff and students of the Department for local application, was improved upon.

DETAILS OF LINKS WITH OTHER UNIVERSITIES AND INDUSTRY

The Department maintained its links with Texas Instruments. Under this linkage programme, six students are currently pursuing postgraduate programmes at the Texas A & M University.

Again this year, Texas continued to support three final year students of them do their final year first semester studies at the Texas A & M University. Plans are also under way for three students to be supported by Texas to do their first semester studies in Texas in their final year class.

With the support of Texas Instruments Inc (Dallas TX), the Department has established a VLSI laboratory for both teaching and research.

The Department continued its collaboration with the VRA and the ECG and initiated collaboration with GRIDCO

The Department has entered into an agreement with Ghana Robotics Academy Foundation (GRAF) to lease Lego NXT robotic kits for students training in robotics. The GRAF initiative is supported by United States' Government, Embassy of Denmark, DANIDA, Lego Education and Tigo Ghana Ltd.

In connection with the above agreement, a resource person of GRAF was invited to give a seminar to students who are interested in robotics. Also, a representative of the CanSat Group was brought in to give a seminar aimed at whipping up students' interest in satellite technology.

SERVICE TO THE COMMUNITY

Staff of the Department continued to render services to the nation through consultancy services to the University and outsiders in areas of electrical, electronic, computer and telecommunication engineering and through membership on the National Board of Professional and Technicians Examinations (NABTEX) and the National Digital Broadcasting Migration Technical Committee. Three members of the academic staff are currently serving as moderators and/or external examiners for a few universities.

INCOME GENERATION AND DONATIONS

The Department has accepted three personnel of the Ministry of Health for a bridging arrangement aimed at admitting the personnel to Year 3 (three) of the BSc. Biomedical Engineering Programme next academic year (2012/2013).

DEPARTMENT OF MECHANICAL ENGINEERING

INTRODUCTION

The Department of Mechanical Engineering has a primary responsibility to produce engineers capable of designing, manufacturing, servicing and maintaining machinery and equipment. This is a challenging task due to the vast scope of machinery being developed and used by humankind (from design, manufacturing, and maintenance of complex machines such as interplanetary rockets to simple household kitchen appliances such as can opener). The training needs to be thorough and focused. Our immediate national needs are not to build rockets and missile launchers but to create fundamental machine tools and other equipment that can increase productivity of our people in various fields of endeavour.

Our challenge is compounded today by inadequacy of resources that would ensure that our department can train young engineers who can 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 our practical training facilities have all run down and need to be completely revamped with new machines to reflect emerging trends in industry. New workshops to provide training and enhance intensive research in foundry, welding, sheet metal fabrication, plastic injection moulding, integrated circuit boards manufacturing, computer numerically controlled (CNC) machining practices are necessary additions that require urgent funding to set them up.

To meet emerging trends in industry, we have set ourselves new goals to delineate our training into 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 of Mechanical Engineering are pivotal for national development. Currently, the Department offers two four-year undergraduate programmes leading to the award of B.Sc. Mechanical Engineering and B.Sc. Aerospace Engineering degrees. The Department also runs a two-year top-up programme for HND holders in collaboration with the Institute of Distance Learning of KNUST.

The Department has introduced undergraduate programme options in Industrial Engineering, and Automobile Engineering to address the need for specialists in those fields. 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 of Mechanical Engineering has been running the MSc. and PhD Programme in Mechanical Engineering with specialisation in *Thermo-fluids and Energy Systems Engineering* option since 1990. Since August 2003, the programme has been expanded to cover the other areas of specialization that currently exist in the department, namely Applied Mechanics, and Design and Manufacturing. This expansion of programme has enabled the Department to marginally increase production of high-level professional manpower in these areas for teaching, research and outreach activities in universities, research institutes, and polytechnics. In addition, the programme will continue to provide the urgently needed professionals for the manufacturing industry. The programme is internationally recognised and many students from outside Ghana, particularly Francophone West Africa, have enrolled in the programme with sponsorship from the Federal Republic of Germany (DAAD) and ANSTI/UNESCO.

STAFFING

The Department is grateful to the UPAC for the appointment of Dr. Kwabena Agyapong-Kodua and Dr. Lena Dzifah Mensah as Lecturers to complement the Academic Staff. The Department has forwarded two (2) other applications for appointment as Lecturers. For a full complement of the teaching staff, it is hoped that very soon the appointments of Dr. Richard Opoku and Mr. Faisal Wahib Adam would be approved.

STAFFING SITUATION

Sn.	Status	Number
1.	Associate Professors	2
2.	Visiting Professor	1
3.	Senior Lecturers with PhD	2
4.	Visiting Lecturer	1
5.	Lecturers with PhD	10
6.	Lecturers without PhD	5
7.	Assistant Lecturers	2
8.	Research Fellow	1
9.	Technical Instructor	1
	Total	25

CURRENT STUDENT POPULATION

Mechanical Engineering Undergraduate

Sn.	Year	Total Registered Students
1	First	105
2	Second	111
3	Third	126
4	Fourth	92
	Total	434

Aerospace Engineering Undergraduate

Sn.	Year	Total Registered Students
1	First	28
2.	Second	27
3	Third	25
4	Fourth	21
	Total	101

MSc and PhD Mechanical Engineering

Sn.	Year	Total Registered Students
1.	First	9
2.	Second	15
3.	Third	2
	Total	26

The student population is 561. With this student population, staff strength of 32 is required to keep the staff to student ratio of 1:18 as required by the National Accreditation Board norms.

DEVELOPMENT OF PROGRAMMES

Requirements in industry and national development are creating considerable need 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.

The Department has received approval for the running of an MSc programme in Renewable Energy Technologies RETs and admission of the first batch of students was completed in October, 2011 and classes have already started. The current student population stands at forty seven (47) comprising two (2) females and forty six (45) males.

PUBLICATIONS FOR 2011/2012 ACADEMIC YEAR

Within the period under review, staff published books as well as research articles in reputed journals.

COMMUNITY SERVICE/CONTRIBUTION TO SOCIETY

- a) Prof. A. Brew-Hammond is the Chairman of the Energy Commission.
- b) Prof. F. K. Forson is serving as External Examiner for University of Education, Winneba
- c) Dr. Sunnu is the Chairman of the Programmes Advisory Committee (PAC) of the (HND Automotive Engineering) Koforidua Polytechnic, a member of Ghana Standard Board Technical Committee for standardization and also involved in the establishment of a National Energy Data Processing and Information Center (NEDPIC) for the Energy Commission.
- d) Dr. Gabriel Takyi has been appointed as Academic Board Representative on Faculty of Automobile Engineering Board of Ho Polytechnic, an affiliate of KNUST.
- e) Dr. S. M. Sackey serves as the KNUST Representative on the TUNING Project
- f) Dr. K. Agyapong-Kodua serves as the Coordinator for ‘COPERNICO’ and ‘TRANSPARENCY’ Consortium which is European Commission Seventh Programme for Research and Technological Innovations under European Union.

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.

Dr. Y. A. K. Fiagbe who won the University of Michigan African Presidential Scholarship (UMAPS) to undertake research and mentorship programme and was on 6-Months study leave assumed duty on February 28th, 2012.

Dr. Sunnu is on sabbatical leave at the 2iE (Institut International de l'Eau et de l'Environnement) in Ouagadougou, Burkina Faso where he teaches a course in Turbomachinery.

BENEFACTORS

A number of organizations and individuals have continued to give extremely valuable support to the Department to enhance teaching and research activities. We wish to express our profound gratitude to the following organizations:

- The 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.
- Toyota Ghana fulfilled its pledge of supporting brilliant but needy Mechanical Engineering students with an amount of GH¢ 2000.00 which has since been paid to the University Central Administration.
- CFAO also donated 2 boxes of old vehicle parts to support practical teaching and learning
- Prof. F. K. Forson, the Head of Department, Mechanical Engineering had donated the following items valued at GH¢ 1340.00 towards the furnishing of the Mechanical Engineering Office:
 - One(1) Visitors Chair (3 in 1)
 - Six(6) Visitors Chair (Single Units)
- Mr. Adams Tetteh Larbie, an alumnus of the Department of Mechanical Engineering, KNUST, now at CFAO also donated GH¢ 500.00 to the Department and this amount was used to fabricate five (5) white marker boards for the teaching laboratories.
- Dr. Joshua Ampofo, a Lecturer in the Department also donated GH¢ 100.00 to support the fabrication of one (1) white marker board for the teaching laboratories of the Department.

DEPARTMENT OF AGRICULTURAL ENGINEERING

INTRODUCTION

Agricultural Engineering is the application of engineering and biological principles to develop technologies and solutions to problems in agriculture to remove drudgery, and to increase productivity and efficiency of farmers. The Agricultural Engineering Department is currently organised into four sections including agricultural machinery engineering, soil and water engineering, food and postharvest engineering and agro-environmental engineering. The Department is under the College of Engineering. Staff members are actively engaged in the three areas of research, teaching and service to the community in various capacities. Presently, the academic staff of the Department consists of five associate professors, eight senior lectures and three lecturers as shown below with their respective areas of competences.

NAME	STATUS	AREA OF SPECIALISATION
Prof. S. K. Agodzo	Associate Professor	Soil & Water Engineering
Prof. N. Kyei-Baffour	Associate Professor	Soil & Water Engineering
Prof. E. Mensah	Associate Professor/Head	Soil & Water Engineering
Prof. A. Bart-Plange	Associate Professor	Agric. Structures and Env'tal Control

Prof. K. A. Dzisi	Associate Professor	Food & Postharvest Engineering
Dr. E. Y. H. Bobobee	Senior Lecturer	Farm Machinery Engineering
Dr. J. O. Darko	Senior Lecturer	Food & Postharvest Engineering
Dr. A. Addo	Senior Lecturer	Food & Postharvest Engineering
Mr. J. Aveyire	Senior Lecturer	Farm Machinery Engineering
Dr. E. Ofori	Senior Lecturer	Soil & Water Engineering
Dr W. A. Agyare	Senior Lecturer	Soil & Water Engineering
Mr. S. H. M. Aikins	Senior Lecturer	Agricultural Machinery Eng. & Mgt.
+Mr. Albert Yawson	Senior Lecturer	Agricultural Machinery
*E.D. Aklaku	Lecturer	Renewable Energy and Env'al Control
Mr. F.Kemausuor	Lecturer	Energy and Env'tal Management
Mr. J. O. Akowuah	Lecturer	Food & Postharvest Engineering

**On contract +On Sabbatical from UDS*

Prof. A. Bart-Plange is on sabbatical leave at Cape Coast University, Agricultural Engineering Department.

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 eighth batch of graduate students has been admitted since the graduate programme started in 2004/2005 academic year. Currently, there are seven (7) 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.
- Bioengineering

Five (5) MSc students went through a successful viva and will graduate this year.

TECHNOLOGY CONSULTANCY CENTRE

INTRODUCTION

The Technology Consultancy Centre (TCC) of the College of Engineering is a Research Centre that 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 operates the following Units:

1. Suame Intermediate Technology Transfer Unit
2. Food, Agriculture and Natural Resource Development (FAND) Unit
3. Applied Industrial Ceramics and Rural Development Unit
4. Entrepreneurship Development Unit (International Development and Graduate Entrepreneurship Training)
5. Consultancy.

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

RESEARCH AND DEVELOPMENT

Suame 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:

- Jatropha decorticator (250 kg/hr capacity) for de-husking Jatropha fruits into seeds. The machine was successfully field-tested and is currently installed in Kparigu, a farming community in the West Mamprusi district, Northern region of Ghana.
- Jatropha oil cook stove for use in seven (7) communities in Kparigu, West Mamprusi district, Northern region, Ghana
- Bamboo Charcoal Crusher (commercial-size) for the production of biomass-based pellets. This was developed for the International Network for bamboo and Rattan (INBAR), an NGO based in Kumasi.
- Commercial size cassava grater (2tonnes/hr) and screw press (300-500kg/hr) for the Kenyasi No.1 cooperative group to use for commercial processing of Gari at Kenyasi in the Brong-Ahafo region.

FOOD AGRICULTURE AND NATURAL RESOURCE DEVELOPMENT (FAND) UNIT

During the year under review, the FAND Unit undertook the following research and development activities:

- EU-funded research and development of Jatropha-based products including the use of Jatropha fruit husks and oil extraction for soap making. The focus of the Jatropha Project is to use Jatropha for sustainable energy and to create income generating activities for the selected rural communities.

- Agronomic studies of Jatropha plant within the rain forest environment is being carried out on a 1 hectare experimental farm to establish: direct seeding, transplanting and intercropping with groundnut.
- The Unit is investigating into the extraction of edible oils (avocado oil) and non-edible oils (Jatropha, neem oil).
- In collaboration with students and faculty members of Olin College, USA, the Unit is working on the R&D of beeswax-based products, particularly for production of bees-wax based lip balm. To date literature on beeswax-based products has been reviewed.

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, de-fluoridation of ground water and industrial waste treatment. Other research areas include clean energy development technologies for high efficiency cook stoves, 4th generation biochar/charcoal using Adam Retort kiln bio-briquettes for clean smokeless. In collaboration with Materials, Chemical, and Geological Engineering Departments, the Unit is carrying out R&D and production of insulating and facing bricks. The goal of this activity is to establish a pilot production unit to commercialize the product and to understand the value chain process for capacity development.

ENTREPRENEURSHIP DEVELOPMENT UNIT (INTERNATIONAL DEVELOPMENT AND GRADUATE ENTREPRENEURSHIP TRAINING)

These units support and offer students the opportunity to apply classroom learning in the field so as to gain an insight into international development through the running of summer schools. 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. In collaboration with the Kumasi Business Incubator (KBI) of the Centre for Business Development (CBD) 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.

During the period under review, 15 engineering students were attached to small engineering firms and foundry workshops at Kumasi Suame Magazine for hands-on and on-the-job vacation training. An evaluation at the end of the 6-weeks training revealed the excitement of the students for the opportunity to practice what they have been learning. They also benefited from the entrepreneurial capabilities of the workshop owners under whom they worked. Certificates of participation were issued to all the students. This will be repeated this year 2012 with a larger intake of students.

MAJOR RESEARCH BY STAFF

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

- Study of Jatropha-based products including methods of extraction, quality improvement and market analysis
- Conversion of waste vegetable oil (WVO) as a potential feedstock for biodiesel production

- Solar photovoltaic electrification and impacts on education, health, ICT, agriculture and micro-enterprises.
- Needs assessment and gap analysis of metalwork engineering enterprises in Kumasi
- Development of beeswax-based products
- Technology and Innovation services for establishing KNUST Technology Park
- Design and construction of institutional cook stoves and furnaces
- Study of household ceramic water filters
- De-fluoridation of ground water in Northern Region of Ghana
- Development of bio-briquettes for clean smokeless cook stoves
- Development and commercialization of facing bricks/tiles
- Development and optimization of 2nd generation “Agyenkwa” cook stove with focus on heat utility and energy efficiency.

NATIONAL COLLABORATIONS

Ghana Jatropha Research Project (GHAJA)

Under a Eurpeaid grant, TCC is working with Savanah 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. An energy facility has been constructed and a 250 kg/hr capacity Jatropha decorticator for de-husking Jatropha fruits into seeds and 4-5 tonnes/day capacity oil expeller have been installed and inaugurated at Kparigu, a farming community in the West Mamprusi district, Northern region of Ghana.

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

During the period under review, the TCC continued with the MIDA Training and Technical Service Provision (TTSP) to train farmer-based organizations (FBOs) in the Sekyere West District of Ashanti region. The objective of the training 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 that accrued from the training activities contributed tremendously to the running of the TCCs activities.

KNUST Technology Park (KTP) Implementation

The KNUST Technology Park is a Public Private Partnership (PPP) between KNUST and Ibis-TeK to create facilities that will 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 in February 2010. During the period under review, the Vice-Chancellor approved of a 9-member working committee to among others, to develop innovative

response strategies for accelerated implementation of the project. The committee is currently working towards the completion of a blue print plus business plan for the project.

Abellon Clean Energy Ltd and Knight Piesold Co Ltd

During the period under review, the TCC collaborated with two private companies, namely Abellon Clean Energy and Knight Piesold Ltd to develop national level projects in the areas of biomass energy development and energy equipment mapping in Ghana respectively. To this end, some expression of interests (EOIs) and request for proposals (RFPs) have been submitted to both local and international development agencies for financial support.

INTERNATIONAL COLLABORATIONS

During the period under review, a number of faculty members and students from the following international Universities collaborated with the TCC on international development and entrepreneurship.

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 co-hosted the International Development Summer Institute (IDSI) class of 2011 from May 14 to June 2011. The program consisted of 5-weeks of pre-program preparation at University of Pennsylvania, USA and a 4-week long training program on the campus of KNUST, Kumasi. Seven (7) KNUST students comprising 3 females and 4 males were interviewed and selected to participate in the summer institute. The programme provided students with the opportunity to have an applied learning and cross-cultural experience. It also gave students the chance to apply classroom learning in the field to gain insight into the world of international development. Owing to the success of the previous IDSI, faculty and students of UPENN have expressed the interest to visit KNUST for IDSI 2012.

TCC-MIT 2011 International Development Design Summit (IDDS)

The IDDS 2011 event was held from June 22 to August 7, 2011 at the KNUST campus. It was the second event to be held outside of the United States of America. Building on the success of IDDS 2009, which was organized at KNUST, IDDS 2011 contributed to strengthening the collaboration between Massachusetts Institute of Technology (MIT), USA and KNUST. IDDS 2011 sought to increase the involvement of KNUST students and faculty members who served as design reviewers. In line with KNUST community impact objective, IDDS 2011 involved local communities around Kumasi, Suame Magazine and New Longoro in Brong-Ahafo region, Ghana.

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

The TCC is collaborating with Olin College and Babson College of Boston, USA 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, 5 engineering students of KNUST

collaborated with students of OLIN on the development and marketing of bees-wax based lip balm. Further research is being carried out to analyse the value chain for development and promotion of the business in Ghana. As a follow-up, a team of faculty and students from OILN will visit the TCC from mid-May to end of May 2012. It is also envisaged that in the near future five (5) students from the Departments of Agricultural Engineering and Mechanical Engineering Department will travel to Olin College in Boston, USA to use their design laboratories to co-create relevant design solutions.

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. He also teaches the following postgraduate courses at the Department of Planning: Quantitative Methods for Planning and Spatial Statistics.
- Dr. Peggy Oti-Boateng has been teaching Human Nutrition and supervises students' research projects at Biochemistry and Biotechnology Department, College of Science, KNUST, Kumasi (Currently on study leave).
- 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.

SERVICE TO COMMUNITY

Senior members of the Centre continue to serve on various committees and boards in the University, Ghana and Internationally.

Dr. George Yaw Obeng serves on the Research Innovation and Conference Committee of College of Engineering, KNUST Intellectual Property Committee, KNUST Technology Park Committee, Panel Member for Accreditation of Koforidua Polytechnic, Working group on Africa Renewable Energy Technology Platform (AFRETEP). He is also a member of the College of Engineering Board. He served on the international planning committee for organizing 4th ICAT in Accra, Ghana.

Dr. Peggy Oti-Boateng is an external examiner for the Department of Community Health and Nutrition at the University of Development Studies in Tamale. She is a Consultant Programme Specialist in Basic and Engineering Sciences for UNESCO, Africa Regional Office; She is a member of the Ghana Science Technology and Innovation (STI), Policy Drafting Committee. Member of the International Advisory Committee for the 15th International Conference of Women Engineers and Scientists (ICWES15). And she also serves on several Committees and Boards at the National and International levels.

Mr. John Quansah is the Chairman of Local Organizing Committee International Development Design Summit (IDDS); MIT, USA. Member, Organizing Committee Annual Summer School

International Development Summer Institute (IDSI), for students from KNUST and the University of Pennsylvania (USA).

Mr. Donald Amrago is a member of the College of Engineering Guest House management board and a member of the College of Engineering maintenance committee. He serves on the KNUST United Protestant Committee. He also served as KNUST representative on AGI INDUTECH Kumasi Exhibition Committee as well as a local committee member of 4th ICAT, in Accra. Chairman of the Local Organizing Committee, International Development Summer Institute (IDSI) for students of University of Pennsylvania (USA) and KNUST.

Mr. Michael K. Adjaloo is a Member of the Committee to Investigate the Undue delay in the Refurbishment of the Vice Chancellor's Residence. Member, Committee for Retooling of Laboratory Facilities, College of Engineering. Member, Committee for Naming of University Facilities. Member, Local Organizing Committee, International Development Design Summit (IDDS) Summer School 2011. Member, Local Organizing Committee, International Development Summer Institute (IDSI) for students of University of Pennsylvania (USA) and KNUST.

Mr. Michael Commeh is the head of the Applied Industrial Ceramic and Rural Enterprise Unit of TCC. He is a member of the Turkson Foundation and serves on several national and international committees.

THE ENERGY CENTER

INTRODUCTION

The Energy Center (TEC) started activities in 2006 and was formally approved by the Academic Board of Kwame Nkrumah University of Science and Technology (KNUST) in 2009. Over the years TEC has provided a platform for the pursuit of multidisciplinary research and development activities at KNUST, pulling resources from the College of Engineering (CoE) as well as other Colleges of the university. Thanks to these activities TEC's vision to become "a globally-recognized centre of excellence for energy in Africa" is fast becoming reality and this report will highlight achievements over the last academic year, from about July 2011 to May 2012.

RESEARCH AND CONSULTANCY

In the area of renewable energy technologies there was a Solar Capacity Upgrading Project (SolarCUP) that involved several partners across West Africa with financial support from the World Bank. Through SolarCUP TEC obtained facilities and tools for research and training, including:

- 20 kWp grid-connected PV system which is now installed on the roof of the Professorial Block at the College of Engineering;
- WMO (World Meteorological Organization) class one equipment for solar radiation measurements and data analysis; and
- Various software for renewable energy project analysis (WAsP, PVSYST, TRNSYS and METEONORM).

There were also two biofuel projects, one on Jatropha Biofuel SMEs supported by Trust Africa and the other one on Second Generation Biofuels with provision for a doctoral research student supported by DANIDA. Furthermore, work is ongoing to develop small wind turbines for deployment in moderate wind-speed regimes such as those encountered in Ghana. Energy policy is another area where studies have been undertaken with a GIS-based Energy Access Project financed by the European Union Energy Initiative – Partnership Dialogue Facility (EUEI-PDF) and two energy access surveys supported by the World Bank’s Energy Sector Management Assistance Program (ESMAP) and UNDP.

TEC has recently won two research grants from the African Union (AU). One of the AU projects is on Grid-connected Solar PV Systems for which TEC is the main beneficiary with the University of Botswana and University of Flensburg, Germany as partners. The other AU project is on Solar Thermal Power Plant Manufacturing with the International Institute for Water and Environmental Engineering (2iE) in Burkina Faso as the main beneficiary and TEC as one of several partners.

In the area of consultancy one project was undertaken under the auspices of the ECOWAS regional centre on Renewable Energy and Energy Efficiency (ECREEE) and this involved a study of capacity and training needs in energy sector institutions across West Africa; this consultancy assignment was implemented in partnership with 2iE and the University of Cape Verde. A total of 10 papers have been published by TEC Fellows and Junior Associates during the period under review.

TEACHING AND RELATED ACTIVITIES

An e-Learning MSc programme in Renewable Energy Technologies (RETs) took off with the first batch of forty-seven (47) students. The e-Learning MSc RETs programme was developed under the EDULink Renewable Energy Education Project (REEP) with support from the European Union’s Africa, Caribbean and Pacific (ACP) Secretariat. REEP had two (2) partners, 2iE and the University of Havre in France. With additional support from SolarCUP, REEP made it possible to organize many short courses in areas like Solar Thermal Power, Solar PV Systems Design and Installation, Small Wind Turbines Manufacturing, Bioenergy/Biogas/Biofuels and Energy Policy and Planning with an introduction to Long-range Energy Alternatives Planning (LEAP) and RETScreen software packages.

Thanks also to SolarCUP an Automatic Weather Station (AWS) was installed in the Solar Energy Applications Laboratory of the Department of Mechanical Engineering and the training on its installation, operation and maintenance was conducted by Sutron of USA from 23 April to 2nd May, 2012. Thirteen (13) trainees were involved in the programme comprising three lecturers of KNUST, 1 technician each from the Departments of Mechanical and Electrical Engineering, and three (3) MSc Mech Eng students all from KNUST. Trainees from outside the university consisted of two (2) Liberians working with the Liberian Ministry of Land, Mines and Energy, two (2) participants from industry and one (1) lecturer from Koforidua Polytechnic.

Other workshops and seminars during the period under review include the 2nd Generation Biofuels Workshop organized in partnership with the Institute for Industrial Research (IRI), Council for Scientific and Industrial Research (CSIR) and the University of Southampton in the UK, and a series on “LPG in Ghana – From Crisis to 50% Access” held every Wednesday over a

period of some eight (8) weeks in the First Semester of the 2011/12 academic year. It is hoped that the second Flagbearers on Energy (FoE) Special Seminar Series, originally planned for April, will come off later this year.

A distinct feature of TEC's recent training programmes in Ghana is the collaboration with national energy institutions such as the Volta River Authority (VRA), Grid Company (GRIDCO), Public Utilities Regulatory Commission (PURC), Ghana Energy Commission and the Ministry of Energy. Opportunities have also been offered for the training of staff from a number of polytechnics in Ghana notably Accra, Tamale, Takoradi, Wa, Bolgatanga, Koforidua and Ho Polytechnics.

At the regional level TEC organised an ECOWAS-wide Training Programme on GIS and RETSCREEN with ECREEE.¹ The first International Solar Energy Experts (I-SEE) Workshop was also organized within the framework of SolarCUP in the e-Classroom, College of Engineering, KNUST from 2nd to 4th August 2011; plans are now far advanced for the second I-SEE to be held again at KNUST from 29th to 31st of May 2012.

OTHER ACTIVITIES

TEC Fellows and Associates have undertaken national as well as international service in various forms. With respect to national service two TEC Fellows, Prof Abeeku Brew-Hammond and Dr Rudith King, continued to serve as Board Chairman and Board Member, respectively, for the Ghana Energy Commission thus making significant contributions to public-sector governance in the country. Two TEC Junior Associates have also undertaken specific pieces of work related to the monetization of natural gas resources in Ghana, with technical and financial support from the international oil and gas company, Technip.

With respect to international service, the TEC Director was appointed by the United Nations Secretary-General Ban Ki-moon as a Technical Group Member within his High-Level Group on Sustainable Energy for All (SE4All) and TEC Fellows including Dr David Anipa, Mr. Emmanuel Ramde, Mr. Francis Kemausuor and Mr. David Ato Quansah have attended and rendered services at many international meetings such as the 5th Joint EDULink Stakeholders Conference in Brussels (October, 2011), the international training session on Biofuels Potentials and Opportunities in Ouagadougou (November, 2011), the RETScreen Annual Conference and Training Institute in Canada (June, 2011) and the International Renewable Energy Agency/US National Renewable Energy Laboratory (IRENA/NREL) Workshop on Best Practices in International Renewable Energy Technology Cooperation in Colorado (November, 2011).

A number of MOUs have also been signed with various institutions like 2iE in Burkina Faso, ECREEE in Cape Verde, the University Port Harcourt in Nigeria and the University of Delaware in the US all with the aim of enhancing international cooperation in the areas of energy research and education.

¹ For further details please see <http://ecreee.vs120081.hl-users.com/website/index.php?training-workshop-on-renewable-energy-and-energy-efficiency>.

ORGANISATIONAL RESOURCES

The Energy Centre, KNUST has operated to date as a virtual centre with a lean office staffing structure consisting of the Director and a Senior Administrative Assistant supported by five (5) national service personnel. TEC currently has about sixty (60) Fellows drawn from practically every College of KNUST and almost fifty (50) Associates of which a good number are graduate students in various disciplinary areas across the university.

TEC has a Management Board which is chaired by the Provost of the College of Engineering and has representatives from all five other Colleges of the university as well as the four main disciplinary areas in the CoE.

So far, TEC activities have been funded from projects undertaken by TEC Fellows and Junior Associates from the College of Engineering and the College of Architecture and Planning. Close to one (1) million American dollars has been received or approved for payment during the period under review; approximate amounts for each project are summarized in the table below.

	Project Title, Coordinator and Sponsor	Amount Received/Approved (US\$ approx)
1.	Solar Capacity Upgrading Project (SolarCUP) , Mr David Ato Quansah – World Bank Clean Energy Investment Framework Multi-Donor Trust Fund	440,000
2.	EDULink Renewable Energy Education Project (REEP), Dr David Anipa – EU ACP EDULink Programme ⁺	200,000
3.	GIS-based Energy Access Project (GIS- EAP), Mr Francis Kemausuor – European Union Energy Initiative Partnership Dialogue Facility (EUEI PDF)	120,000
6.	Jatropha Biofuel SMEs, Dr Ahmad Addo – Trust Africa	20,000
	Brain Gain Initiative/Grid-Computing for Renewable Energy Research, Dr Cephas Idan – UNESCO & Hewlett Packard	20,000
4.	Energy for the Urban Poor, Dr Rudith King – World Bank Energy Sector Management Assistance Program (ESMAP)	144,000
5.	Energy Access Survey, Mr Owusu Amponsah – UNDP Dakar Regional Office	6,000
6.	Flagbearers on Energy (FoE) Special Seminar Series – UNDP Ghana Country Office and several Ghanaian companies (GECAD, Xpress Gas & Anaset) [*]	20,000
	Total	970,000

⁺ About half of the total amount received estimated at some US\$400,000 was passed on to the project partners, 2iE in Burkina Faso and the University of Havre in France.

^{*} UNDP has disbursed a little over GHS20,000 and several Ghanaian companies have also donated close to GHS10,000 in cash.

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

Provost	-	Prof. E. T. Agbenyega
Ag. College Registrar	-	Mr. H. H. Akosah
Ag. College Accountant	-	Mr. Johnson Owusu
Ag. College Librarian	-	Mr. V. K. Teye

ACTIVITIES

4TH SCIENTIFIC CONFERENCE

The College organized its 4th Scientific Conference at the Great Hall, KNUST, from 1st to 2nd September, 2011. The Conference was under the theme ‘Reproductive and Child Health – Trends and Challenges.

WORKSHOPS

- A day’s workshop on the theme “The Secretary as a Pivot of Effective and Efficient Administration in the University” was organised for Administrative/Secretarial staff in the College in July 2011.
- A workshop on postgraduate supervision was organised for some staff in the College from 7th to 9th February, 2012. It was organised in collaboration with the Malaria Development Consortium with support from the London School of Hygiene and Tropical Medicine.
- A workshop on the theme “Financial Management – A Practical Approach” was organised for accounting staff of the College on 14th March, 2012.

INTRODUCTION OF NEW PROGRAMMES

Proposals for the following programmes have been submitted to the Planning and Resources Committee for consideration

- BSc Physician Assistant Studies
- Diploma in Emergency Nursing
- BSc Physician Assistant (Anaesthesia)

BSc degree programme in Disability and Rehabilitation Studies has been mounted.

INFRASTRUCTURE /PROJECTS

- Plans are far advanced to put up a College Classroom and Laboratory Complex
- Structures are being put in place for work on the KNUST Teaching Hospital to begin
- The 3rd phase of the Clinical Students Hostel at KATH has been completed. The project was funded by the GETFund at a cost of GH¢320,000.00

The College is hosting the project “Platform on Human Health” under the Building Stronger Universities Initiative. The project which covers the period August 2011 to July 2013 seeks to strengthen institutional capacity in the areas of research, research-based education and research dissemination.

- Stimulation/Skills Centre is been established at KATH for students. The project which is being funded with both Ghana government and internally generated funds is 98% complete.

EQUIPMENT/FACILITIES

The following are being procured to enhance Teaching, Learning and Administrative work in the College.

- 20 Desktop Computers
- 10 LCD Projectors
- 15 Printers

PUBLICATIONS

The 4th edition of the College’s newsletters has been published.

Human Resource Development

- Three (3) former students who were sponsored to pursue MSc degree programmes have successfully completed their programmes and have been offered lectureship appointment.
- Three (3) persons have been sponsored to pursue the following programmes abroad.
 - ❖ MSc in Sports Science (2 students)
 - ❖ MChD (Oral Pathology)

Vehicle

A Toyota Land Cruiser vehicle has been procured for the School of Medical Sciences.

FACULTY OF PHARMACY AND PHARMACEUTICAL SCIENCES

INTRODUCTION

The Faculty of Pharmacy & Pharmaceutical Sciences is the premier training institution of pharmaceutical manpower in the country. Currently the Faculty offers two undergraduate programmes: Bachelor of Pharmacy and Bachelor of Science in Herbal Medicine. The former will soon be replaced with a 6-year Doctor of Pharmacy Programme to follow global trends and to train graduates with the requisite knowledge and skills to provide contemporary pharmaceutical care. The Faculty also provides training at the graduate level in all the pharmaceutical sciences leading to the award of MSc., MPhil and PhD degrees. Over the years the Faculty has carried out this primary responsibility of training healthcare providers in the area

of Pharmacy and Herbal Medicine with all diligence and distinction. Training of over 95 % of Pharmacists in the country, the herbalists earmarked to manage the herbal clinics/ units in public health facilities and majority of the scientists manning pharmaceutical industries in the country, are some of the Faculty's accomplishments.

CAPACITY BUILDING

The Faculty continued to offer postgraduate training in the various pharmaceutical sciences. The Programmes include MPhil and PhD training in Pharmacology, Pharmacognosy, Pharmaceutics and Pharmaceutical Chemistry. In addition, MSc degree programmes in Pharmaceutical Analysis and Quality Control and Clinical Pharmacy are offered. Over the last few years the Faculty has made a conscious effort to promote these graduate studies and this has resulted in a surge in numbers of graduate students on these Programmes. In order to ensure that graduate students take the studies seriously and finish on time, the Faculty organized a one – day workshop for its graduate students on the theme “*Becoming a Good and Successful Graduate Student*”. The goal of the workshop was to bring all the graduate students in the Faculty together to discuss their roles and responsibilities as well as those of their supervisors. The workshop will be organized each year for new graduate students admitted into the Faculty.

The Faculty continued to improve teaching and research by building and strengthening the capacity of its staff. During the year under review, two Senior Members, Messrs Samuel Asare – Nkansah and Raphael Johnson of the Departments of Pharmaceutical Chemistry and Pharmaceutics respectively, gained DAAD awards to pursue PhD degrees in Germany. Dr. A. Y. Mensah a Senior Lecturer in the Department of Pharmacognosy, visited the University of Michigan, USA, and the University of Bradford, UK, to enhance his skills in medicinal plant research.

INFRASTRUCTURE

During the year under review, the Faculty continued to create conducive environment for teaching and research. Comfortable tables and chairs valued at Eighteen Thousand Ghana Cedis (GHc 18,000.00) were acquired for our Classrooms.

The Faculty also refurbished the animal house for rearing of animals needed for teaching and research experiments, and has constructed a new laboratory for animal experiments. These developments will facilitate postgraduate training in Pharmacology in particular, and graduate studies in the Faculty in general. This will also facilitate the Faculty's pursuit of ethical practices in carrying out animal experiments.

The TALIF – funded Pharmacy Practice Laboratory sited in the Department of Clinical and Social Pharmacy has been completed and handed over to the Department for teaching and learning of Pharmacy Practice.

The Molecular Biology and Cell Culture laboratory which was established with funds from TALIF, needed to be made airtight and facilities put in place to make it useful for Molecular Biology and Cell Culture research. This has been completed and handed over to the Department for use, with funds from the Faculty's internally generated funds.

The water system in the Faculty has been re – engineered to improve the water situation in the Faculty. This has resolved the perennial water problem that has plagued the Faculty over the years and has improved sanitation in the washrooms. In addition, two new sets of washrooms have been constructed to ease the stress on the existing ones. Furthermore, the painting of the New Block of the Faculty has been completed with funds from GETFund.

Unfortunately, the Faculty was hit by natural disasters during the year under review. The Vodafon mast sited in the Faculty, which provided the wireless facility to the University, crashed unto the A wing of the new Pharmacy Block during a rainstorm, destroying some parts of the roof over the Organic Chemistry Laboratory and part of the garage at the car park. There were no casualties and the damage to the Laboratory and the garage has been fixed. In the same week the distribution system for electricity supply to the old Block of the Faculty Building caught fire but this was put out using the fire extinguishers fitted in the corridors. The problem was immediately fixed.

VISITS

During the year under review, a delegation of the National Executive of the Pharmaceutical Society of Ghana, led by the President Pharm J. O. Kyei and the Executive Secretary Pharm Denis Awitty, visited the Faculty to discuss the academic Programmes of the Faculty particularly the Pharm D and the Top Up Programme for HND holders in Dispensing Technology.

Similarly, the Pharmacy Council led by the Registrar of the Council visited the Faculty on two occasions for accreditation purposes and to orientate the final year students on their internship programme.

The Faculty also received a delegation from Ohio Northern University (ONU) led by the Dean, Professor Jon Sprague. This visit resulted in the signing of a Memorandum of Understanding (MOU) between the two institutions. The goal of the MOU is collaboration between the two institutions, particularly in faculty and student exchange, and support for the Pharm D Programme at KNUST.

SERVICE TO COMMUNITY

The Faculty continued to provide service to the community at both local and national levels. Staff of the Faculty served on many statutory and non – statutory committees of the University. Dr. K. Ofori Kwakye was appointed as the external examiner for the Pharmacy Programme at the Central University College (CUC). Prof. T. C. Fleischer was also appointed to represent the University on the academic board of CUC.

The collaboration between the Ministry of Health and its agencies to provide support for health care delivery services was further strengthened during the year under review, with Senior Members of Staff serving as members of the Pharmacy Council, Traditional Medicine Practice Council and the Council for Scientific Research into Plant Medicine. Senior members also served on various sub-committees of the above – named Councils, Food and Drugs Board and “Better Medicines for Children”, a WHO – MOH Committee.

INTERNATIONAL COLLABORATION

The Faculty maintained its links with Universities abroad. Staff of the Faculty continued to serve in various capacities on the West African Postgraduate College of Pharmacists, the West African Health Organization (WAHO), the International Federation of Pharmacists (FIP) and Commonwealth Pharmaceutical Association (CPA) to define the training needs of Institutions of Pharmacy and improve the quality of pharmacy education and practice globally. Currently the Faculty is actively involved in the West African Health Organization (WAHO) programme of harmonisation of pharmacy education in the West African region.

CHALLENGES

Faculty continues to grapple with inadequate classroom and laboratory space. The laboratories need some basic equipment for teaching and research. The Faculty needs to do more to attract alumni to support in the mentoring of the students to prepare them for the job market. The student numbers have increased greatly over the past few years. There is therefore the need to employ new academic and technical Staff to help in the training of students.

BENEFACTORS

We are grateful to our alumni, Pharm Daniel Mensah and Pharm Isaac Adupong, who visited the Faculty and held mentoring sections with the final year students. Our guests from Ohio Northern University also donated textbooks to the Faculty library.

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 specialized 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 specialized 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 industrialized 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 (B. Pharm) 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 MPhil and PhD students. Currently there are fifteen (15) postgraduate students: MPhil nine (9) and PhD six (6).

FACULTY MEMBERS

During the year under review, one senior member of the Department in the person of Dr Abraham Yeboah Mensah had the opportunity to participate in the University of Michigan

African Presidential Scholars Programme (UMAPS) organised by the African Studies Centre. He also won a Fellowship award from the Commonwealth Scholarship Commission, UK tenable at the University of Bradford, UK. The Department has a total number of Senior Members of four (4) namely:

1. **Dr (Mrs) Rita Akosua Dickson:** *Senior Lecturer/ Head*
2. **Emeritus Professor Kwame Sarpong:** *Emeritus Professor*
3. **Dr Abraham Y. Mensah:** *Lecturer*
4. **Gustav Komlaga:** *Lecturer*

MAJOR RESEARCH BY STAFF

The Department continued to strive to be the best by achieving excellence through its research efforts by staff. A number of researches into natural products particularly those from medicinal plants have been carried in the year under review.. Notable among these are standardization 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 antimalarial, antibacterial, antifungal and antioxidant activities as well as wound healing, antiinflammatory, antidiabetic, antihypertensive, antiasthmatic, anthelmintics, antipediculocidal and antifeedant 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.

WORKSHOPS ATTENDED BY SENIOR MEMBERS

During the year under review, the following workshops were attended by Senior Members of the Department

1. **Dickson, R. A.** ‘Workshop on Building Stronger Universities (BSU) in developing countries: KNUST and Universities of Denmark- Platform on human health’-SMS conference room, March, 2012
2. **Dickson, R. A** ‘Workshop on postgraduate supervision’- Noda Hotel, Kumasi February, 2012
3. **Dickson, R. A** ‘Workshop on utilization of patent information for research institutions and users of the patent system’-Accra, Ghana-October. 2011
4. **Dickson, R. A** ‘Module writing workshop’- KNUST, Kumasi, March, 2011

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 GUSS 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 served 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 Health 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. At the international level, Emeritus Professor Kwame Sarpong served as the Chairman, Drug Advisory Committee, West African Postgraduate College of Pharmacist. Dr (Mrs) Rita Akosua Dickson continues to serve as the Country Coordinator for the West African Network of Natural Product Research Scientists (WANNPRES).

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 main basis 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 animal. The subject covers areas such as Pathogenesis and Immunology, Chemotherapy, Sterilization & Disinfection and Preservation. Industrial fermentation and biosynthetic processes used for the production of compounds of both medical and industrial importance such as antibiotics, vitamins, blood expanders etc. are also covered. It also covers sterile products formulation, manufacture and quality assessment.

PROGRAMS OFFERED BY THE DEPARTMENT

The Department teaches Dispensing theory, Dispensing laboratory, Sterilization and Disinfection, Infections, Basic Microbiology, Microbiology 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, Chemotherapy, 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.

SENIOR MEMBERS IN THE DEPARTMENT

Below are the names, qualifications and ranks of the senior academic staff members in the Department:

F. Adu, – Senior Lecturer/Head of Department

K. Ofori-Kwakye, – Senior Lecturer

M. T. Bayor, – Senior Lecturer

S. Y. Gbedema– Senior Lecturer

C. Agyare – Senior Lecturer

S. L. Kipo – Senior Lecturer

*R. Johnson– Lecturer

*N. Kuntworbe – Lecturer

V. E. Boamah – Asst. Lecturer

Mariam El-Duah (Miss) - Asst. Lecturer.

* *On study leave*

RESEARCH IN THE DEPARTMENT

The Department intensified 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:

1. Antimicrobial activities of some Ghanaian medicinal plants
2. Evaluation of the binding properties of shea tree gum
3. *In vitro* efficacy of some anti-boil herbal preparations on the Ghanaian market
4. Antibacterial, resistance modulation and wound healing activities of *Etandrophragma angolense* (Melicaceae)
5. The use of natural products, particularly plant extracts as bacteria resistance modifying agents
6. Antibiotic resistance in poultry, piggery and other animals
7. Evaluation of antifungal activity of tablets made from the stem bark of *Magnifera indica*
8. Evaluation of antimicrobial activity of tablets made from the roots of *Paulina pinnata*
9. Identification of antimicrobial metabolite-producing microorganisms from water bodies in Ghana
10. Anti-malarial properties of some natural products

During the 2011/2012 academic year Miss Mariam El-Duah, Miss Doris Kumador, graduated with MPhil (Pharmaceutics) degree while Miss Tawiah Adelaide Ama, Duredoh Freeman SR George and Sixtus Bieranye, Bayaa Martin Saana graduated with MPhil (Pharmaceutical Microbiology) degree.

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 4th Annual Scientific Conference of the College of Health Sciences, KNUST, held at Great Hall, KNUST, Kumasi, from 1st –2nd September, 2011. Senior Members were also active participants at the 76th Pharmaceutical Society of Ghana (PSGh) Conference which was held in Accra at the National Theatre, Accra, from **5 – 10 August**, 2011. Senior

Members also attended the Pharmacy Council organized 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. The Department is seriously working out a relationship with industry to make results of research available to industry and to assist industry with Research and Development.

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 PHARMACOLOGY

INTRODUCTION

The Department of Pharmacology continues to play a key role in the University as the only department involved in the teaching of pharmacology and toxicology to almost all the students in the College of Health Sciences and to optometry students in the College of Science. In performing this unique role, the department ensures that courses for the different categories of students in the biomedical sciences are designed to meet the exact needs of students without compromising on the basic principles that are essential to appreciate the implications of drug action and use in humans and animals.

TEACHING

The Department offers courses in physiology, basic/applied pharmacology and toxicology to undergraduate students studying for the following programmes in the College of Health Sciences and Science:

- Bachelor of Pharmacy (Honours) degree programme.
- BSc. Herbal Medicine
- BSc. Human Biology for Medicine & Dentistry
- BSc. Nursing (General, Emergency, Midwifery)
- BSc. Medical laboratory Technology
- O.D Optometry

In addition, staff of the department undertakes postgraduate teaching for students on the 2-year Master's and 3-year doctorate programmes in natural products Pharmacology and toxicology. The department is also aware that new courses, for example the BSc. Physician Assistantship course may commence very soon and is therefore bracing herself for the challenges ahead.

ACADEMIC MEMBERS AND STAFF DEVELOPMENT

The pursuance of a vigorous staff development programme aimed at training PhD students locally has begun to yield dividends. We are pleased to announce that two of our Ph.D graduates Drs Eric Boakye Gyasi and Wonder Kofi Abotsi joined the teaching staff of the department during the year under review. We are hoping to bring Dr Kwesi Boadu Mensah, who graduated recently from the department to join us in the coming year to augment the staff strength of the department.

Below are the academic senior members of the department.

C. Ansah (Rev), - *Assoc. Professor/ Head*

E. Woode, - *Assoc. Professor*

D.D. Obiri, - *Senior Lecturer*

G.A. Koffuor, - *Senior Lecturer*

G. K Ainooson, - *Lecturer*

C.A. Danquah (Mrs), - *Lecturer*

E. Boakye-Gyasi, - *Lecturer*

W.K.M Abotsi, - *Lecturer*

*F. Amissah, - *Lecturer*

* On Study leave

CONFERENCES AND MEETINGS

During the year under review, members of the Department took part in the Continuing Education for Pharmacists organized by the Pharmacy Council and the Pharmaceutical Society of Ghana. In addition, members of the Department participated actively in the Annual General Meeting and Conference organized by the Pharmaceutical Society of Ghana. Two (2) members of the Department Prof. Charles Ansah and Prof. Eric Woode participated in the West African Postgraduate College of Pharmacists Conference held in The Gambia in March 2012.

POST-GRADUATE TRAINING

The Department is actively involved in the training of post-graduate students. During the period under review 3 of our PhD students graduated. We expect at least 3 more to graduate in the coming year. Presently, the department can boast of 24 graduate students researching into various aspects of natural product pharmacology and toxicology.

RESEARCH AND COLLABORATION

Departmental research involves pharmacological and toxicological investigations aimed at elucidating the scientific basis for the therapeutic efficacy and safety of indigenous medicinal plants of Ghana. The Department has specific interest in the area of medicinal plants with potential anti-inflammatory and analgesic, immunostimulant, anticonvulsant, antidiabetic, antiasthmatic, antioxidant and hepatoprotective actions and those that enhance learning and memory.

The Department has research links with the Departments of Theoretical and Applied Biology, Molecular Medicine, Medical Laboratory Technology of the KNUST and strengthened its links with the Centre for Scientific Research into Plant Medicine over the past year.

Additionally, the Department collaborates with the Molecular Toxicology Unit of Imperial College London in the area of possible anticancer agents from plant sources.

CELL/TISSUE CULTURE LABORATORY

The equipment received under TALIF to enhance graduate teaching and learning have been installed in the new cell culture facility. With the new laboratory, we expect to cut down considerably on the overdependence on animal experiments. We hope to improve the molecular aspects of our research and look forward to publish some of our research findings in high-impact factor journals in the near future. We are also confident that we will be able to step up our graduate training considerably in the coming years.

SERVICE TO THE COMMUNITY

The Department provides consultancy services to the local pharmaceutical industry, research establishments, clinics, traditional medical practitioners and individuals on the therapeutic potential and toxicity profile of new drugs and medicinal plant products.

Members of the Department continue to provide professional services to various Government Departments such as the Traditional Medicine Directorate of the Ministry of Health, the Pharmaceutical Society of Ghana, the West African Postgraduate College of Pharmacists and the Ghana College of Physicians and Surgeons. A member of the Department serves on the Council of the West African Postgraduate College of Pharmacists.

In addition, some members of the Department have continued to serve as External Examiners and Assessors to Universities and Polytechnics in and outside Ghana and also as assessors' for scientific journals.

Some members of the department also served as resource persons for programmes organized by the Pharmacy Council for Pharmacists.

AWARDS

We are pleased to report that our colleague, Professor Eric Woode won the Best Researcher Award in the Health Sciences in the University last year.

DEPARTMENT OF CLINICAL AND SOCIAL PHARMACY

INTRODUCTION

The Department's aim is to achieve excellence in teaching and research in pharmacy practice. Patient-oriented practices and pharmaceutical care, the primary mission of pharmacy worldwide, is our focus. Teaching in the department therefore seeks to provide students with core skills and knowledge required for the practice of pharmacy at all levels of health care delivery.

PROGRAMMES OFFERED

PhD in Clinical or Social Pharmacy: currently six (6) students have enrolled into the PhD programmes and are researching into the best ways to optimise the interventions for the prevention, management and control of Non Communicable diseases like Heart Failure, Hypertension and Asthma, others are also researching into optimisation of tools and interventions for the prevention, management and control of malaria and HIV/AIDS.

MSc in Clinical Pharmacy: The department also offer MSc courses in Clinical Pharmacy (**by distance learning**) for practitioners in addition to residential MSc programme in Clinical Pharmacy.

At the undergraduate level, Clinical and Social Pharmacy courses are thought as part of a composite degree in Bachelor of Pharmacy. Students in the third year of the undergraduate studies also undertake a 6 weeks industrial training to gain some practical experience on the field.

FACULTY MEMBERS

The full-time Lecturers in the Department are:

Kwame Ohene Buabeng, - *Senior Lecturer and Head*

**Mahama Duwiejua, - *Professor.*

Frances Thelma Kwabea Owusu-Daaku, - *Assoc. Professor*

Berko Panyin Anto - *Lecturer*

Afia Frimpomaa Asare Marfo, - *Lecturer*

**on Sabbatical leave

TEACHING AND RESEARCH

The full time academic senior members are assisted by lecturers from the Department of Pharmaceutics as well as Pharmacology and part-time lecturers from Komfo Anokye Teaching Hospital and Suntreso Government Hospital. Senior Members are actively involved in researching to improve drug use in hospitals and at the community level. Other areas of research are on pharmacy practice, society's attitude and health-seeking behaviours that impact on patient and population health.

SERVICE TO COMMUNITY

Senior Members in the Department have been actively involved as Facilitators in workshops for practicing pharmacists in health systems and pharmacy practice research. Others have been engaged as consultants to various projects including Access to medicines for malaria and HIV/AIDS and healthcare financing. Some senior members are also involved in the writing and review of drug policy documents for the ministry of health.

Service by senior members to the University has improved remarkably with all the senior members serving on various committees in the college of Health Sciences and the University at large.

BENEFACTORS AND INTERNATIONAL AFFILIATIONS

The Department's affiliation with the Department for Practice and Policy, University of London School of Pharmacy is still ongoing. The link with the School of Pharmacy, University of Eastern Finland, Kuopio has resulted in the exchange of four (4) undergraduate students from Finland to Ghana. Following that, one senior member has visited University of Eastern Finland, Kuopio as a visiting lecturer.

DEPARTMENT OF HERBAL MEDICINE

INTRODUCTION

The Department is to produce healthcare professionals who will provide healthcare using locally available plant medicine resources. The ultimate goal is to bring science and technology to bear on the practice of Traditional Medicine in the country, and thereby modernize and improve the quality of the practice, and make it more acceptable and accessible.

PROGRAMME OFFERED

The Department coordinates the 4-year multidisciplinary BSc Herbal Medicine Programme. It offers various courses related to phytotherapy, disease prevention and health promotion. The new revised curriculum that strategically positions the graduates to excellently promote herbal medicine practice in the country and beyond is in use.

DEPARTMENT MEMBERS AND THEIR RANKS

The Department had a staff of three full time Senior Members, Dr. Kofi Annan (*Head*, on secondment from Pharmacognosy Department), Prof. T. C. Fleischer, Prof. M.L.K Mensah and Mr. G.H. Sam, and one part-time lecturer Dr. Yaw Bio (Director, KNUST Hospital). The Department also enjoyed the services of Herbalist Kofi Asare Osafo who has been assisting with the practical orientation of students during their training.

MAJOR RESEARCH BY STAFF

The Department was engaged in 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.

SERVICE TO THE COMMUNITY

During the year under review, Senior Members of the University offered services in various capacities to the University and the Nation. At the Faculty level they all served on the Faculty Board. Some members serve on the College Board, the Academic Board and some of their sub-committees.

Members continued to serve as resource persons or experts on various technical/Expert Committees of the Traditional and Alternative Medicine Directorate (TAMD), Traditional Medicine Practice Council (TMPC) and the Centre for Scientific Research into Plant Medicine (CSRPM), all under the Ministry of Health, and Ghana Standards Boards (GSB) and West African Health Organization (WAHO).

VISITS TO THE DEPARTMENT

A 10-member government delegation from Gambia together with the Director of Burkina Faso (Burkina Faso) Food and Drugs Board, Dr. Eloi Some, visited the Department on 24th January, 2012.

Prof. Tony Elujoba, Ile Ife University, Nigeria visited the Department and had interactions with the Herbal Medicine Students on 6th February, 2012. A delegation from the Traditional

Medicine Directorate of Ministry of Health, Cote d'Ivoire visited the Department to acquaint themselves with our mode of operations on 3rd April, 2012.

DEPARTMENT OF PHARMACEUTICAL CHEMISTRY

INTRODUCTION

Some of the major responsibilities of the pharmacist include provision of quality and efficacious pharmaceuticals, design of new products and/or modification of existing drugs for effective management of diseases and for diagnostic purposes in medicine.

As one of the six departments of the Faculty of Pharmacy and Pharmaceutical Sciences, College of Health Sciences, the department of Pharmaceutical Chemistry specialises in the various analytical methods used in determining the quality of pharmaceutical products, the chemistry of various drug molecules including their properties, synthesis and reactions, their metabolic fate and pharmacokinetics. Students are taught all aspects of spectroscopic methods of analysis including uv-visible, ir, nmr, mass and fluorescence spectroscopy, hplc and other spectroscopic methods for both qualitative and quantitative analysis.

TEACHING

Pharmaceutical chemistry is the branch of applied chemistry, which embraces organic, bio-inorganic, physical, medicinal and analytical chemistry, and the applications of these disciplines in the preparation, synthesis, standardization, interpretation of drug interactions and analysis of chemical substance for medicinal use.

The objectives of pharmaceutical chemistry courses are that at the end of four years, the students should be able to apply their knowledge of the fundamental concepts and principles in organic, physical, medicinal and analytical chemistry to pharmaceuticals and then relate these concepts to drug usage in the practice of pharmacy.

The Department has therefore been involved with the teaching of the above courses from First to Final Year in the year under review. We have also given lectures to postgraduate students on advances in spectroscopic methods including hplc methods of analysis to assure good quality in pharmaceutical products. The department has a total of 15 postgraduate candidates; 9 in year two and 6 in year one.

It is hoped that the different emphasis in the specific spheres in pharmaceutical chemistry would give the students the necessary, background and foundation to apply this knowledge in the study of related disciplines such as pharmaceutics, pharmacology, pharmacognosy, biochemistry and clinical pharmacy.

FACULTY MEMBERS AND THEIR STATUS

The Department has a total of seven Senior Members currently at post with two of them on Study Leave. They include:

- Prof. N N-A Okine; - *Associate Professor*
- Prof. R K Adosraku;- *Associate Professor*

- Prof. J S K Ayim - *Associate Professor*
- Prof. J K Kwakye - *Associate Professor*
- Mr. S Asare – Nkansah - *Senior Lecturer*
- Mr S O Bekoe - Lecturer (on Study leave, Sandwich Programme)
- Mr I Ayensu - Lecturer (on Study Leave)
- Dr (Mrs) Abena Karikari - (*Part-time Lecturer*)
- Mr John Adotey - *Assistant Lecturer*
- Mr James Oppong Kyekyeku - *Assistant Lecturer*

Also it must be noted that Mr S. Asare Nkansah has gained admission to read his PhD in Biopharmaceutics and Pharmacokinetics in Muenster University, Germany. The study leave starts in 2012.

MAJOR ACTIVITIES OF THE DEPARTMENT

In connection with the department's collaboration with the ADMER programme, we were invited to a mid-term workshop with the research group at the Elmina Beach resort to deliberate on progress of work of the PhD and MSc candidates. The presentations made at the meeting were very impressive as a result two new candidates including Mr Asare Nkansah Samuel from our department were admitted into the programme.

At the beginning of this academic year, Action Medeor an NGO from Germany contacted us again to help organise another workshop in Ghana for Pharmacy managers in Industry. The department is in the process for the organisation.

In February 2011, Prof. Adosraku R. visited University of Wurzburg in Wurzburg Germany to take part in an international workshop that sought to develop less costly means to analyse counterfeit and substandard drugs in Africa. He gave a presentation on using refurbished hplc equipment in the assay of drugs to save cost.

In June 2011, he represented KNUST on the panel of examiners that examined Akwesi Acheampong in his PhD thesis defence at the Universite de Paris Sud, Paris, France.

Prof. Adosraku again participated in some West African Health Organisation (WAHO) activities over the year. As part of a team of experts drawn from Anglophone, Francophone and Portuguese speaking West Africa, they met in various countries to develop documents to be used in Medicines Regulation in the Ecowas region. We also visited various Ecowas countries to undertake assessment of laboratories involved in drug analysis and testing.

We however wish to place on record that the department has become the centre for research activities for the Science based programmes on campus in that both graduate and undergraduate students from various departments use our spectroscopic & hplc equipments. This has placed a lot of pressure on our facilities.

Our post graduate students (1st and 2nd years) have just undertaken a Fieldtrip to Pharmaceutical companies in Accra and Tema. The Companies visited include Ernest Pharmaceuticals, Danadams, PhytoRiker and Lagrey Pharmaceuticals.

WORKSHOPS ATTENDED BY SENIOR MEMBERS

Mid-term workshop with the research group at the Elmina Beach resort by ADMER programme to deliberate on progress of work of the PhD and MSc candidates

SERVICE TO THE 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 University and national bodies. The department, in collaboration with Food and Drugs Board and Action

SCHOOL OF MEDICAL SCIENCES

INTRODUCTION

The School of Medical Sciences has over the past 37 years trained physicians as its contribution to improving health care delivery in the country. We continue to receive commendation from our major stakeholders in Ghana, the Ministry of Health and the Ghana Health Service. We will continue our path towards achieving academic and professional excellence for the benefit of the populations we serve. 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 MBChB (Bachelor of Medicine, Bachelor of Surgery) degrees respectively. The Heads of Department assist the Dean in the administration and facilitate the academic work of the School.

ENROLLMENT LEVEL

With its vision of improving the number of health manpower in the country, the Executive Council of the university challenged the school to work towards increasing its enrolment numbers. To this end, 250 new students were admitted during the 2011/12 Academic year following on from last year's intake of 227. Our total student population currently stands at 1079. This brings enormous challenges. With the support of the College and the University and also the Ministry of Health and Ghana Health Service we are working towards improving the necessary teaching and learning environment for our students.

HUMAN RESOURCE

The total number of senior members now stands at 115. Wage differentials between Consultants/Specialists of the Ministry of Health/Ghana Health Service and those of the University in favour of the former are stalling full time recruitment of Ministry of Health/Ghana Health Service staff to the University.

SUPPORT FOR SISTER MEDICAL SCHOOLS

The school continues to play its role in supporting the growth of the School of Medical Sciences, UCC and the School of Medicine and Hygiene, UDS. Our Vice-Chancellor has consistently granted permission for our faculty to support teaching and other academic activities in these institutions. We have been delighted that this year UDS graduated its first MBChB

students. We were there to support these examinations and have invited them to observe our final MBChB exams to help improve their systems.

INITIATIVES FOR USE OF GHANA HEALTH SERVICE FACILITIES FOR TEACHING

The School has had successfully dialogued with the Ghana Health Service for the use of some of its facilities for teaching. Starting next academic year, the school will be using all the Kumasi Metropolitan Hospitals as teaching sites. Adjunct faculty are being recruited by the University who together with faculty from the School will be teaching and offering specialist services from these sites. It is hoped these specialist activities on offer at the sites, will lead to a decongestion at the Komfo Anokye Teaching Hospital which has served and will continue serving as our main teaching hospital. We will in future work towards the use of other health facilities in the region and beyond to support student teaching.

CHALLENGES

The School continues to experience challenges in the following areas:

- i. Inadequate academic staff to deal with the large student population.
- ii. Inadequate modern facilities for teaching and laboratory work.
- iii. Inability of the school to admit majority of the qualified applicants who apply to pursue the BSc Human Biology programme annually.

WAY FORWARD

We will continue to pursue our recruitment drive to improve the number of lecturers for teaching. We are looking at various ICT facilities to improve our teaching and learning activities. In the coming year, we will approach corporate Ghana to support participation in medical education, especially supporting students from needy and difficult to reach parts of the country to enroll in our school. We will again knock on the doors of Governments and its partners to support infrastructure requirements in order to support our large student classes.

DEPARTMENT OF MOLECULAR MEDICINE

INTRODUCTION

The Department of Molecular Medicine consists of 8 senior members (1 Associate Professor, 3 Senior Lecturers and 4 Lecturers) and 2 part-time lecturers, 3 Senior/Junior Staff and 1 demonstrator. The Department teaches Medical Students, Allied Health Science Students and Pharmacy Students all in the College of Health Sciences. Besides, the Department offers graduate training and research programmes leading to the award of M.Sc. /M.Phil. /Ph.D. in Chemical Pathology/ Clinical Biochemistry and Clinical Immunology.

The department has research collaboration with KCCR and also the following departments and units: Medicine, Anatomy, Behavioural/Psychiatry Sciences, Obstetrics and Gynaecology, Surgery, Urology, Oncology and Pharmacology.

In the 2011/2012 academic year the number of research students graduating was as follows: M.Sc. – 3, M.Phil. – 6 and Ph.D. - 4

We currently have a total of 45 graduate students with 14 students pursuing programmes leading to the award of Ph.D, 15 M.Phil Chemical Pathology, and 8 M.Phil. Immunology and 8 M.Sc. Chemical Pathology.

MEMBERS OF STAFF

1. Dr. E. F. Laing - Senior Lecturer/Head
2. Prof. (Mrs.) M. T. Frempong - Associate Professor* (On contract)
3. Dr. F. A. Yeboah - Senior Lecturer* (On sabbatical leave)
4. Dr. R. A. Ngala - Senior Lecturer
5. Dr. W.K.B.A. Owiredu - Lecturer
6. Mr. Max Efui Annani-Akollor - Lecturer *(Study Leave)
7. Dr.(Mrs.) Linda Ahenkorah Fondjo - Lecturer
8. Dr. Christian Obirikorang - Lecturer

Part-Time Lecturers

1. Mr. Osei Asibey
2. Mr. Eliezer Togbe

Demonstrators

1. Mr. Derrick Afful

ON-GOING RESEARCH IN THE DEPARTMENT

Members of staff continue to engage in research in their various areas of specialization.

MAJOR SERVICE TO THE COMMUNITY

- A. Members of the Department continue to supervise and validate Clinical Chemistry at the Clinical Biochemistry Department of the Komfo Anokye Teaching Hospital.
- B. In addition members served in various capacities in and outside the University as follows:

Dr. E. F. Laing

- Head, Department of Molecular Medicine, 2010 – date - Member School Board, SMS, KNUST , 2010 – date
- Head, Department of Clinical Biochemistry, Komfo Anokye Teaching Hospital
- Lead Clinician and Member, Management Team of Directorate of Diagnostics, Komfo Anokye Teaching Hospital

Prof. (Mrs.) M. T. Frempong

- Member, Board of Governors of Technology Secondary School, Kumasi, 2002 to date-
- Member, Board of Governors, Jackson's Educational Complex, Kumasi
- Supervisor: Routine diagnostic Investigations at KATH
- Serves as a member of the Committee for Human Research, Publications and Ethics of the school of Medical Sciences/Komfo Anokye Teaching Hospital.
- Member of the School Board, SMS
- Member, SMS Admissions Committee

- External Examiner for a Ph.D. Candidate, Mrs. Judith Koryo Stephens of the School of Public Health, College of Health Sciences, University of Ghana, 24th April, 2012. (Title of Thesis: “Peripheral Plasmodium Falciparum Infection and Antibody Levels among Pregnant Women on Intermittent Preventive Treatment in Ghana: Implications for Malaria and Transfer of Immunity to Babies”)

Dr. F. A. Yeboah

- External Graduate Examiner in Chemical Pathology to the University of Ghana Medical School, Graduate Studies

Dr. R.A. Ngala

- School Examinations officer, S.M.S. – KNUST (October 2011 to date)
- Member of SMS Board

Dr. W.K.B.A. Owiredu

- College of Health Sciences Examinations Officer
- Member, Senior Members Housing Committee
- External Examiner, Department of Medical Laboratory Sciences, School of Medicine and Health Sciences, University for Development Studies, Tamale
- External Examiner, Department of Medical Laboratory, University of Cape Coast
- Chairman, Parent Teacher Association of Saint Monica’s Senior High School, Mampong, Ashanti
- Cognate member, Faculty of Allied Health Sciences Board
- Deacon and Secretary, Calvary Temple Assembly of God Church Board
- Member, School Management Board, Calvary Temple Assembly of God School.
- Hall Fellow, University Hall
- Community based disease screening at Asuofua Asamang, Ashanti Region

Dr. (Mrs.) L. Ahenkorah Fondjo

- Departmental Examination Officer (Dept. of Molecular Medicine, SMS) October 2011 to date
- Secretary - Theresian International- Our Lady of the Holy Rosary Catholic Church, February 2012 – date

Dr. Christian Obirikorang

- Postgraduate Coordinator for the Department of Molecular Medicine

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 210 bed paediatric health facility that provides tertiary care to the Ashanti and Brong Ahafo regions as well as to some communities in the Western region and Northern Ghana. The directorate also

provides primary care to surrounding communities in Kumasi. More than 51,000 out-patients and 10,000 in-patients were attended to in the year 2011.

The clinical directorate comprises three main Units, namely, a Mother-Baby Unit (MBU, which is a 100 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 26 specialists (11 seniors and 15 juniors. Six of the seniors are full time University staff and 2 are Part-Time lecturers), 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 20 Residents are in training to qualify as Junior Specialists in Child Health.

STAFF

The faculty comprises 6 full-time and two part-time lecturers who are all Senior Specialist/Consultant Paediatricians as follows:

Dr Alex Osei-Akoto	Senior Lecturer, Head
Dr E.O.D. Addo-Yobo	Senior Lecturer
Dr Gyikua Plange-Rhule	Senior Lecturer
Dr Sampson Antwi	Senior Lecturer
Dr Daniel Ansong	Senior Lecturer
Dr Joslin Dogbe	Lecturer
Dr Theresa Rettig	Part-time Lecturer
Dr Charles K.A. Poku	Part-time Lecturer

The lecturers are supported by 13 clinical demonstrators who are specialist paediatricians in the directorate, namely: Drs Anthony Enimil, Frank Serebour, Charles Hammond, Vivian Paintsil, Larko Dormeyo Owusu, Serwaa Bonsu Asafo-Agyei, Sandra Kwarteng Owusu, Priscilla Wobil, Nicholas Agyei, Adwoa Pokuah Boakye-Yiadom, Benjamin Acheampong, Naana Wireko Brobby and Animah Attobrah Sarfo. Together, they provide support in clinical tuition and supervision for 122 medical students on the course in Child Health.

The academic faculty is supported by a Secretary/Typist (Ruth Owusu-Ansah) and a Messenger (Paul Oduro).

TEACHING

Students

The class of 2011/2012 academic year is 122; made of 64 males and 58 females. Students are taken through a series of lectures in Child Health and regular bedside teaching in small groups during the training as patients are cared for. Teaching is officially done by the lecturers with support of the demonstrators and informally by residents. Although the primary focus is on general paediatrics students are exposed to sub-specialty paediatrics as they rotate through the 5

main units of the directorate in the areas of neonatology, paediatric nephrology, cardiology, pulmonology, haematology/oncology, neurology and emergencies.

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

The Department of Child Health 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 have jointly organised 3-day conferences yearly for 40-60 paediatric care givers on Paediatric Advanced Life Support (PALS), Neonatal Advanced Life Support (NALS) and topics in child health care of maximum relevance to our sub-region in which faculty members from Utah paired with local faculty members to provide the updates. The conference in 2011 was held for 4 days and there were 90 participants from many regions across Ghana. 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 continued to assist the School of Medicine 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 2011/12 academic year. The Final MBChB Part 1 Examination in Child Health was conducted in March 2012.

Visitors

A team of paediatricians, nurse educators and social workers from The Children's Hospital of Philadelphia and University of Pennsylvania in USA in partnership with the Haemophilia Society of Ghana visited the department with the objective of helping to establish collaboration in Haemophilia work.

A visiting lecturer, Prof Tom Metcalf from Utah visited the department for one week and gave lectures to our students and residents.

Elective students

The Department continues to be popular among European and American medical students for electives. A total of 32 elective students visited the Department within the academic year from

UK, Germany, Belgium, Holland, Czech Republic, Slovenia, Ukraine, Switzerland, Spain, Poland and United States of America.

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 Suntreso Hospitals to support services offered at KATH. Paediatricians from our department provide support to these facilities with the hope that they would eventually become autonomous in neonatal care. Thirty-five nurses and Medical Assistants were trained in neonatal care in 2011.

Collaboration with Ghana Health Service and other Agencies:

The Department continues to collaborate with the Ghana Health Service on emerging concerns of child health care and service delivery in Ghana. Members of our 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. Being 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.

Facilities at the Komfo Anokye Teaching Hospital continue to be used regularly for training of health staff on Breast Feeding and Lactation Management and Neonatal care. The department trained 91 nurses and midwives from the three northern regions on neonatal care during the year for the Christian Health Association of Ghana (CHAG). The Department participated 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. Faculty members have actively participated in the activities of the Paediatric Society of Ghana and the executive positions have been held by faculty members for the years 2010-2012.

Research

Research continues to be a major activity in the Department. The following research activities were and are still in progress in the Department - 2011/12.

- 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)
- Berekuma Collaborative Community Development Programme (KATH-Univ of Utah-Atwima Nwabigya District Assembly) (Community Support)

- Efficacy and Safety of Rectal Artesunate Study–Randomized control study (WHO/TDR)
- Comparative, Open Label, Dose and Regimen Optimization Follow-up Study of Intravenous and Intramuscular Artesunate in African Children with Severe Malaria (SMAC-Artesunate Follow-up Study).
- Ocular changes in patients with cerebral malaria
- Prevalence Studies on childhood Epilepsy
- Outcomes in newborns delivered by vacuum extraction -(OBGy & DCH collaboration)
- Response to ARV in HIV infected children

Challenges

The student-lecturer ratio is still a challenge and there is also the challenge of limited space at KATH both for patient care and for coping with teaching large numbers of medical students. The department has been involved in the planning of establishing 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 ANAESTHESIOLOGY AND INTENSIVE CARE

INTRODUCTION

The department of Anaesthesiology 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 basics of anaesthesia, intensive care and acute and chronic pain management. The training include practical training in the anaesthesia clinic, the theatres, post anaesthetic care units (PACU) and intensive care units.
- b. Postgraduate training of surgeons and obstetricians/gynaecologist in the basics of anaesthesia, intensive care and pain management.
- c. Postgraduate 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.

STAFFING

1. Dr. Gabriel Boakye - Snr. Lecturer/Head
2. Dr. Nacauley Andah - Lecturer
3. Dr. Akwasi Antwi-Kusi - Lecturer
4. Dr. William Addison - Lecturer
5. Dr. Sanjeev Singh - Technical Instructor

MINISTRY OF HEALTH STAFF

The work in the department is assisted by the underlisted staff who are active members of the Department and help in the teaching of medical students.

1. Dr. Jacob Siaw-Fofie
2. Dr. Wilfred Sam-Awortwi
3. Dr. Odame Mensah
4. Dr. Irina Kumah-Ametepey
5. Dr. Emmanuel Bamfo
6. Dr. Akosua Hemeng
7. Dr. Ebenezer Darkwa
8. Dr. Fosuaa Gyapong
9. Dr. Nana Addo Boateng
10. Dr.(Mrs.) Dufie Apeadu

ACTIVITIES

1. A team from Boston, USA joined the department to provide anaesthesia and intensive care services for open heart surgeries.
2. The department collaborates with the University of Ulm, Germany to train postgraduate doctors and do joint research.
3. There is an affiliation with the University of Utah's Department of Anaesthesiology. Prof. Jeff Peters with four assistant professors visited twice last year, spent two weeks during each visit working and teaching in the theatres and ICU. Donation of medical equipment and items worth about \$50,000.00 was made.
4. In collaboration with the International Association for the study of Pain (IASP) and the University of Utah, USA an international conference on "Update of Pain Management" was organized in Kumasi on 30th March, 2011. The Dean of the S.M.S. gave a speech and remarked about the need to improve the training of medical students in pain management.
5. IASP made a donation of books and materials on pain management to the department.
6. In collaboration with the University of Utah's Department of Anaesthesiology and the Ministry of Health, a conference on Update of "Modern Trends In Anaesthesia" was organized by the department for anaesthesiologist and physician assistants (anaesthesia) from the whole country from 31st March – 1st April 2011.
7. One respiratory therapist Ms. Kallie Sukulich from University of Utah worked in our ICU for 9 months teaching staff and students on modern trends in respiratory therapy.
8. The department train nurse anaesthetist for the Ministry of Health. Last year 50 nurse anaesthetists passed out. Plans are far advanced to start a BSc. (Anaesthesia) degree programme at the university next academic year.

9. Anaesthesia interest group has been formed by medical students in the SMS. The group presently has 25 members. The aim of the group is to stimulate and expand the interest of medical students in the practice of anaesthesiology as a specialty after completion of their medical education. The mentors of the group are all lecturers in the Department Of Anaesthesiology KNUST and two anaesthesiologists from the University of Utah. Last year four members of the group had opportunity to do elective training in anesthesiology at the Universities of Ulm and Rottenburg in Germany. Two other members of the group did their elective training in anaesthesiology at the University of Utah, USA.

RESEARCH

1. Anaesthesia Teaching in Ghana, a ten year experience (published)
2. Percutaneous dilative tracheostomy performed by anaesthesiologist in the ICU (ongoing)
3. Orally formulated IV Ketamine for premedication in children at Komfo Anokye Teaching Hospital - Ongoing
4. Epidural Analgesia in Labour: Ghanaian obstetrician attitude and knowledge. (ongoing)
5. The incidence of Post discharge Nausea and vomiting among day case surgical patients at Komfo Anokye Teaching Hospital.(ongoing)
6. Anaesthesia and post-operative agitation. (ongoing)

POSTGRADUATE TRAINING

The department obtained accreditation by the Ghana College of Physician and Surgeons for the training of doctors in anaesthesia up to specialist level (membership)

A team from the West African College of Surgeons is due to inspect the department in May this year for full accreditation.

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.

ACHIEVEMENTS

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

DEPARTMENT OF CLINICAL MICROBIOLOGY

INTRODUCTION

The Department of Clinical Microbiology has staff strength of 8 full-time Senior Members, 2 part-time academic staff, and 2 Technical staff, supported by a secretariat manned by an Administrative Assistant. Two national service personnel support practical lessons and assist in seminars and other 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, and the students of Nursing, Medical Laboratory Technology, and Sonography of the Faculty of Allied Health Sciences.

The focus of undergraduate medical and dental students' teaching is the control- knowledge and skills - of infectious diseases, where micro-organisms and their disease/infection causing mechanisms are introduced. The methods are generally, health education, immunization, disinfection and sterilization, and antimicrobial treatment; prevention and control are emphasized, especially those with epidemic potential in Ghana and the sub-region.

Infection control in the health facilities and host response to infections are also addressed. Medical Laboratory Technology students are tutored mainly in the diagnosis, collection and identification of microbial pathogens from various clinical specimens. Much emphasis is placed on laboratory management and practical bench work microbiology.

Students of Nursing and Sonography undertake basic clinical microbiology with emphasis on nursing patients with infections and infection control procedures in clinical settings.

TEACHING ACTIVITIES

The breakdown of, the undergraduate student population for the Department for 2010/1011 are; 200 Medical students, 20 Dental students, 135 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, 15 MPhil students, and 10 MSc students enrolled.

The Department completed the furnishing of its Virology and Molecular Biology laboratory with funding from a TALIFF grant last year, and has begun undertaking studies for the students there. This is greatly enhancing teaching and research activities.

COLLABORATION WITH MINISTRY OF HEALTH

Apartment from teaching, research and mentoring in the University, the Senior Clinical Staff also serve as Specialist Clinical Microbiologists/Senior Technical Staff at the Microbiology Department of Komfo Anokye Teaching Hospital, Kumasi.

Again, at the hospital, postgraduate clinical teaching for residents preparing for membership/fellowship of the Ghana College of Physicians and Surgeons and the West Africa Postgraduate Medical College forms part of our responsibilities.

Many senior members are Expert Committee members of various disciplines of the Ministry, acting as resource persons in seminars/workshops and consultants on projects and policy formulation.

ON-GOING PROJECTS

- Antimicrobial resistance in Enterobacteria.
- Effects of climate change on infections and infestations.
- Studies on bacterial meningitis in adults and children in Ashanti
- Antibiotic resistance in Staphylococci.
- Studies on improving detection rate of tuberculosis infections
- Studies on opportunistic infections on HIV/AIDS.
- Studies on mosquito ecology and malaria transmission dynamics and control
- Studies on drug treatment adjunct to surgery in filariasis complications.
- Studies on rotavirus diarrhoea in children in Ashanti.
- Efficacy of herbal extracts as antimicrobials
- Syphilis in Ghana

RESEARCH COLLABORATION

Our Research collaborators include the following:

- KCCR, KNUST/ BernardtNocht Institute for Tropical Medicine, Hamburg
- Noguchi Institute of Medical Research, Legon
- Navrongo Health Research Institute, Navrongo
- London School of Hygiene and Tropical Medicine, London
- University of Liverpool Medical School, Liverpool
- The Abdul Salam International centre for Theoretical Physics, Italy
- University of Ghana Medical School, Accra

DEPARTMENT OF SURGERY

INTRODUCTION:

The Department of Surgery, School of Medical Sciences, is 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.

STAFF

1. F.A. Abantanga- Associate Professor.
2. Peter Donkor - Surgeon, Professor.
3. Pius Agbenorku- Senior Lecturer.
4. M. Ohene-Yeboah- Senior Lecturer.
5. K.E.K. Aboah- (Head, Urology Unit) Lecturer.
6. R.E. Quansah- (Orthopaedic Surgery Unit) Senior Lecturer.
7. E.P. Amaning- (Head, General Surgery Unit) Senior Lecturer.
8. E. Adu- Lecturer
9. Dr. F.S.K. Aitpillah - Lecturer.
10. Dr. A. Gyedu- Lecturer
11. Dr. J. Akpaloo - Lecturer
12. Dr. J. Yorke- Lecturer
13. Dr. P. Konadu - Lecturer
14. Dr. C. K. Gyasi-Sarpong - Lecturer
15. Charles Mock - Traumatologist, visiting Professor
16. Dr. med. Richter-Turtur - Visiting Professor.
17. A.M. Morris- Visiting Professor.
18. Dr. med. Kurt Lennert - Visiting Professor.
19. Martin Webster- Visiting Professor.

MINISTRY OF HEALTH STAFF:

The under-listed surgeons who are in the employ of the Ministry of Health are also active members of the department and partake in clinical teaching of students.

1. Dr. E.K. Addipa, Komfo Anokye Teaching Hospital, General Surgeon
2. Dr. R.K.A. Vowotor, Komfo Anokye Teaching Hospital, Neurosurgeon
3. Dr. B. Owusu, Komfo Anokye Teaching Hospital, Neurosurgeon

4. Dr. J.K. Oppong, Komfo Anokye Teaching Hospital, General Surgeon
5. Dr. R. Kumah-Ametepey, Komfo Anokye Teaching Hospital, Trauma/Orthopaedic Surgeon
6. Dr. D. Awariya, Komfo Anokye Teaching Hospital, Trauma/Orthopaedic Surgeon

SUPPORTING STAFF:

1. Mrs. Rose Barimah - Administrative Assistant, KNUST
2. Mr. Adofo Koranteng –Principal Research Assistant, KNUST
3. Mr. Ernest OwusuQuainoo - Messenger - Ministry of Health, K.A.T.H.
4. Miss AfuaGyaamahOteng - Library Assistant - Ministry of Health, K.A.T.H.

ACTIVITIES:

Specialists in the Department:

1. Organized basic surgical skills courses for district and mission hospitals and residents of Komfo Anokye Teaching Hospital every year.
2. Treated children with cleft deformities together with a team of surgeons from Children's Surgery International.
3. Performed reconstructive surgeries in genito-urinary system with surgeons from International Volunteers in Urology.
4. Organized a workshop in 2010 on wound management.
5. 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 postgraduate teaching has been intensified with the introduction of new concepts. All lecturers now use PowerPoint presentations. Handouts are made available to students.

The large increase in student numbers has necessitated a reorganization of our teaching programme. The quality of teaching, however, remains high. Our undergraduates performed well in the final examinations last year, ending up with about 42 credits. The problem of two classes being combined together for teaching needs to be looked into seriously. This is of great disadvantage to the students.

Two of our residents: Dr. O. Owusu Danso and Dr. A. Lamina are pursuing various postgraduate courses abroad and 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:

1. Breast cancer (ongoing).
2. Aetiology of gastric outlet obstruction (ongoing).
3. Gastric malignancies (ongoing).
4. Prospective study in typhoid perforations (ongoing).
5. Buruli Ulcer (ongoing).
6. Epidemiology of trauma and violence in Ghana (ongoing).
7. Colonic cancers (ongoing).
8. Sigmoid volvulus (ongoing).
9. Prospective study into the causes of acute abdomen in sub-Saharan Africa Hospital (ongoing).
10. Neonatal malformations (ongoing).
11. Malformations in children (ongoing).
12. Hirschsprung's disease management (ongoing).
13. Prostate cancer (ongoing).
14. Male Infertility (ongoing).
15. Priapism (ongoing).
16. Cleft lip and palate deformity (ongoing).
17. Oral squamous cell carcinoma (ongoing)
18. Autogenous tissue for reconstruction in the maxillofacial region (ongoing)
19. CNS abnormalities (ongoing)
20. Aetiology of road traffic accidents at Komfo Anokye Teaching Hospital (ongoing)
21. Management of complicated leg injuries at Komfo Anokye Teaching Hospital (ongoing)
22. Buccal mucosa use in urethroplasty
23. The incidence of chest injuries in the ICU from 2003 in Komfo Anokye Teaching Hospital (ongoing)
24. Pneumatic reduction of intussusceptions at Komfo Anokye Teaching Hospital (ongoing)
25. Use of CT scan to diagnose unconfirmed cases of typhoid perforation
26. Parapneumonic effusions and empyomas in children.

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.

SURGERY STAFF:

1. Prof F.A. Abantanga
2. Prof. Peter Donkor
3. Dr. Pius Agbenorku
4. Dr. M. Ohene-Yeboah
5. Dr. K.E.K. Aboah
6. Dr. R.E. Quansah
7. Dr. E.P. Amaning
8. Dr. E. Adu
9. Dr. F.S.K. Aitpillah
10. Dr. Gyasi-Sarpong
11. Dr. J. Akpaloo
12. Dr. J. Yorke
13. Dr. P. Konadu
14. Mr. Adofo Koranteng
15. Mrs. Rose Barima

DEPARTMENT OF RADIOLOGY

INTRODUCTION

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

- 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 recognized as a premier centre of excellence in teaching, research, professional and academic training in Radiology and Radiography in Africa, producing high caliber radiologists, radiographers and other scientists to support the health sector in Ghana and the rest of Africa.

STAFF

1. Dr. Pius Agbenorku- Senior Lecturer, *Head of Department*
2. Dr. G. A. Frimpong Asafu Adjaye- Lecturer
3. Dr. Augustina Badu-Peprah - Part-time Lecturer
4. Dr. Kwame Adu Tutu Amankwa- Part-time Lecturer
5. Dr. Victor D.Y. Dedjoe - Radiologist; Pending appointment for Lectureship

MINISTRY OF HEALTH STAFF

1. Dr. Augustina Badu-Peprah, Head of KATH Radiology
2. Dr. Kwame Adu Tutu Amankwa
3. Dr. Victor D.Y. Dedjoe
4. Dr. Kwasi Ankomah, Resident
5. Dr. Ato Quansah, Resident
6. Dr. Mohammed Owusu Ansah, Resident
7. Dr. Ijeoma Osondu, Resident
8. Dr. Allswell Akon, Medical Officer
9. Dr. Obed Kojo Otoo, Medical Officer
10. Nana Abrah Akwasi Sarfo, Chief Radiographer
11. Mr. Augustine Baah, Assistant Chief Technical Officer
12. Mr. Mohammed Awal, Deputy Chief Radiographer
13. Mr. Kofi Adunkwaa Antwi, Senior Radiographer
14. Mr. Daniel Olai Mensah, Senior Radiographer
15. Mr. Felix Antwi-Boasiako, Senior Radiographer
16. Mr. Samuel Oduro Baah, Senior Radiographer
17. Mr. Godson Adiyia Kyei, Radiographer
18. Mr. Mark Quarcoo, Senior Radiographer
19. Mr. Samuel Kwadwo Kumah, Radiographer
20. Mr. Solomon Mawuli Adjakloe, Radiographer
21. Mr. Mawusi Dei Tutu, Radiographer
22. Mr. Patrick Addae, Radiographer

ACTIVITIES

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.

Teaching

As at 2011, 3 Specialist Radiologists applied for full time lectureship of which only one of them in the person of Dr G. A. Frimpong Asafu Adjaye, was called for interview at the Central University Administration for interview and received appointment letter. The other 2, one already a part-time lecturer and the other who is applying directly for full-time lectureship have successfully gone through the Departmental, School and College levels for interviews and are still waiting to be invited for interview at the Central University Administration for their last interviews and appointments.

Also as at 2011, 10 Radiographers were 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 then 3 part-time lecturers, but as at now no vital information has been received.

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 culminating marks for 30% of their overall assessment in the final MB ChB exams; this should be incorporated into final assessments of the students in final examination in Surgery. As it is now because there are no active ways of checking students work in Radiology most of them exhibit some lukewarm attitude towards the subject.

Research

The one full-time lecturer with the other two 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.

Publications

Relevant publications will follow as a result of the successful research as stated in *Section 2.3*

Community service/Contribution to society

A female member of the part-time staff, Dr. (Mrs.) Augustina Badu Peparah, 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 full-time and part-time lecturers do regularly participate in seminars on MRI at the Korle-Bu Teaching Hospital.

CONCLUSION

It is gratifying that after several years of waiting the department now has a Consultant Radiologist as a lecturer in the university. It is suggested that, the other two Radiologists

applying for lectureship be considered as soon as practicable to boost the number of Consultant Radiologists in the department. It is also 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 PHYSIOLOGY

Names of Staff	Status
1. Prof. Tsiri Agbenyega	Professor
2. Prof. J. Plange-Rhule	Associate Professor/Head
3. Dr. K. Bedu-Addo	Senior Lecturer
4. Mrs. Lorraine Sallah	Lecturer
5. Ms. Rhoda Dufie Dwobeng	Administrative Assistant
6. Mr. Emmanuel Amankwah Ntim	Senior Research Assistant

Demonstrators in the Department

1. Mr. Christian Duamor
2. Mr. David Baidoe-Ansah

The Department teaches the Physiology component of the Human Biology Programme to Human Biology I and Human Biology II students. It also teaches the Physiology Component of the Allied Health Sciences which comprises Nursing, Herbal Medicine, Medical Laboratory Technology and Sports & Exercise Sciences Programmes. In addition, the Department teaches the Physiology Course for the Sonography and Veterinary Medicine Programmes.

There are seven (5) Postgraduate (MPhil) students in the Department. They are in their third year, having been granted extension by the School of Graduate Studies to enable them complete their programmes 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), randomized, controlled multi-center study to evaluate, in infants and children, the efficacy of the RTS,S/AS01E candidate vaccine against malaria disease caused by *P. falciparum* infection, across diverse malaria transmission settings in Africa.

Re-defining Cerebral Malaria. The Severe Malaria in African Children (SMAC) network Study.

Efficacy and safety of rectal artesunate in paediatric patients a randomised-controlled study.

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

Determinants and Consequences of Low Vitamin D in Populations of African Descent: Vitamin D, weight change and blood pressure.

Task shifting and hypertension control in Ghana: a cluster randomised trial

DEPARTMENT OF EYE, EAR, NOSE AND THROAT

INTRODUCTION

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 master the care of patients with a tracheostomy; identify signs of danger and act to correct these.

- a. Describe which patients need specialist care, refer them to a special unit and describe in detail the clinical features and any treatment given.
- b. Practice the following skills
 - (i) Use head mirror to examine the upper respiratory tract and ear
 - (ii) Tuning fork testing-schwabaach, Rhine, Weber Otoscopy
 - (iii) Learn the technique and identify the application direct and indirect laryngoscopy, anterior and posterior rhinoscopy
 - a. Treat common Ear, Nose and Throat disorders
 - b. Identify basic equipment used in hearing evaluation and different types of hearing aids.
 - c. Identify hearing-impaired children and to instruct their parents.

POST-GRADUATE TRAINING

A post-graduate Course – DLO (Diploma in Otolaryngology) was started for the whole of the West African sub-region in 1997. Kumasi and Ibadan are the only two centres of excellence accredited by the West African Post-graduate Medical College for the Course. Since then, several students from Ghana and Nigeria graduated from the department and holding key positions in various hospitals in Ghana and Nigeria.

Additionally, the department was accredited by the West African College of Surgeons to train Consultants for West Africa. At the moment, there are 9 residents at various levels of training in the department. These include 5 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 POSTGRADUATE TRAINING

The department is currently preparing proposals to be sent to Academic Board for the commencement of training in Masters programme/Post-graduate Diploma in Audiology and Speech and Language Therapy.

Again, the Eye Unit takes part in the teaching of clinical Ophthalmology course to the Postgraduate Students of Optometry. The ENT Unit has also got a five-year accreditation from the Ghana Post-graduate College of Physicians and Surgeons to train ENT Specialists.

In addition to the above, the members of staff are also actively involved in teaching the Post Basic Diploma Course for Nurses at the Komfo Anokye Teaching Hospital. This is a national programme and Kumasi is the only centre of excellence accredited by the Ghana Health Service and the Nurses and Midwives Council for Ghana.

ACADEMIC STAFF MEMBERS

- i. Prof Dr Dr Sir George Wireko Brobby
- ii. Prof Geoffrey Kwabla Amedofu
- iii. Dr Joseph Opoku-Buabeng- Senior Lecturer,
- iv. Rev. Dr Peter Awuah- Senior Lecturer – Head of Dept. EENT
- v. Dr Seth Lartey - Lecturer

- vi. Dr. Cornelius P. Armah - Lecturer
- vii. Dr. Duah I. Mohammed- Lecturer
- viii. Barbara Antwi Birago- Principal Research Assistant

ADMINISTRATIVE STAFF MEMBERS

- Mr. Anthony Atta-Effa - Senior Clerk
- Mr. James Yaw Addo - Messenger
- Mr. James Oppong - Driver Gd.I

COLLABORATIVE LINKS WITH OTHER INSTITUTIONS OF HIGHER LEARNING/ORGANISATIONS

Research link with the University of Sheffield, UK since 1992 on Bacteriology of Otitis Media.

Research link with WHO as a collaborative centre for Hearing Assessment.

Research link with Benhard Notch Institute Hamburg, Germany. (Prof Horstmann C.) Culminating in the establishment of Kumasi centre for collaborative Research into Tropical Medicine (KCCR), Kumasi.

University of Utah John Moran Eye Hospital, Salt Lake City Utah, USA.

University of Abidjan, ENT Department (in process) Cote D'Ivoire.

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 trabecanlectomy in Congenital Glaucoma.

ENT

- Bacteriology in Otitis Media
- Patterns of hearing loss in Diabetic patients
- Hearing Sensitivity and related Acoustic Impedance Findings
- Characteristics of hearing loss among patients at Komfo Anokye Teaching Hospital, Kumasi
- Ear, Nose and Throat manifestations in HIV/AIDS patients
- Assessment and therapy to Articulation and Phonological Disordered in Ghana
- Articulation Test for the Twi language in Ghana

THE DEPARTMENT OF MEDICINE

INTRODUCTION

The Department of Medicine is manned by eight full-time academic staff, one part-time lecturer, a clerk II secretary and a messenger.

The academic staff is supported by five Resident Medical trainees at the level of Specialist Physicians. They 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.

STAFF STRENGTH (Academic)

Prof George Bedu-Addo	Associate Professor
Prof. Sir J. W. Acheampong	Full Professor
Prof T.C Ankrah	Associate Professor (Part-time)
Prof. Ohene Opare-Sem	Associate Professor
Dr. Bernard Nkum	Senior Lecturer
Dr R. Odame Phillips	Research Fellow
Dr. Ben Eghan	Senior Research Fellow
Dr Isaac Owusu	Lecturer
Dr Mary Yeboah Afihene (Mrs)	Lecturer
Dr Betty Norman	Lecturer

Dr Betty Norman has been granted one year medical leave

ACTIVITIES

The Department of Medicine curriculum for first and third year clinical students is aimed at producing a doctor who is capable of developing along a variety of medical career options with further postgraduate training. The emphasis of teaching is the acquisition of technical skills as the basis of solving medical problems, and the ability to interpret data from a variety of modern investigative techniques.

The 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 2011, one hundred and twenty two students took the final examinations. Ninety four (94) students passed out as medical doctors.

Postgraduate training is a student-centred approach which encourages active learning through guided self-study. The postgraduate and undergraduate programmes are supported by academics from US, UK and the EU.

The Department of has Medicine trained two (2) Physicians and two (2) Senior Specialists.

External consultants who taught on the postgraduate and undergraduate programmes include:
Dr Mark Denyer (Consultant gastroenterologist)

Dr David Chadwick (Consultant in infectious diseases)
Dr Seena Shrivastva (Consultant nephrologist)
Prof Anna Maria Geretti (Consultant in infectious diseases)
Dr Mark Wansbrough-Jones (Consultant in infectious diseases)
Dr Christopher Derry (Consultant neurologist)

RESEARCH

Research carried out in the Department covered infectious disease, cardiovascular and gastrointestinal disease. Research activities in the department included

- Endoscopic findings in patients with acute upper gastrointestinal bleeding at KATH
- Prevalence of cardiac arrhythmias in patients attending cardiac clinic at KA TH Kumasi (on-going)
- Cerebrovascular accident and metabolic study a pilot study of rapid, point-of-care HIV testing in the VCT and TB clinics at KATH.
- Viral load testing and resistance patterns in HIV (on-going)
- A study of the response of pre-ulcerative and early ulcerative lesions caused by *Mulcerans* 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 (on-going)
- Association between serum uric acid levels and outcomes types and risk factors of stroke at KA TH
- Prevalence of diabetic nephropathy in patients attending the diabetic clinic at Komfo Anokye Teaching hospital, Kumasi, Ghana (on-going)

COMMUNITY SERVICE TO SOCIETY

The department is involved in running community clinics for management of Buruli ulcer at the Tepa Government Hospital, Agogo Government Hospital and Nkawie Government Hospital in the Ashanti region.

The academic staff is responsible for specialist clinics in the Directorate of Medicine KATH.

The clinics include:

Oncology
Haematology
Renal Hypertension
Asthma
Cardiology
HIV/AIDS
Diabetes

CONFERENCES/SEMINARS/HONORS

Diabetes workshops organised for nurses and doctors in the Northern part of the country
Annual MAYO/KATH CME conference on Gastroenterology

INTERNATIONAL AFFILIATIONS

The Department of Medicine has links University of Utah, School of Tropical Medicine, Liverpool, St Georges Hospital, London, James Cook University Hospital, Middlesbrough, and Tropical Health and Education Trust, UK.

CONCLUSION

Our aim is to provide commitment to quality medical training to assure the availability of proficient health care interventions including research to the benefit of the future and larger society in a world with rapid technological advancement.

DEPARTMENT OF PHYSIOLOGY

Names of Staff

Status

Prof. Tsiri Agbenyega	Professor
Prof. J. Plange-Rhule	Associate Professor/Head
Dr. K. Bedu-Addo	Senior Lecturer
Mrs. Lorraine Sallah	Lecturer
Ms. Rhoda Dufie Dwobeng	Administrative Assistant
Mr. Emmanuel Amankwah Ntim	Senior Research Assistant

Demonstrators in the Department

Mr. Christian Duamor
Mr. David Baidoe-Ansah

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), randomized, controlled multi-center study to evaluate, in infants and children, the efficacy of the RTS,S/AS01E candidate vaccine against malaria disease caused by *P. falciparum* infection, across diverse malaria transmission settings in Africa.
- Re-defining Cerebral Malaria. The Severe Malaria in African Children (SMAC) network Study.
- Efficacy and safety of rectal artesunate in paediatric patients a randomised-controlled study.
- 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
- Determinants and Consequences of Low Vitamin D in Populations of African Descent: Vitamin D, weight change and blood pressure.
- Task shifting and hypertension control in Ghana: a cluster randomised trial

DEPARTMENT OF PATHOLOGY

INTRODUCTION

The Department of Pathology was the first to be established in the School as the founding Dean, Late Prof. W.N. Laing was a pathologist. The department is a composite discipline comprising:

1. The Department of Histopathology and Molecular Pathology
2. The Department of Morbid Anatomy & Forensic Medicine
3. The Department of Haematopathology

STAFFING

Dr. N.A. Titiloye, Lecturer and Head
 Dr. S.E. Quayson, Lecturer
 Dr. OsseiSampane, Lecturer
 Dr. Ernest Adjei, Part-time Lecturer
 Prof. K.A. Adelusola, Visting Professor

Technical Staff/Demonstrators

Mr. Samuel Kachungu	-	Principal Biomedical Scientist (Demonstrator)
Mr. Justice Mpesum	-	Senior Biomedical Scientist (Demonstrator)
Miss AdwoaKonaduAbabio	-	Senior Biologist (Demonstrator)
Mr. Clement Atobiga	-	Biomedical Scientist (Demonstrator)
Mr. Seth NtiamoahOppong	-	Biomedical Scientist (Demonstrator)

Administrative Staff

Mrs. Ernestina Quarshie	-	Senior Administrative Assistant
Miss Georgina Asenso	-	Administrative Assistant

TEACHING

Human Biology (SMS) General and Systemic Pathology

The Department offer courses in General Pathology to undergraduate students pursuing the 3-year BSc. Human Biology programme as a component of MBCh.B degree award. This year, the department consolidated on its reviewed course structure which enables human biology students (HB III) to take a one year pathology course which includes general pathology and systemic pathology. The reviewed course structures were supported by practical sessions and tutorials. This is a departure from the previous arrangement where General Pathology was taught as a component of BSc. Human Biology in year III and Systemic Pathology as a component of MBChB degree in MBCh.B 1A.

The department offers Forensic pathology course which is a 2 weeks exposure to autopsy and autopsy techniques to final year MBChB students. This will be taught as a component of Internal Medicine. This will take effect from 2013/2014 Academic Session since the first set of students in the reviewed course structure will then be in MBChB II class.

Service courses to Allied Health Sciences in Histopathology

The Department also taught general pathology in the following classes

1. BSc. Nursing Year II
2. BSc. Optometry Year II
3. MB. Herbal Medicine Year II
4. BSc. Sonography Year II
5. Medlab II

Service Courses to the Department of Medical Laboratory Technology in Histopathology Technique.

The department also assisted the department of Medical Laboratory Technology in teaching the following classes.

1. Medical Laboratory Technology II - Histopathology Technique II
2. Medical Laboratory Technology III - Histopathology Technique III
3. Medical Laboratory Technology IV - Histopathology Technique IV

All the teachings in the medical laboratory technology unit were supported by laboratory sessions.

CONFERENCE ATTENDANCE/SHORT COURSES AND PAPER PRESENTATION

1. Dr. Nicholas Akinwale Titiloye

British Division of International Academy of Pathology conference: Infectious diseases. Royal college of Physicians London; 25-26th November 2011.

2. Dr. Nicholas Akinwale Titiloye

British Division of International Academy of Pathology Bursary award. Molecular Pathology (FISH & CISH methods in Her-2/neu Breast Cancer Diagnosis), St James University Hospital Leeds. November 16th-30th 2011.

3. Dr. Solomon Edward Quayson

Geraldine C. Zeiler Fellowship Clinical attachment, Cytopathology. Mayo Clinic, Arizona. USA. March 1-30th 2012.

4. Dr. Ernest Adjei

Uro pathology study day. London. September 2011

5. Dr. Solomon Quayson/Dr. Ernest Adjei

The 35th AGSM of the West African College of Physicians (WACP) in Gambia. Nov. 6-Nov. 11, 2011. Dr. Ernest Adjei was a representative of Royal College of Pathologists.

6. Dr. Ernest Adjei

The challenges of Laboratory Medicine in Ghana and the way forward. 35th Annual AGSM of WACP in Gambia Nov 6-Nov 11, 2011.

ONGOING RESEARCH

1. Research on occurrences of benign breast diseases/changes in Ghanaian and Norwegian women. A comparative autopsy study.
2. Molecular characterization of breast cancer in Kumasi.

ON-COMING INTERNATIONAL CONFERENCE

Kumasi August 13-17, 2012. Gastrointestinal Pathology, Immunohistochemistry and Cytology Conference jointly sponsored by UICC (Geneva), KNUST and KATH Department of Pathology. Visiting Faculty: Department of Histopathology & Molecular Pathology, Leeds Teaching Hospital, Leeds. UK.

MEMORANDUM OF UNDERSTANDING WITH UNIVERSITY OF ILLINOIS, CHICAGO.

A memorandum of understanding between the Pathology Department, University of Illinois Chicago and the Pathology Department, KNUST has been agreed on and signed by the Vice-Chancellor, KNUST awaiting the final signature of the Authority of University of Illinois.

The memorandum will permit

1. Exchange of research materials and joint research activities between the two Universities
2. Exchange of faculty members between the two Universities
3. Enhance training of undergraduate medical students in Pathology
4. Training of graduate students in Histopathology (Masters/PhD)
5. Training of Resident Doctors in Pathology
6. Assistance in Pathology laboratory infrastructural development.

SMS TISSUE PROCESSING LABORATORY

The department has almost completed the establishment of SMS tissue processing laboratory. The tissue processing laboratory when completed will provide avenue for students practicals in histopathology, enable research in the area of pathology and serve as internally generated revenue source by rendering histopathology services to KNUST Hospital and other District Hospitals in Ghana.

SERVICE TO THE COMMUNITY

The Department provides Diagnostic Histopathology, Cytology and autopsy services at Komfo Anokye Teaching Hospital. It also offers forensic services to the State.

CONCLUSION

The Department of Pathology continues to work in line with its own objectives which are also in line with those of the School of Medical Sciences and the Kwame Nkrumah University of

Science and Technology which could be summarized as follows: To advance knowledge in Science and Technology for sustainable development in Africa.

DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY

ACADEMIC STAFF

A.T. Odoi	Head of Department
K.A. Danso	Professor:
H.S. Opare-Addo	Associate Professor
B.K. Opoku	Senior Lecturer
V.N. Addo	Senior Lecturer
C.A. Turpin	Senior Lecturer
G. Owusu-Asubonteng	Lecturer
F. Ankobe-Kokroe	Lecturer

TEACHING AND EXAMINATIONS

All the lecturers are very committed to teaching and forming the undergraduate medical students. One hundred and forty-six (146) students were taught in the period under review. All examinations were well-conducted. The result of final examination showed fifty-four (54) students obtained credits, the best performance since the inception of the school. Postgraduate teaching also produced the best candidate in obstetrics and gynaecology in West Africa.

RESEARCH ACTIVITIES BY MEMBERS OF STAFF:

These were in the following areas:

1. Maternal mortality
2. Cervical cancer screening
3. Contraception
4. Vulvar lipoma
5. Effects of congenital genital tract malformation
6. Sexual and reproductive health
7. Vaginal microbicide
8. Sexually transmitted infections
9. Unsafe abortion
10. Caesarean section
11. Postpartum haemorrhage
12. Vasectomy in Ghana

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

Dean of the Faculty -Rev. Fr. Prof. Appiah-Poku.

Low staffing situation still remains a big challenge.

FACULTY BUILDINGS AND OFFICES

The Faculty is accommodated in her new faculty offices building. However, the Faculty continues to share lecture rooms and laboratory and internet resources with the School of Medical Sciences which has been very supportive. We are grateful.

We have been faced with a new challenge of finding office accommodation for our new lecturers. We also have need for laboratory space as well as demonstration rooms for our Midwifery programme. We are in discussion with the College to find solution to our emerging challenges and we are grateful to the authorities for always giving us a hearing.

DEPARTMENT OF MEDICAL LABORATORY TECHNOLOGY

INTRODUCTION

The Department of Medical Laboratory Technology is one of the four Departments of the Faculty of Allied Health Sciences. The Department is the oldest established Department under the Faculty. The Department runs the B.Sc. Medical Laboratory Technology programme, started some 12 years ago, and produces professional Biomedical Science graduates, through regular lectures, an extensive bench based laboratory training, tutorials and seminars.

Eight 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. The Department under 2008/2009 Academic Year reviewed its Curriculum to meet the changing demand of the world market of Biomedical Science.

The Department has developed Human Capacity Development collaboration with the Westminster University where Westminster University is training a number of lecturers to beef up the staff situation in our distressed units such as Hematology, Histopathology, etc. Delegation from Westminster also visited the department to further establish student exchange programme where students from the two departments will visit each other's laboratory during the summer holidays. We have also established research collaborations with other international Universities such as Bonn University in Germany, Liverpool School of Tropical Medicine in the UK, University of Edinburgh in the UK, and Case Western University of USA among others.

On research, the Department witnessed successful execution of old projects and importantly four other new international projects have been renewed or started; some of these projects are funded by Bill and Melinda Gates Foundation, European Union Commission, German Research Foundation (DFG) and European Foundation Initiative on Neglected Tropical Diseases

(EFINTD), VW Foundation of Germany among others. All these projects have postgraduate training component incorporated so a number of postgraduate students are being trained.

STAFFING

Lecturers:	5
Service lecturers:	10
Administrative Assistant:	1

Academic Staff Members

Dr. Alexander Yaw Debrah is the Head of Department, and he is joined by four permanent lecturers, Mr. Clement Opoku-Okrah, Dr. Addai Mensah Otchere, Mr. Benedict Sackey and Mrs. Lilian Antwi Boateng. The rest of the courses are handled by lecturers from the Departments of Anatomy, Physiology, Pathology, Microbiology, and Molecular Medicine of the School of Medical Sciences.

Administrative Staff

Alice Opoku (Mrs.)

STUDENTS NUMBERS

Two hundred and Nine (209)

LINK WITH OTHER INSTITUTIONS OF HIGHER LEARNING

The Department has a link with the School of Biomedical Science of the University of Westminster, UK.

DEPARTMENT OF NURSING

PROGRAMMES OFFERED BY THE DEPARTMENT

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

STAFFING

Lecturers: full time	- 5
Part time Lecturers	- 5
Visiting lecturer	- 1
Administrative staff	- 1

STUDENT NUMBER

The department has a total of Two Hundred and ninety three students (293), comprising those in the General Nursing, Emergency Nursing and Midwifery programmes.

TEACHING

The Department provides intensive theoretical and clinical teaching in nursing, building on knowledge in the basic sciences. This prepares students to become professional nurses capable of

effectively delivering nursing care to their clients and significant others. The course also prepares the students to identify pertinent health problems in health institutions and communities and to effectively design 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

- 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 and the University of Nottingham, School of Nursing, Midwifery and Physiotherapy, UK

PARTICIPATION IN WORKSHOPS/CONFERENCES/SEMINARS

Staff participated in the following conferences/workshops:

- 4th Scientific Conference of the College of Health Sciences, KNUST at the Great Hall, KNUST
- Innovative Approaches in Perinatal and Postnatal Care: strategies for Reducing Maternal and Neonatal Morbidity and Mortality, Organized by Ghana chapter of the West African college of Nursing in Accra from 11th to 15th September, 2011
- Stakeholders’ meeting organized by the American College of Nurse-Midwives to develop standards for midwifery training schools to be Center of Excellence in Reproductive Health Training” under the ACNM School strengthening Program” 18th and 19th January, 2012 at Miklin Hotel, Kumasi

EXCHANGE PROGRAMMES

In pursuit of the collaboration between KNUST and the School of Nursing, University of Nottingham, UK, three (3) students came to Ghana for experiences in community health nursing and clinical practice. They had these experiences at the Juaben Government Hospital

DONATIONS/GRANTS

- The Department benefitted from donations of Anatomic models from United Nations Population Fund (UNFPA)
- The Departments collaboration 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 is on-going.

NEW PROGRAMMES

- The department has started a BSc. Midwifery programme which begun in the 2011/2012 academic year.
- The department is proposing a Diploma in Emergency Nursing programme for the 2012/13 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 organized for midwives who trained in the Midwifery institutions to enable the University award them the diploma. 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. The Ministry is Health is collating a list of Midwives who are yet to benefit from the programme for a last batch of training.

PROFESSIONAL LICENSING EXAMINATION

The department registered twenty seven (27) candidates for the professional nursing examination organized by the Nursing and Midwifery Council for Ghana. Fifteen (15) of them were successful in all subjects.

DEPARTMENT OF SPORTS AND EXERCISE SCIENCE

STAFFING

Senior Lecturer (on contract) -	1
Senior Lecturer (on sabbatical) -	1
Lecturers: - Part time -	9
Clerk Grade I -	1

ACADEMIC STAFF MEMBERS

Dr James A. Adjei, the current Ag. Head is assisted by Dr. Oladipo Isiaka Oladele (on sabbatical). The rest of the courses are handled by lecturers from the School of Medical Sciences and other Departments in the University.

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 programme 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 Administrative Unit of 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, B.Sc. Physiotherapy in the foreseeable future. Planning of the course and its inputs are currently underway.

CAREER PROSPECTS

Sports and Exercise Science graduates could be employed in both private and governmental settings as physician assistants, fitness consultants, sports management consultants, sports nutritionists, fitness directors, biomechanist and as fitness or exercise leaders.

RESEARCH INTERESTS

- Exercise Prescription for the Aging.
- Injury Rehabilitation Techniques.
- The Impact of Fitness on 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 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.

ACADEMIC STAFF MEMBER

The Department has Dr K. Bedu-Addo as the coordinator. Most of the courses are handled by lecturers from the departments of Anatomy, Physiology, Pathology, Microbiology, Radiology and Molecular Medicine of the School of Medical Science, and from the Department of Nursing and Physics. Efforts are however, being made to recruit more core staff. Currently we expect

Mr. Y. Wiafe to complete an MPhil Sonography from the University of Leeds in the UK so that he can join the staff next year.

The student population has grown from three to thirty four. The first batch of students will graduate in the next academic year.

PROPOSED PROGRAMME

The Dean is feverishly working to add yet another new programme, namely B.Sc. Radiography to the existing B.Sc 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.

DENTAL SCHOOL

INTRODUCTION

The Dental School is in its 6th year and in June, 2012 the pioneer class of eight (8) students will complete the Bachelor of Dental Surgery programme. Hopefully, in August, 2012, they would join their counterparts in the Medical School for the Oath Swearing Ceremony.

PURCHASE AND INSTALLATION OF DENTAL EQUIPMENT

The College of Health Sciences with assistance from the GETFund has procured additional 4 phantom heads and work stations for training the Dental Students. The equipment will be installed at the simulation center of the School of Medical Sciences at KATH.

STUDENT POPULATION

To date, one hundred and ten (110) students have been enrolled in the Dental School.

STAFFING

Lecturers: Full Time	3
Part Time	5
Adjunct	2
Administrative	4

ACCREDITATION

The National Accreditation Board has granted a three (3) year accreditation for the running of the Bachelor of Dental Surgery programme with effect from September, 2011.

FUTURE PLANS

- 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.

CONCLUSION

The KNUST Dental School is in its 6th 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) was established in 2009 as an integral School of the College of Health Sciences and it 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.

The School of Veterinary Medicine has been established to produce qualified Veterinary Doctors locally to alleviate the shortage.

ACCREDITATION

The National Accreditation Board has approved the grant of five (5) years accreditation for the running of the Doctor of Veterinary Medicine programme with effect from January 1, 2011.

LIST OF ACADEMIC DEPARTMENTS

- Veterinary Anatomy and Physiology
- Veterinary Pathobiology
- Veterinary Pharmacology and Toxicology
- Veterinary Public Health, Food Hygiene and Food Safety
- Veterinary Clinical Studies

SCHOOL ADMINISTRATION

Acting Dean

Head of Anatomy and Physiology Department

School Examinations Officer/Head Pathobiology Department

Senior Assistant Registrar

Dr. Raphael D. Folitse

Dr. Tony Opoku-Agyemang

Dr. Joseph Atawalna

Mr. Simon Yaw Boribah

FACILITY FOR CLINICAL TRAINING

In the absence of Veterinary Teaching Hospital on campus, the College has identified off-campus government veterinary clinic at Amakom for clinical training of students. It has been renovated and upgraded for the purpose.

INTERNATIONAL COLLABORATION

Memorandum of Understanding for collaboration with the Schools of Veterinary Medicine of Tuskegee University, Tuskegee, Alabama and Purdue University, Lafayette, Indiana, has reached advanced stage of finalization. Proposed areas of collaboration include faculty and students exchange programmes, research, access to electronic video and audio teaching aids, and partnership in physical infrastructural development.

DONATIONS

1. In response to a request for assistance, Commonwealth Veterinary Association has donated thirty (30) veterinary books to the school this year. This is the third time such book donation has been made by the Commonwealth Veterinary Association.
2. Christian Veterinary Mission, USA branch has donated fifty three (53) veterinary books to the School.
3. Special mention must be made of Dr. Andy Quarcoopome, a private veterinary practitioner of Tema Animal Hospital who must be commended for his interest and efforts in the development of the School. This year, Dr. Quarcoopome has donated thirteen (13) stethoscopes for the third year students of the school. He had previously presented one (1) LCD projector and donated cash of \$1000 (one thousand US dollars) specifically for the purchase of veterinary text books for the school.
4. Dr. Kwesi Darkwa, a private veterinary practitioner of Multivet Ghana Limited has donated one Laptop to the school for presentation of lectures to students.
5. The Veterinary Services Directorate, Ministry of Food and Agriculture, has donated twenty (20) sets of post mortem kits to the school.

FUNDING FOR THE CONSTRUCTION OF SCHOOL OF VETERINARY MEDICINE COMPLEX

Ghana Education Trust Fund (GETFund) has approved the funding for the construction of the proposed School of Veterinary Medicine Complex to be completed within three (3) calendar years. It is envisaged that all necessary documentation will be ready for the project to begin before the end of 2012.

GETFund has also made available funds for the purchase of one 30-seater Toyota Coaster bus for the School.

CHALLENGES

The challenges as expected of a new school are many. They include the two below.

1. Faculty: We are facing difficulties in attracting qualified specialists to teach most clinical specialties. Advertisement has been posted in Commonwealth Veterinary Journal announcing vacancies for lecturers in Surgery, Anatomical Pathology, Clinical Pathology, Medicine, Radiology and Theriogenology.
2. Veterinary Technicians: Low salary levels attached to technician grades in the University is making it increasingly difficult to convince veterinary technicians to accept appointment as Technicians.

KUMASI CENTRE FOR COLLABORATIVE RESEARCH IN TROPICAL MEDICINE (KCCR)

INTRODUCTION

Having been established nearly fifteen years ago, the Kumasi Centre for Collaborative Research in Tropical Medicine (KCCR) continues to make strides in the scientific quest for answers to the numerous tropical diseases bedeviling our country Ghana.

VISION

Making KCCR a centre of excellence and an international platform for collaborative bio-medical research for the benefit of Ghanaians and the international community.

OBJECTIVES

The objectives of the Kumasi Centre for Collaborative Research in Tropical Medicine are:

- to conduct basic and applied research on tropical diseases,
- to address scientific topics in medical epidemiology and health implementation on subjects of regional importance,
- to contribute to the development of human and technical resources through teaching, postgraduate training, scientific collaboration and maintaining research facilities,
- to foster multinational scientific collaboration in the diagnostics, treatment and management of tropical diseases.

PROJECTS

AWOL - This study aims at refining existing regimes of drugs with known activity against *Wolbachia* (doxycycline, rifampicin) and to provide an optimized treatment regime in the event of the development of resistance or poor responsiveness that can be integrated in the MDA time frames of the existing control programmes for LF.

BAT - Virus biology, host ecology and human behaviour as determinants for corona viral 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.

CDS - The main aim is to look into the impact of certain diseases eg: Malaria, worm infestation as measures of child development in Children and among pregnant mothers.

DFG GENETICS - Genetics of Lymphoedema and Hydrocele in Filariasis. The aim of this study is to analyze cytokine, cytokine receptor, VEGF and VEGF receptor single nucleotide polymorphisms in lymphoedema, hydrocele and infected patients without pathology as possible causes of the different disease manifestations in

MAL055 - Phase III 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 - Analysis of genetic polymorphisms of cytokines, vascular endothelial growth factors (VEGFs) and VEGF receptors in disease manifestations in LF. This project aims at analyzing

pro- and anti-inflammatory cytokine, VEGF and VEGF receptor polymorphisms as possible causes of the different disease manifestations in patients with LF.

TB5- 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 - “*Wolbachia* endobacteria in filarial infections - exploring their usefulness as targets for novel chemotherapies that are anti-filarial, reduce filarial pathology and interrupt transmission”. This study assesses the depletion of *Wolbachia* with doxycycline is essential for an improvement of lymphedema and hydrocele patients.

BURULIVAC - The general objective of BuruliVac is to identify and develop novel vaccine candidates suitable for translation into clinical application. 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.

E-PIAF - The aim of this study is to apply bioinformatics and computational models of immunity to the analysis of detailed clinical and biological data from filarial infections to define protective immunity and identify vaccine candidates in an approach known as pathway biology.

TB6 - The role of candidate microRNAs in T-cell response during acute tuberculosis and latent *M. tuberculosis* infection. The study is a combined clinical and basic immunology project that aims at determining the influence of candidate microRNAs on the treatment success in acute tuberculosis and the disease progression risk in latent *M. tuberculosis* infected households.

BTI/BS - This study aims at targeting mosquito larvae, using biological agents as *Bacillus thuringiensis var israelensis* and *Bacillus sphaericus*.

HEPIK - A study of hepatitis B co-infection among HIV-positive patients in Komfo Anokye Teaching Hospital.

TSAP - Typhoid Fever Surveillance Program in Sub-Saharan Africa. TSAP is a multi-country standardized Typhoid fever Surveillance Program in sub-Saharan Africa. The objectives of this project are to develop standardized guidelines for enteric fever surveillance in collaboration with scientists and technical agencies (e.g., WHO, U.S. CDC, Institut Pasteur, and BNI), and to establish a sustainable surveillance system for typhoid and paratyphoid fever in sentinel sites in sub-Saharan Africa.

LYSSA - Lyssaviruses as neglected causes of viral encephalitis in Africa and Brazil. The objective of the study focuses on bat and lyssaviruses and their ecological and virological species barriers towards humans and livestock. In this same study the researchers will investigate the prevalence of Lyssaviruses in fruit eating bats.

ESTHER - The study is on the Efficacy of first and second line ART in HIV patients treated at the Komfo Anokye Teaching Hospital Ghana, Kumasi.

FATI - Fozivudine in Africa Trials Initiative is a Phase 2 trial to evaluate the optimal dose between 4 different doses of Fozivudine compared to a standard Zidovudine based antiretroviral regimen in ART naïve, non subtype B HIV-1 infected individuals from different African countries and to confirm a sustained virologic suppression defined as HIV-RNA <50 copies/ml of Fozivudine based antiretroviral therapy regimens after 24 weeks of treatment.

RODAM - The overall aim of the RODAM project is to contribute to the understanding of the complex interplay between environment, behaviour and genetic features in T2D and obesity among one homogeneous SSA immigrants to Europe and their compatriots in SSA, and to identify specific risk factors to guide intervention and prevention and to provide a basis for improving diagnosis and treatment.

APARET - To build sustainable research capacities in Africa it is inevitable for African researchers to acquire their own and independent research grants. By assigning several qualified fellows to conducting research grant writing activities and providing support to them through a network of peers, Mentors, and supervisors, we aim to stimulate research activities and to increase the number of future grants that can be attracted.

DOLF - Death to Onchocerciasis and Lymphatic Filariasis. This study looks at the effect of single dose treatment versus double dose treatment of both diseases using Ivermectin.

HHECO - A study of the impact of *Helicobacter pylori* infection on immune regulation and clinical course in HIV patients in Ghana (short title: HIV and Helicobacter pylori co-infection study – HHECO)

ON-GOING RESEARCH

KCCR AND UNIVERSITY OF ALABAMA AT BIRMINGHAM (PROFESSOR PAULINE JOLLY)

In 2011 three research studies were conducted in Ghana with support from KCCR laboratory and administrative service. KCCR also provided residence for 5 students (4 females and 1 male) who participated in these studies and shipped questionnaires for the studies to the USA.

The first study was titled: ‘Uptake of antenatal care (ANC) services and pregnancy outcomes in Kumasi, Ghana’.

The second research study is titled: ‘Association of aflatoxin biomarker levels with health status and HIV disease’.

The third study is titled: ‘Factors contributing to cervical cancer in Kumasi, Ghana’.

RESEARCH ACTIVITIES IN GHANA WITH BNITM (DR TORSTEN FELDT AND TEAM)

LIVER CIRRHOSIS STUDY (LCS)

Prevalence of liver disease and risk factors in patients seeking medical care in Kumasi, Ghana (short title: Liver Cirrhosis Study - LCS)

Involved scientists: Richard Phillips (PI Ghana), Torsten Feldt (PI Germany), Sabine Stauga, George Bedu-Addo, Stephan Ehrhardt, Gerd-Dieter Burchard, Stefan Schmiedel

HEPATITIS E VIRUS IN HIV PATIENTS IN KUMASI

No evidence of persistent or chronic hepatitis E virus infection in HIV patients in Ghana

Involved scientists: Torsten Feldt, Fred Stephen Sarfo, Richard Phillips, George Bedu-Addo, Lisa Claussen, Gerd-Dieter Burchard, David Chadwick, Jan-Felix Drexler, Anna Maria Eis-Hübinger

OPHTHALMIC COMPLICATIONS IN HIV

Prevalence and spectrum of ophthalmological manifestations in HIV patients in Kumasi, Ghana

Involved scientists: Peter Osei Bonsu, Birte Meyer-Rüsenberg, Betty Norman, George Bedu-Addo, Gerd-Dieter Burchard, Torsten Feldt

E-WASTE STUDY

Comprehensive exposure assessment at e-waste dump Agbogbloshie, Accra, Ghana

Involved scientists: Dr. Torsten Feldt, Dr. Holger Till, Prof. Dr. Michael Wilhelm, Dr. Jürgen Wittsiepe, Prof. Gerd D. Burchard, Dr. Stephan Ehrhardt, Dr. Julius N. Fobil

SPATIO-TEMPORAL AND SOCIOECONOMIC RISK FACTORS OF MALARIA IN CHILDREN FROM GHANA

The objectives of this project are to investigate spatio-temporal patterns of malaria in children from Ghana below the age of 15 years. Specifically, it investigated how far malaria is associated with a position of a household in the area, the land use around homesteads, precipitation and temperature, and other environmental factors in the context of the socioeconomic and sociodemographic situation.

Funding: Federal Ministry of Research and Education

NEGLECTED INFECTIONS AS CAUSES OF MORBIDITY AND MORTALITY IN AFRICAN CHILDREN UNDER FIVE YEARS OF AGE - ESTABLISHMENT OF AN ADVANCED DIAGNOSTIC SYSTEM

The specific objectives of this proposal are

- i. to establish a standardized IMCI-based diagnostic system for infectious diseases (Core Module);
- ii. to develop simple clinical algorithms for the direction of patients to specific investigations and treatment schemes (module 1);

- iii. to assess morbidity and mortality of Ghanaian children under five years of age due to invasive bacterial infections and their participation and role in various co-infections, including malaria (module 2);
- iv. to determine the significance of distinct pathogens as diarrhea-causing agents (module 3);
- v. to evaluate the specific viral aetiology of acute respiratory infections.

Funding: UBS Foundation, Bill & Melinda Gates Foundation

**TYPHOID FEVER SURVEILLANCE IN SUB-SAHARAN AFRICA PROGRAM (TSAP):
A TYPHOID FEVER SURVEILLANCE IN THE ASHANTI REGION, GHANA**

This research is being undertaken with Prof. Juergen May (BNITM)

TB BIOMARKERS and MCCR NATCELLS

This research is being undertaken with is **DR MARC JACOBSEN** and it aims at clarifying the role of microRNAs in human tuberculosis (TB) and latent *M. tuberculosis* infection (LTBI).

APPROVED RESEARCH GRANTS / FELLOWSHIPS

April 2011: International Cooperation in Education and Research with Madagascar. Initiation grant of the German Ministry for Education and Research (Bundesministerium für Bildung und Forschung, BMBF). Volume of funding: 37.496 Euro and 7 flights between Germany and Madagascar

April 2011: Funding start of the “African Programme for Advanced Research Epidemiology Training (APARET)”. 7th framework programme for research and technical development of the European Union capacity building grant. Volume of funding 2 Million Euros.

COLLEGE OF SCIENCE

INTRODUCTION

Established in 2004 as a successor to the Faculty of Science, the College of Science continues to provide high quality teaching, research, entrepreneurship training and community service in the pure and applied sciences, for the sustainable industrial and socio economic development of Ghana and Africa.

DEPARTMENTS

The College consists of the following seven departments which run a number of undergraduate and postgraduate programmes, as well as provide service courses in the basic sciences and mathematics to other Colleges of the University:

Department of Biochemistry & Biotechnology

Department of Optometry & Visual Science

Department of Theoretical & Applied Biology

Department of Chemistry

Department of Computer Science

Department of Physics

Department of Mathematics

The College also has two research units: the Institute of Science and Technology for Africa (ISTA) and the National Centre for Mathematical Sciences.

STUDENT AND STAFF STATISTICS

The College has a total student number of 7168. This includes 2166 females and 652 graduate students. The staff comprises 154 academic staff and 98 administrative and support staff.

COLLEGE ADMINISTRATION

The College Administration is made up of the following officers:

Provost	Prof. R. K. Nkum
Ag. College Registrar	Mrs. Margaret Dzisi
Ag. College Accountant	Mr. G. S. Ahinful
Ag. College Librarian	Mrs. Hagar Atta-Obeng
Assistant Registrar	Mrs. Ida Saeed

ACTIVITIES

Highlights of major developments and activities in the College during the period under review are as follows:

Training for 2nd Cycle School Science Teachers

A five-day training programme was organized by the College, in collaboration with the Ghana Education Service for second cycle school Science Teachers in the Ashanti Region from 9 -13 January 2012. The objective of the programme was to refresh and upgrade the knowledge and skills of participants, in order to enhance teaching and learning of Science and Mathematics in the secondary schools. The College intends to extend similar training programmes to other secondary schools in the Northern sector of the country next year.

Training Programme for Technicians

In furtherance of staff development, the College of Science in collaboration with the College of Health Sciences has initiated a two-year comprehensive training programme to upgrade the technical skills and knowledge of Technicians in both Colleges. Technical staff in other Colleges and Units of the University are also benefitting from the programme. The programme which took off in October 2011 has thirty-eight (38) participants.

Pre –Science Teaching Programme for International Students

The College organized a six-week intensive Pre-Science Teaching Programme from 15th August 2011 to 23rd September 2011 for first year international students admitted into the College. The programme provided participants with a good grasp of basic science principles in preparation for their main course work, and addressed other academic challenges usually confronted by international students.

Accreditation and New Programmes

During the period under review, a number of the College's academic programmes received re-accreditation from the National Accreditation Board. These include: BSc. Physics, BSc. Computer Science, MSc./MPhil. Information Technology, among others.

Efforts are also far advanced to introduce new undergraduate and graduate programmes into the mainstream and via Distance Learning. These include BSc. Brewing Science and graduate programmes in Biostatistics, Environmental Physics and Meteorology.

Hosting of Huawei ICT Centre

ICT training in the College and the University for that matter received a major boost with the formal commissioning of an ICT Laboratory donated to the University by Huawei Technologies Company Limited on 28th November 2011. The laboratory which is situated in the College of Science Building Complex provides a conducive atmosphere for ICT training for both students and staff.

Staff Recruitment and Development

In order to improve upon the student: staff ratio, and make up for the shortfall resulting from retirements and staff on study leave, eight (8) new staff were recruited into various departments in the College during the period under review. Five (5) members of staff also returned from study leave to beef up the staff strength. Six (6) Lecturers and one (1) Research Fellow were promoted within the period, to the ranks of Senior Lecturer and Senior Research Fellow, respectively.

VISITORS

A delegation from the University of Reading, UK, led by Prof. Stephen Mithen, Pro Vice-Chancellor of the University, paid a courtesy call on the Provost, on the 21st of November 2011. A delegation led by Dr. David Cobham, Head of the School of Computer Science, University of Lincoln, UK, visited the College in February 2012. The visits provided the opportunity to explore possible areas of collaboration.

DEPARTMENT OF BIOCHEMISTRY AND BIOTECHNOLOGY

INTRODUCTION

The Department is dedicated to pursuing its research, teaching and service to community agenda with commitment and excellence. This is in recognition of the role that Biochemistry and Biotechnology play in basic and applied research in related to Health, Agriculture, Energy and Environment. The Department offers both undergraduate and postgraduate programmes.

STUDENTS STATISTICS

The total number of students enrolled in the department stands at 362. The details are as follows:

B.Sc Biochemistry	343
M.Sc. Biotechnology	10
M.Phil Biochemistry	8
PhD Biochemistry	1

STAFF

The Department's staff strength is thirty seven (37), comprising of one Full Professor, one Associate Professor, three Senior Lecturers, nine Lecturers, one Technical Instructor, three Demonstrators, six Senior Staff, seven Junior Staff and nine National Service Personnel. Arrangements have been made to start a programme in MSc/MPhil Forensic Science in the 2012/2013 academic year.

GRADUATE STUDIES

The Department offers quality research and teaching at the graduate level. Currently, we offer 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. The graduate studies are designed to provide top-notch scientific and research training to successful candidates in order to meet the needs of the nation's industrial development agenda.

GRADUATION/ORAL EXAMINATION

Two M.Sc. Biotechnology students graduated and one student defended his thesis in the period under review.

AWARDS

Professor (Mrs.) V. P. Dzogbefia received the Ghana Women Excellence Award in recognition of her outstanding contribution to education (tertiary). This award was presented to her by Hon. Juliana Azumah-Mensah of the Ministry of Women and Children Affairs under the Government of Ghana at the La Palm Royal Beach Hotel, Accra on 30th March, 2012.

STUDENT AWARDS

Mr. Richard Oppong won Prof. Samuel Evans Adunya and Mrs. Patricia A. Boykin-Adunyah's Academic Excellence Award for 2010/2011; and Mr. Obed Tetteh received Prof. (Mrs.) Victoria Pearl Dzogbefia's Best Final Year 'Enzymology' Student Award.

GRANT

Dr. Antonia Tetteh and Dr. F.K.N. Arthur received a grant of one thousand Ghana cedis (GH¢1,000.00) each from the KNUST Research and Conference Committee for their Research Projects.

RESEARCH

The Faculty and Students in the Department continue to do active research in various areas of endeavours. This has resulted in nine (9) Journals Publications and Conference Presentation in both national and international journals/proceedings.

TRAINING PROGRAMME

The Kirkhouse Foundation and Cocoa Research Institute Ghana (CRIG) in collaboration with the Department of Biochemistry and Biotechnology, organized practical training programme in Molecular Biology for the first year M.Sc. Biotechnology students and the final year undergraduate students. A training workshop was organized for the Laboratory Technicians by Prof. (Mrs.) Ibok Oduro and others who had returned from a training and research fellowship in the United States of America.

MEMORANDUM OF UNDERSTANDING (MOU)

As part of measures to deepen the relationship between the industry and the academia, the Department has signed an MOU with Prudmed Medical Consult and Laboratory Services Limited.

VISITORS

In charting the course for professional networking and staff capacity building, the Department received three Visiting Lecturers and a Dietician from State University of New Your, Genesco, USA. As part of their visit, the team comprising Prof. Carol Long, Dr. Becky Lews, Prof. Susan Bandoni and Thomas Muench, organized various seminars on active teaching, metaphoric language and scientific discovery, internationalization in higher education and the art of dietetics for staff and students in the Department.

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 reviewers for reputable journals.
- The Department in collaboration with Prudmed Medical Consult organized a workshop on Health Awareness for Teachers in the Kumasi Metropolis.

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 underway to further improve upon its equipments and instruments 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 remains a major challenge.

CONCLUSION

In spite of these challenges the Department still carries out quality research, teaching and service to the community with dedication.

DEPARTMENT OF THEORETICAL AND APPLIED BIOLOGY

INTRODUCTION

The Department of Theoretical and Applied Biology is one of nine currently in the College of Science. This department leads the field in fundamental biological research and innovative, multi-disciplinary science as Ghana's best Biological Science department. It runs a 4-years Bachelor of Science (BSc) degree programme in Biological Sciences, 4-years BSc degree programme in Environmental Science and 2-years of Master of Science (MSc) programme in Environmental Science. In addition there are graduate research programme leading to the Master of Philosophy (MPhil) and Doctor of Philosophy (PhD) degree in major disciplines in Biological Sciences. Currently, in the 2011/2012 academic year the student population stands at 935 students; 836 undergraduates, 88 MSc/MPhil and 7 PhD.

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 Animals), Genetics, Molecular Biology, 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 Medical Sciences and the Faculty of Renewable and National resources (FRNR).

New Programmes and Courses

The Department has successfully mounted its MSc Environmental Science programme on the distance learning mode. It has been well patronised and during this 2011/2012 academic year the first batch of students will graduate. The Department is in the process of offering BSc Brewing. New courses are 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, Environmental Microbiology, Environmental Pollution and Bioremediation.

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, 000,000.00 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.

DANIDA

This is a collaborative effort between KNUST and universities in Denmark with funding from DANIDA. Mrs Linda Ofori is currently registered on it under the “sandwich-model” for a PhD degree.

Canada NSERC/University of Waterloo Project

Canada NSERC in collaboration with University of Waterloo 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 Bonsumtwi in Ashanti region. Two students working on the project have graduated with Ph.D. degrees.

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 BSc. degree programme to make the BSc. programme more applied and attractive. The new name of the Department - Theoretical and Applied Biology reflects these changes. These are expected to attract more students both local and foreign and to bring in more funds (AFUF). 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 Master's 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 MSc. 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-training programmes in the Department. Our well structured courses and beautiful scenery in the department would definitely make your stay worthy of remembrance.

KNUST BOTANIC GARDEN

Under the management of the Department of Theoretical and Applied Biology the KNUST Botanic Garden, has continued to function as a resource site for conservation of species and providing services for purpose of teaching and research.

The Garden with an area of 12.9 ha is the third largest in Ghana and is also listed among the 2500 botanic gardens and arboreta in 148 countries around the world. It is a member of the West African Botanic Gardens Network (WABGNET) which is the West African regional grouping of African Botanic Gardens Network (ABGN) a continental grouping of the global network, the Botanic Gardens Conservation International (BGCI).

It is floristically rich containing tropical palms, timber species, climbers and medicinal plants as well as collections of exotic plants. The current level of diversity and development of plant species has led to the habitation of the garden by several species of animals including birds,

mammals, reptiles and insects. A recent survey identified as many as 32 different species of birds within the boundaries of the Garden.

To a limited extent the garden serves the University Community and the general public as an area for retreat and socializing. Most of our students meet in the recreational areas in groups for social and religious activities. It provides a cool and refreshing environment conducive for meditation, relaxation and sightseeing.

Under the headship of Dr. P. K. Baidoo, funds were made available for the construction of a public place of convenience. The four toilets facility, with male and female sections, also has a washroom. The construction is in progress for completion in 8 weeks.

The effective functioning of Botanic Garden has been constrained by uncontrolled activities in garden. Intruders unlawfully enter the Garden usually through unauthorized routes and harvest wood, tap palm wine, and hunt animals posing some danger to users of the garden. It is essential that additional security services be provided and that the Garden is completely fenced.

Protecting the KNUST Botanic Garden for biodiversity conservation is important to keep it in line with the objectives of the International Agenda for Botanic Gardens in Conservation. The KNUST Botanic Garden cannot be replaced hence every effort should be made to ensure conservation of its species, development of its resources and protection of the area, for it to maintain an international status.

DEPARTMENT OF FOOD SCIENCE AND TECHNOLOGY

INTRODUCTION

The Department seeks to prepare students for creative, challenging, diverse and rewarding careers in the food industry. We offer competitive undergraduate and graduate programs that prepare students for leadership positions in the food industry, academia and government. Our research programs are designed to expand understanding of chemical, biological, sensory, nutritional and physical nature of foods and food related products. The Department employs an interdisciplinary approach to educating students in areas such as food quality, nutrition, entrepreneurship and food processing engineering. Our students also receive training to enhance their critical thinking ability, using problem – based learning approaches. The relatively small population within the Department ensures that the students, teaching and non-teaching staff have close contact in an intellectually stimulating and professional environment. The Department will this year be graduating the fifth batch of undergraduates since its establishment in 2004.

STUDENTS STATISTICS

The Department recorded a significant increment in the number of postgraduates and undergraduates with reference to previous years. The current student population is given below:

BSc	-	109
MSc	-	17
MPhil	-	9
PhD	-	3

STAFF

The staff strength is 12, comprising one Full Professor, two Associate Professor, eight Lecturers, and one Technical staff.

GRADUATE STUDIES

The Department offers a one-year MSc Food Science and Technology, two-year MPhil Food Science and Technology and three-year PhD Food Science and Technology. The programmes have been designed to train post graduates for the Food Industry and Careers in Food Research and Academia.

GRADUATION

Two students of MSc Food Science and Technology graduated during the year under review.

AWARDS

A first year undergraduate student of Food Science and Technology, Miss Nadia Serwaa Opong won the Overall Best Debater Award in the Ghana Inter-tertiary Debate Competition, 2012. Miss Opong again won the KNUST-NUGS Best Debater Award, 2012.

RESEARCH

The staff of the Department continues to do active research in various areas of endeavors. The research based information is designed to have community impact applications. This has resulted in a number of publications in both national and international journals. The current major research areas include:

- a) Product development and nutritional content of some indigenous leafy vegetables and tropical fruits.
- b) Product diversification of staple and perishable crops such as sweet potato, cassava etc.
- c) Fat replacement using pulp soursop.
- d) Modelling food processing antinutrients in neglected and underutilized legumes.
- e) Composite some samples of neglected and underutilized legumes against soya beans proteins functionalities and comparatively study their amino acid profiles.
- f) Limited proteolysis of proteins extracted from neglected and underutilized legumes and evaluation of their food functional properties.
- g) Control of acrylamide formation in model frying of refined bleached deodorized palm olein optimally incorporated of *r. battenbergiana* extract.
- h) Structuring food models based on the physicochemical and the functional properties of proteins and starches extracted from neglected and underutilized legumes. (phd work in progress).
- i) Assessing the antioxidant activity of Baobab fruit pulp and fumicle powder in oil.
- j) The effects of different fertilizer protocols on the yield and quality of cassava starch and flour.
- k) Amino acid and fatty acid profiling of some cereals and legumes grown in Ghana.
- l) Documentation of general composition and consumer knowledge and perception of traditional foods.

- m) Design and manufacture solar- adsorption drying system (SADS) to dry agricultural products such as Yam chips and tubers continuously for 24 hours.
- n) 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.
- o) Evaluation of the flour starch and antimicrobial properties of yam beans.
- p) Evaluation of sweetpotato germplasm for suitability for use in non sweet and sweet Food product: Amylase activity and carbohydrate composition of storage roots.

STAFF CAPACITY BUILDING

One of the Department's newly recruited Lectures; Dr. Francis Alemawor completed a postdoctoral fellowship in the United States of America. Again, a technical staff, Mr. William Ofori Appaw also attended a two weeks training program on "Upgrading of food testing skills for food processing professionals" organized by Shriram Institute for Industrial Research, Delhi-India. This was organised for scientists and professionals of food sector from African countries under the aegis of Indian Africa Forum Summit (IAFS)-II. Prof. Ibok Oduro was accepted for a training and research fellowship by Seeding labs in collaboration with the Novartis Institute for Biomedical Research in Boston, USA in 2011. Dr. Faustina D. Wireko-Manu also received a 2 year Post doctoral Fellowship for African Women in Agricultural Research and Development (AWARD) along with Prof. Ibok Oduro as her mentor. This was sponsored by the CGIAR Gender and Diversity Program. AWARD is a Professional development program that strengthens the research and leadership skills of African Women in agricultural science.

SEMINARS AND WORKSHOPS

The staff and students actively participate in professional conferences, seminars, and workshops. Participation in these activities broadens the students' outlook of the programme and enhances staff performance in teaching and research. The Department was well represented in seminars organized by GRASAG in which one of its students won the first place award for best presentation. Others include participation in the Annual General Meeting of the Ghana Nutrition Association held at the Noguchi Memorial Institute for Medical Research, Legon and an industrial visit to Healthy Life Beverages for second year students of the Department.

COLLABORATION

The Department continues to collaborate with other Institutions and Food Processing Companies to elevate a conservative agriculture sector into an innovation driven sector based on research and development. This is to ensure sustainability of the food industry and advance the University effort to train its students focusing on practical hands on experiences. There are currently active collaborations with institutions such as the Food Research Institute – CSIR.

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 as well as chemicals and standards acquisition are other major challenges for the Department.

CONCLUSION

In spite of the challenges, the Department still carries out quality research, teaching and services to the community with dedication.

The academic year has been very successful and thanks to all our stakeholders who have supported us throughout the 2011/2012 academic year.

PUBLICATIONS AND PRESENTATION AT CONFERENCES, WORKSHOPS AND SEMINARS

The staff and students of the Department are involved in active research in various areas of endeavors and this has resulted in scientific publications in peer-reviewed journals and conference presentations. In a one day research seminar, organized by the Ghana science association on April 4 2012, both staff and students gave research related poster presentations. These included:

- Phosphorylated bambara groundnuts starch, composited with its defatted flour for noodle preparation
- Processing underutilized sweet potato tubers into Non-alcoholic beverage

THE DEPARTMENT OF OPTOMETRY AND VISUAL SCIENCE

INTRODUCTION

The Department of Optometry and Visual Science is one of the nine Departments in the College of Science. The department runs a 6-year Doctor of Optometry programme.

This year, the 6th batch of O.D students will graduate. This brings to over 200 the number of ODs the Department has so far produced. They are serving in hospital/clinics and private practices all over the country.

STUDENT POPULATION

There are currently 157 students in the department.

STAFF

Academic Staff/ Senior Members

Below is the list of fulltime academic staff in the Department;

Dr. Mrs. Angela O. Amedo - Snr. Lecturer/Head

*Dr. Mrs. Nana Yaa Koomson – Lecturer

Dr. David Ben Kumah- Lecturer

Dr. Abdul Kabir Mohammed – Lecturer

Dr. A. Sadik Ahmed - Lecturer

Dr. Pascal Michele Tschiake- Lecturer

Dr. Emmanuel Owusu - Technical Instructor

Dr. Clement Afari – Technical Instructor, MGOA

*On Study leave

Support Staff

Miss. Eva Opuni Mensah	-	Administrative Assistant
Mr. Dominic Aduboahene	-	Principal Technician
Mrs. Brenda Biney	-	Technical Assistant GD II
Mr. Isaac Kofi Atta	-	Driver
Miss Agnes Zanu	-	Messenger

ACTIVITIES

Teaching

The Department offers courses and electives of sufficient depth that ensures that the department is placed at the cutting edge of optometric education in the country. These include the right mix of lecture courses, practicals, seminars, externship and internship. There are also operating students clinics all geared towards excellence and confidence building that is very necessary for future professional work.

The goal of the Department continues to be the training of students to eventually pass out as primary healthcare practitioners of the eye and visual system who provide eye and vision care which includes refraction, dispensing, detection/diagnosis of disease in the eye, management and or referral. The training emphasizes that, even though they are usually the first contact for people with eye problems, they are part of a team and need to work with other health professionals including ophthalmologists, ophthalmic nurses and opticians to give the patient comprehensive eye and vision care.

Collaboration

The Department collaborates with several eye clinics all over the country for the clinical training of the students. Students visit some of these clinics during the semester for clinical training and for attachment during the vacation. OD 6 students spend 12 weeks during the second semester in an external clinical setting for their clinical externship.

Listed below are some of the eye clinics and hospitals we collaborate with;

1. Komfo Anokye Teaching Hospital, Kumasi
2. Korle Bu Teaching Hospital
3. St. Dominic's Hospital, Akwatia
4. VRA Hospital, Akosombo
5. Westphalian Hospital, Oyoko
6. Koforidua Central Regional Hospital
7. Tamale Regional Hospital
8. Sunyani Regional Hospital
9. Emmanuel Eye Centre, Accra
10. Tema General Hospital
11. Kumasi South Hospital, Kumasi
12. KNUST hospital
13. Asamang SDA Hospital

QUALIFYING EXAMINATION AND SECOND OATH SWEARING AND INDUCTION CEREMONY

In 2011 a qualifying exam was conducted in conjunction with the Ghana Optometric Association (GOA) and University of Cape Coast department of Optometry at KNUST for the 2009/2010 graduates who had successfully completed a year of internship. The Ghana Optometry Association together with the training institutions held the 4th Oath Swearing and Induction Ceremony for the 4th batch of graduates of the Doctor of Optometry programme on the 13th of January, 2012 under the theme: “Equity towards Eye Care; The Role of the Optometrist” at the British Council Auditorium in Accra. The occasion was graced with the presence of special guests, amongst them are the Director of the eyecare secretariat and the Minister of Health’s representative. Thirty-three (33) students were from the KNUST and five (5) from the UCC Departments of Optometry where graduates were inducted.

RESEARCH

Senior members of the Department are involved in various researches in the following areas:

1. Visual status of school children
2. Environmental vision in the workplace
3. Link between visual status and academic performance
4. Refractive error development and etiology of myopia
- 2 Accommodative and vergence dysfunctions in poorly performing and inattentive basic school children
5. Accommodative and vergence dysfunctions amongst KNUST students
6. Randomized, double-masked trial of atropine vrs. cyclopentolate – phenylphrine combination in cycloplegic refraction
7. Trend in refractive error changes after cataract extraction
8. Patient satisfaction with cataract extraction and refractive error correction after cataract extraction
9. Refractive error in tertiary students
10. Prevention of cataract – potentials of some herbal preparations
11. Prevalence and causes of blindness and low vision in rural communities
12. Ocular morbidity amongst young people in the rural community

SERVICE TO THE COMMUNITY

Staff and students of the Department have been continually involved in outreach programmes to institutions, schools, churches, childrens’ homes, market places and other such gatherings to give education on eyes and perform vision screening and eye examinations in deprived communities in Ghana on a regular basis. Faculties on such occasions give talks on eye health.

A number such volunteer outreach programmes were conducted in 2011 and early 2012 when the department in conjunction with Vision Aid Overseas (VAO) with the assistant of Kuapa Kokoo undertook outreach eye clinics in four major cocoa growing areas in the Ashanti region. The areas that benefitted were New Koforidua, Nobowam, Konongo Odumasi and Kwaso.

The Department was in November 2011 sponsored by the Deputy Minister of Works and Housing, Dr. Hannah Bissiw, for an eye screening and ocular health education at Techimantia and other communities in the Bechem District of Brong Ahafo region. This formed part of the Minister’s service to her community. A team of final year students, led by Dr. T. M. Pascal took part in the outreach. The turnout was so huge that the team worked deep into the night.

Spectacles and medications, procured with funds from Dr. Hannah Bissiw were given to those who required them free of charge. Those who required further treatment were referred to the Bechem and Sunyani hospitals. Many people, both young and old took the opportunity to have their eyes examined for the first time in their lives. They were so grateful to the Department and the Deputy Minister, and expressed the hope that it would be an annual activity.

From the 4th to the 7th of August, 2011, Dr. Emmanuel Owusu, Outreach Co-ordinator of the Department, together with some final year students undertook an eye screening and ocular health education outreach to Anum Asikuma in the Eastern region. With sponsorship from Nana Obeng Darko, the chief of the town, drugs and spectacles were provided free of charge to all who needed them. Over 500 people were attended to over the three days period.

Also as part of the activities marking the 60th Anniversary celebrations of the University, the Department undertook vision screening and ocular health education which was heavily patronized by staff, students and some members of the general public.

Another of such volunteer outreach programmes was conducted on World Sight Day in October 2011 when the Department organized an eye screening exercise in a number of basic schools near KNUST. In addition to these, the Optometry stand at Tratech remains one of the most patronized stands.

Faculty members continue to give talks at various functions. Dr. David Ben Kumah has been undertaking an ocular health education programme for the general public in Twi on Garden City Radio every Thursday from 11.00 am to 12.00 noon.

Members continue to serve on various Boards and Committees in the University nationally and internationally.

STAFF DEVELOPMENT

Three staff members are currently taking graduate studies within the university. Staff also continuously takes advantage of the Continuing Professional Education (CPE) programmes organized by the GOA, and also attended various conferences and workshops.

CHALLENGES

Being a clinically-based programme, there is a limit to the number of students that the Department can admit at a time. The present source of funding for the programme is solely from the Academic Facility User Fee (AFUF) paid by students and this creates a serious funding gap between income and expenditure of the Department. There is the need for more funds to enhance the work especially in the clinical areas in the Department.

CONCLUSION

With continued improvement in the equipment and staff situation, the Department expects to be able to do more research and more service to the community.

DEPARTMENT OF CHEMISTRY

INTRODUCTION

The Department of Chemistry at KNUST is one of the leading Chemistry Departments in Ghana with a current student population of about 490 with 447 being undergraduates. It offers a four-year B.Sc. degree programme in chemistry. In addition, there are M.Sc./M.Phil. and PhD programmes. The Department acknowledges the centrality of chemistry as a science and trains its students to take advantage of the cornucopia of contributions that chemistry can make to society. As part of its desire to encourage and motivate students to be innovative and enterprising, it has instituted the chemical enterprise development initiative (CHEDI) programme through which students are trained to develop new products. CHEDI has become the brand name for the products of the department and features prominently at any exhibitions the department participates in.

STAFFING

Academic Staff strength at the department currently stands at twenty. Out of these, one is a visiting professor who is coming in to support a new M.Sc. programme in polymer science and technology (vide infra), two are on post retirement contract, a third one is on part-time and three 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, triacylglycerol profiling of seed oils, drug analysis and drug design, 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 Acquaaah participated in the 1st Green Chemistry Congress organized by the Pan African Chemistry Network (PACN) in Ethiopia from 15th to 17th November 2010. They both made oral presentations at the Congress. Members of the department attended the 1st Pan African Chemistry Congress on Agricultural Productivity from 21st to 23rd November 2011 at the Accra International Conference Centre.

Dr. Akwasi Acheampong attended a Congress organized by the Journal of Arts and Sciences in Italy where he made oral presentation on the LCMS method developed for the analysis of triacylglycerols in vegetable oils. The Conference took place at the University of Washington Rome Center from 23rd to 27th November 2010.

Dr. J. A. M. Awudza (as team leader) , Mr. N. K. Asare-Donkor and Mr. F. K. Ampong (of Physics Department, KNUST) attended the 1st Leverhume-Royal Society Africa Award Holder Meeting which was organized by the Royal Society (UK) and the Tanzania Academy of Sciences in Dar es Salaam, Tanzania from 5th to 6th December 2010. Dr. J. A. M. Awudza and Dr. S. Osafo Acquaaah 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 16th to 21st January 2011.

Mr. G. Darko went on an exchange programme on electrospinning at the Textile Department of Ghent University in Belgium from 2nd May to 31st July, 2011. He also went on an exchange programme on Morphological and porosity studies at the Laboratory of Prof. J. O. Okonkwo at Tshwane University of Technology in Pretoria, South Africa, from 14th to 28th March, 2011. Mr. G. Darko has also benefitted from a training programme on "Upgrading of food testing skills of food processing professionals" under the aegis of India Africa Forum Summit (AIFS)-II at Shriram Institute for Industrial Research in Delhi, India, from 1st to 15th February, 2012.

The department is making steady progress in the training of postgraduate students. Dr. Akwasi Acheampong (supervised jointly by Dr. S.K. Twumasi, Prof R. K. Adosraku and Prof Alain Tchaplà) successfully defended his thesis in June 2011 and was subsequently awarded a PhD degree in November 2011. Mrs Trinity Ama Tagbor (of the BRRI) was also awarded her PhD degree in November 2011 after a successful defense of her thesis. One MSc students were graduated in November 2011 after successfully defending their thesis. At least five MSc students 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 and it's for a three year period (2009 to 2014). The second a fund from the prestigious Leverhume-Royal Society Africa Award Scheme for a research project entitled "Developing Internationally Competitive Research on Solar cell material at KNUST";

The value of this fund is £150,000 and is to be used over a “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 Leverhume Royal Society Africa Award Scheme for a research on “Molecular Modelling for Energy Efficiency” and this is also worth £150,000. 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 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 last academic year. Another staff from Manchester University, Prof O’Brien visited the department on two occasions, i.e. 2011 and 2012.

Prof O’Brien has been lecturing the MPhil Students via Skype. 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 this year.

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 models 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 Yeats 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 (PACN) indicated that she was making an arrangement for the donation of some equipment to the Chemistry Department. We are in touch with the organization which is making the donation.

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 also get the opportunity to travel to Germany on that programme to gain some practical experience in some German institutions. 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 last year and is expecting one German student this academic year on the IAESTE programme.

IAESTE has recognized 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 centralized laboratory.

SERVICE TO COMMUNITY

Members of staff in the department offer a variety of services to community at local, national and international levels.

- a) Prof. A.A. Adimado. He 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.

- b) 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.

- (c) Dr. J. A. M. Awudza is a reviewer for JGSA. He also serves in the following capacities:
 - (i) Member, the International Scientific Committee for the International Congress on Agricultural Productivity, organized on 21st to 23rd November 2011 by the

- Pan African Chemistry Network with support from the Royal Society of Chemistry (UK) and Syngenta (UK).
- (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 center, College of Engineering, KNUST and member of the Management Board of the Centre. In that capacity, he supports Biofuel based industries in Ghana.
 - (iv) Chairman of the safety committee of KNUST.
 - (v) Chairman, Board of Trustees, Centre for the Development of People, a national non-governmental organization.
- (d) Mr. G. Darko is a resource person for the WAEC. He also serves in the following capacities:
- i. He is Senior Course Tutor at the Centre for Continuing Education at UCC, Cape-Coast.
 - ii. Reviewer of 16 Refereed journals
 - iii. Serves on the Editorial board of Environmental Monitoring and Assessment as an Editor.
- (e) Mr. E. E. Kwaansa-Ansah is a resource person for the West Africa Examination Council (WAEC).
- (f) Dr. S. Osafo Acquaaah is President of the Ghana Chemical Society. He also serves in the following capacities.
- i. A reviewer for the GJGS,
 - ii. A member of the University Centre for HIV/AIDS studies.
- (g) Mr. N. K. Asare-Donkor is a resource person for the WAEC and the Vice President of the Ghana Chemical Society, KNUST branch.
- (h) Mr. G. K Tuani serves as resource person for WAEC.
- (i) Dr. Akwasi Acheampong is an executive member of the University Teachers Association of Ghana (UTAG-KNUST). He is also a resource person for second cycle and tertiary institutions, organizing talks and seminars on topics like ‘Achieving Academic Excellence’, ‘Effective Time Management’, ‘Career choices’, ‘Overcoming youthful challenges’ etc.
- (j) Mr. Joseph 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 Drug Board, Guinness Ghana 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

EQUIPMENT

The department has recently acquired the following instruments;

1. Jenway PFP7 Flame Photometer for determination of Na^+ , K^+ , Li^+ , Ca^{2+}
2. Wagtec Photometer 5000 series (Water analyzer) for determination of NO_3^- , NO_2^- , NH_3 , SO_4^{2-} , SO_3^{2-} , Mn^{2+} , Fe^{2+}/Fe , Fe^{3+} , F^- , Cl_2 , SiO_2 , PO_4^{2-}
3. Automatic Mercury Analyzer.

The department is in the process of reviewing its programmes at both the undergraduate and postgraduate levels.

DEPARTMENT OF COMPUTER SCIENCE

INTRODUCTION

The Department of Computer Science is one of the Department's in the College of Science. Presently the Department of Computer Science performs two main functions, namely academic and the provision of computing services. In addition, faculty members are involved in various research activities and software development.

Since the establishment of the Department two decades ago, the Department tops the list of graduates produced since 1962 by the College of Science with a total number of over 2500 graduates in applied sciences.

ACTIVITIES

Teaching

The Department currently runs a 4-year undergraduate degree programme in Computer Science and an MSc/Mphil in Computer Science as regular, MSc/MPhil in Information Technology, a 4-year degree programme in Information Technology and a 2-year top-up degree programme (by distance learning mode) also in Computer Science with emphasis on systems development, networking and computer programming. The programmes prepare students adequately for careers as system programmers, software engineers, system analysts, system designers and application programmers. The tuition given to students is such that they can also set up their own computer businesses after completion. In addition to these, the Department offers service lectures in computer appreciation and computer programming to students in other departments of the University. The undergraduate student population in the Department is over 500 with the breakdown as follows.

Regular

First year	-	158
Second year	-	142
Third	-	165
Fourth		73

225

Postgraduate	-	30
Distance Learning		
Undergraduate	-	93
Postgraduate	-	92

The Department will soon set up a state-of-the-art Computer Laboratories for use by students and members of staff. It is hoped it will be ready before the commencement of the 2012/2013 academic year.

Teaching Staff

During the 2011/2012 academic year, the Department was able to attract two PhD holders, in the persons of Dr Kofi A. Appiah and Dr Osei Adjei, and one MSc holder in the person of Mr Twum Frimpong. Also, Dr Najim Ussiph who was granted study leave and who successfully defended his PhD degree programme in early January has since returned to the service of the University. Currently, the staff strength is Fifteen (15) with a student-staff ratio of about 1:40. Of the number of teaching staff, five (5) are PhD degree holders, the highest number the Department has ever had. Mr Michael Bosu has been granted study leave this academic year to pursue his PhD degree programme abroad and all things being equal he is expected to return to service of the Department during 2014/2015 academic year. The full list of members of staff is as follows:

Dr J. B. Hayfron-Acquah	Senior Lecturer/ Head
Dr Osei Adjei	Senior Lecturer
Dr M. A. Asante	Lecturer
Dr N. Ussiph	Lecturer
Dr Kofi A. Appiah	Lecturer
Mr D. A. Asamoah	Lecturer
Mr C. Osei-Bonsu	Lecturer
Mr J. K. Panford	Lecturer
Mr K. A. Pabbi	Lecturer
Mr S. A. Agyapong	Lecturer
Mr J. G. Davis	Lecturer
Mr Twum Frimpong	Lecturer
Mr E. O. Oppong	Technical Instructor
Mr F. O. Peasah	Technical Instructor
Mr M. F. Bosu*	Lecturer
* On study leave	

Mr Francis D. Nii-Odoi, Chief Technician of the Department went on retirement at the end of September 2011 after rendering services to the Department and the University as a whole for almost four decades. The Department will forever be grateful for the services rendered by Mr. F.D. Nii Odoi.

Research

Current research being undertaken in the Department is in the area of software engineering, Computer Networking, Data Communication and Optimization. Research is also being

undertaken in the area of computer aided learning with special emphasis in the use of computers in instruction at the primary and the secondary levels of the education system of the nation. The Department is also researching into computer and Internet networking and security issues.

PUBLICATION

During the year under consideration, members of staff were able to publish some of their research works in international journals.

SERVICE TO COMMUNITY

The Department organizes computer appreciation programmes for members of staff of the University and other people from outside the University. During the year under consideration, the Department, together with sister Department in the College of Science, organized a one-week workshop to train Senior High teachers. This kind of programme normally takes place during the long vacation. The students of the Department also embark on Computer Awareness programmes every year to educate students in first and second cycle institutions on Information and Communication Technology. The Department is making arrangements to help the government on her ICT programme for the southern sector. Some members of staff have also written ICT books that have been approved by Ghana education Service for use as textbooks for Junior and Senior High Schools for their WASSCE/SSSCE Core and Elective ICT subjects.

Some members of the Department continue to serve the community in the following areas:

(i) Consultant to the **National Accreditation Board** in assessing Computer Science programmes and its related areas for accreditation (Dr J. B. Hayfron-Acquah).

(ii) IT Consultant to KNUST and IT Advisor to Christian Services University College (Dr M. Asante and Dr J. B. Hayfron-Acquah)

(iii) External Examiners/moderators to sister universities: University of Ghana, University of Education-Kumasi Campus, University of Cape Coast, Regent University College of Science and Technology, All Nations University College, Advance Institute of Technology (AIT), University for Development Studies, Valley View University, Christian Services University College, Kumasi Polytechnic – (Dr J. B. Hayfron-Acquah, Dr M. Asante, Mr K. A. Pabbi and Mr J. K. Panford)

(iv) As referee to Local and international journals (Dr M. Asante and Dr J. B. Hayfron-Acquah)

(v) Motivational or guest speakers in a number of institutions (Dr J. B. Hayfron-Acquah, Dr M. Asante, Mr E. Oppong and Mr M. Bosu).

(vi) Some members of staff have written ICT books that have been approved by Ghana Education Service to be used by Junior and Senior High Schools (Dr J. B. Hayfron-Acquah, Mr J. K. Panford, Mr M. F. Bosu, Mr D. A. Asamoah, Mr J. G. Davis and Mr N. Frimpong).

(vii) Republic Hall council member (Dr J. B. Hayfron-Acquah)

(viii) Queens Hall Senior Tutor (Mr J. G. Davis)

(ix) Auditing of Tertiary Institutions on behalf of the National Accreditation Board (Dr J. B. Hayfron-Acquah)

(x) Committee members – All members of Staff

(xi) Consultancy Services – All members of staff

APPRECIATION

This year, a number of institutions (industry) have come to interview our final year students for employment. The growing number of institutions, especially in Accra, interested in our products is a clear indication that our students are seen as the best.

(i) The Department is very grateful to SSNIT and Vodafone who continue to take a good number of our continuing students on vacation attachments and a good number of our final year students for National Service and subsequent employment.

(ii) The Department is grateful to Indiana University of Pennsylvania (IUP) for donating books to the Department from time to time.

(iii) We are also grateful to **SAMBUS**, a leading dealer in Computers and Computer accessories who since 2009 has been donating one Computer laptop every year during this same event to our best graduating student.

(iv) The Department is very grateful to the entire staff of **Meltwater Entrepreneurial School of Technology**, a leading software development and training company in Ghana for organizing a workshop for students of the Department and their willingness to employ some of them. We are also grateful for their willingness to accept a number of our students each year for vacation training.

(v) The Department is also very grateful to **Guinness Ghana Limited**, who, from time to time donates Computers and other computer accessories to the Department.

(vi) The Department is very grateful to **Superlock Technologies Limited (STL)**, **SAMBUS**, **SG-SSB (Accra)**, **SIC (Accra)** and **BSystems (Accra)** who have agreed to take a good number of our students to do their Vacation Training during holidays.

(vii) **Ghana Ports and Harbours Authority, Ghana Telecom, SSNIT, Tema Oil Refinery, VALCO, VRA** and **Ghana Immigration Services**, the Department is grateful to you all for allowing our students to visit your institution during their field trips.

(viii) The Department, once again, is very grateful to **Superlock Technologies Limited**, who is considering instituting award to our best female graduating student and the overall best students.

(ix) During the year under consideration, representatives from University of Lincoln, UK were here on two occasions to give seminar to our students. We are grateful to the entire University of Lincoln for the opportunity.

(x) The Department is grateful to Professor Ken Goldberg of University of California, Berkeley College of Engineering and School of Information who gave a seminar to staff and students of the Department.

(xi) The Department is very grateful to **Mr Francis Kofi Mensah Jnr** of Detecware and **Mr Eric Yeboah** of Security Video Systems (STVS) who jointly organized a one-day workshop for staff and students of the Department.

(xii) Finally but not the least, the Department is grateful to **Mr and Mrs Lawrence Owusu**, both former students of the Department, for donating assorted Computer Books during the academic year to the Department.

CONCLUSION

The Department of Computer Science has made significant progress, particularly in introducing two MPhil programmes, one undergraduate programme and a top-up programme. The Department will continue to make progress in introducing more innovative programmes at both the graduate and the undergraduate levels, attract more teaching staff and increase students' enrollment in the Department, increase research output and establish more industrial and educational linkages.

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, BSc in Statistics, MSc in Industrial Mathematics, as well as MPhil and PhD in Mathematics

There are currently 993 undergraduate students in the Department with over 448 pursuing the BSc in Mathematics, 478 the BSc in Actuarial Science and 67 in BSc Statistics. In addition to this, there are over 240 graduate students pursuing programmes in both Mathematics-and Industrial Mathematics.

In the 2012 /2013 academic year, new programmes in MPhil levels will be introduced. Other programmes envisaged for the near future include Masters and PhD in Biostatistics, Actuarial Science, Industrial Finance and Financial Mathematics to be delivered both in the distance and regular modes.

This year (June 2012), over 80 students will graduate with the BSc degree in Mathematics, over 60 students will graduate with the BSc degree in Actuarial Science and over 30 will graduate with Masters Degrees in Mathematics and Industrial Mathematics with 10 of

them being distance learners.

ACADEMIC STAFF

With a highly qualified and experienced academic staff, the Department boasts of staff strength of 23 (of which one is a women) with three currently on study leave pursuing doctoral programmes. Ten (10) 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 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 specialization 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 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

The total student number is 491. The breakdown is as follows:

BSc (Physics)

First Year	-	100
Second Year	-	115
Third Year	-	93
Fourth Year	-	85
Total		393

BSc (Meteorology and Climate Science)

First year	-	27
Second Year	-	30
Third Year	-	14
Fourth Year	-	12
Total		73

Postgraduate Students

MSc/MPhil	-	25
PhD	-	5 (Staff)

ACTIVITIES

Teaching

Undergraduate Programme

The Department has restructured the Physics Programme 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 the same 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. After graduation, all successful students are awarded BSc (Physics) degree.

Postgraduate Programme

The Department also offers a postgraduate programme, which is applied physics-based, in the following areas:

- Condensed Matter Physics (Solid State Physics and Materials Science)
- Applied Geophysics
- Applied Nuclear Physics
- Environmental Physics
- Medical Physics
- Soil Physics
- Theoretical Physics
- Electronics

WHITTAKER SCHOLARSHIP AWARD

The Department of Physics continues to benefit from the Whittaker Scholarship Award for female students, due to the generosity of the late Mrs. Rose Whittaker who bequeathed a sum of money for the scholarship in memory of her husband, the late Prof. Whittaker, a former Head of the Department of Physics and also a former Dean of the then Faculty of Science.

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

Senior Members (teaching staff) of the Department have been engaged in research activities in the following areas:

Geophysics Research Group

- use of seismics and petrophysics in the evaluation of the hydrocarbon potential of some Ghanaian sedimentary basins
- enhancing sustainable development of the Lake Bosomtwi Basin using geophysical techniques (electrical resistivity tomography (ert), ground penetrating radar (gpr), seismics, EM & Magnetics)
- global environmental change research – a case study of the Lake Bosomtwi crater area
- monitoring soil and groundwater contamination/pollution using geophysical methods
- fractures detection in subsurface investigations using resistivity, EM, GPR, Seismic techniques and radon mapping
- groundwater and mineral exploration
- site investigation/geotechnical studies using geophysical methods
- pavement investigation of major roads in the Kumasi Metropolis using the ground penetrating radar (GPR)
- detection of underground utility cables/pipelines using geophysical methods
- petrophysical characterization of rocks from some Ghanaian formations
- geological and structural interpretation of the main gold belt of Ghana using airborne magnetic and radiometric data
- use of integrated geophysical methods in determining the depth extent of the jasper deposit within the Buem formation of Ghana

use of seismic broadband digital array network to study the crustal structure of west africa

Materials Science and Technology Group

- a. Zeolite Science and Technology
 - Synthesis of zeolites from chemical reagents, agricultural wastes and from bauxites
 - Characterizations of zeolites and other minerals

Application of zeolites in: arsenic removal from industrial waste waters, ammonia removal from industrial and municipal waste waters, desalination of sea water, crude oil refining, removal of other heavy metals, and anti-microbial zeolites production for disinfection of drinking water.

b. Ceramic Materials

- Production of advanced ceramic materials for medical use (orthopaedic joint replacement, prosthesis, bone implants, etc.)
- production of advanced ceramic materials for automotive catalytic converters

Solid State Physics Research Group

- The growth of thin films for photovoltaic applications
- Ferroelectric materials medical, sensor and memory applications
- Properties of ferroelectric materials
- Dye sensitized solar cells
- Photovoltaics and fuel cells (PEM)

4. Environmental Physics

i. Monitoring of soil pollution in the Suame-Magazin area using x-ray fluorescence (XRF) spectroscopy methods

5. 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 (2010 to 2013).

DONATION OF EQUIPMENT FOR THE METEOROLGY AND CLIMATE SCIENCE PROGRAMME BY THE GERMAN GOVERNMENT

The German Government, through the German University Service in Wisbaden, has donated some modern weather equipment to Dr. Leonard Amekudzi for use for the teaching and learning of students of the Meteorology and Climate Science programme. The equipment is worth about **Euro 36,000.00**. The equipment includes a modern automatic weather station (AWS) that is powered by solar. The automatic weather station has been installed at the Animal Science Department of KNUST.

THE 2ND AFRICAN SCHOOL OF FUNDAMENTAL PHYSICS AND ITS APPLICATIONS

The Department of Physics will be hosting the 2nd African School of Fundamental Physics and its Applications. The African School of Fundamental Physics and its Application has been established to build capacity to harvest and interpret the results of current and future physics experiments with particle accelerators, and to increase proficiency in related applications, such as medicine, and technologies, such as IT.

The school is being organized in a Sub-Saharan African country every second year and it is based on a close interplay between theoretical, experimental, and applied physics. The first school took place in Stellenbosch, South Africa on 1-21 August 2010 and the second edition of the biennial school in KNUST, Kumasi, Ghana from July 15 to August 4, 2012.

INSTITUTE OF DISTANCE LEARNING

INTRODUCTION

The Ghana Government policy on Tertiary Education provides the policy framework for Ghanaian Universities to increase access to tertiary education. In response, the KNUST has taken up the challenge of increasing access to tertiary education and training through the Institute of Distance Learning (IDL). Established some seven years ago as a viable compliment to the

traditional lecture room education, the Institute has grown steadily in terms of programmes on offer and the student population.

PROGRAMMES ON OFFER

From little beginnings with two (2) programmes, IDL currently runs twenty-two (22) programmes; fifteen (15) undergraduate and seven (7) postgraduate programmes from the various Colleges of the University. IDL also has two(2) special MBA/MPA programmes from the Common Wealth of Learning-

- Commonwealth Executive Masters in Business Administration (CEMBA)
- Commonwealth Executive Masters in Public Administration (CEMPA)

The Institute is also introducing the new and demand driven post-graduate programmes listed below:

- MSC/MPHIL - Food Quality Management
- MSC/MPHIL/PGDIP - Industrial Finance And Investments
- MSC/MPHIL - Actuarial Science
- MSC/MPHIL - Development Management
- MSC/MPHIL - Educational Innovation and Leadership Science
- MSC/MPHIL/PGDIP - Business Consulting and Enterprise Risk Management

Emphasis in the Undergraduate Programmes is now shifting from the four (4) year programmes to the two year top-up programmes and patronage, especially the B.Sc. Business Administration, B.Sc. Mechanical Engineering, B.Sc. Construction Technology and Management and BSc. Quantity Surveying and Construction Economics is overwhelming.

Besides these programmes the Institute is also running top-up programmes in

- B.Sc. Statistics
- B.Sc. Mechanical Engineering
- B. Sc. Geomatic Engineering
- B. Sc Agric Engineering
- B. Sc Electrical & Electronic Engineering
- B. Sc. Telecom Engineering
- B. Sc. Computer Science
- B. Sc. Computer Engineering

Four (4) year Undergraduate programmes on offer at IDL are:

- BSc. Information Technology
- BSc Sociology and Social Work
- BSc. Actuarial Science

STUDENT POPULATION

IDL has Four thousand four hundred and twenty-nine (4,429) Undergraduate students and Two thousand one hundred an seventy-seven (2,177) Postgraduate students pursuing various programmes, bringing the current total number of students to Six Thousand, Five Hundred and

Ninety-Six (6,596) .This figure is over 100% increase on the student population up till 2009/2010 academic year.

STUDY CENTRES

IDL operates in all the Regional Capitals in Ghana. Programmes that are run at each centre are determined by the peculiar needs and choices of the applicants. In addition, Tarkwa Centre has been running a pilot in a modular mode since the beginning of the 2011/2012 academic year. The great interest shown in IDL in Accra and its environs has necessitated the opening of additional centres in Tema and Pokuase.

FACILITATION

Facilitation is done by KNUST Lecturers and others with the requisite qualification and training at all the centres. Facilitation takes place on weekend to suit the working class which is our main target group. Currently, there are about *three hundred and fifty* (350) facilitators throughout Ghana.

OUR AMBITION

IDL's greatest desire is to see its dream of the Accra and Kumasi-City campuses materialize. It is expected that the two campuses would be completed soon, to enable KNUST to meet its target set for in the Strategic Plan, PLAN 2K14 ie. to enroll 40,000 students by the year 2014.

IDL again hopes to embrace the virtual classroom system by 2015.

OUR PROJECTIONS

New Centres

In its drive to extend its frontiers throughout Ghana, IDL has targeted Techiman, Obuasi and Agona Swedru as prospective centres and is working towards starting operations there.

Off-Shore Campus

IDL is also working at establishing off-shore centres. A pilot project has begun in Dubai with the Mechanical Engineering undergraduate (Top-Up) programme. The programme which is about 70-80% on-line is being used to pilot the virtual classroom platform to be replicated in other off-shore campuses in the near future.

ADMISSIONS

With new programmes coming on board the number of Postgraduate student intake is projected at two thousand (2,000) for the 2012/2013 academic year. It is anticipated that the total Student Population would rise ten thousand (10,000) by the close of the 2012/2013 academic year

Collaborations

CHINASOFT/SINOSOFT- Chinese Software Company is ready to deploy ICT equipment and software in Learning Management System and Laboratories to 18 potential IDL centres throughout Ghana. The project is to be financed with a grant of about 40 million US Dollars.

E-Learning

The E-Learning Centre of IDL facilitates five (5) programmes for three (3) Indian Universities. IDL is also expected to host an Indian Software Engineer for one year, who would introduce the platform to beam synchronously and asynchronously lectures to all our patrons at their door steps.

Internet Access

The institute has signed a Memorandum of Understanding (MOU) with Vodafone that supplied 1,500 pieces of customized dongles to IDL for ease of access to IDL's learning management platform. With the vision of using the virtual classroom system it is hoped that IDL will make this provision available to every distance learner.

New Unit in IDL

IDL is working at establishing a Centre of Excellence as a unit within IDL for the development and management of demand driven short courses and programmes as well as Technical Trade Courses.

GRADUATING CLASS

IDL is graduating a total of Four Hundred and ten (410) students made up of One hundred and ninety-seven (197) Undergraduate students and two hundred and thirteen (213) Postgraduate students.

- The undergraduate students are drawn from Colleges of Science, Engineering and Planning & Architecture.
- The Postgraduate students are also drawn from the College Science and the Commonwealth of Learning.

ACKNOWLEDGEMENT

The Institute wishes to use this opportunity to thank all who have contributed and continue to contribute to make the Distance Learning a success story.

SCHOOL OF GRADUATE STUDIES

The School of Graduate Studies was established in 2002 following the restructuring by the University Council. It had existed 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) are the training and development of graduates at higher degrees to acquire specialized skills in Science and Technology. Besides, such graduates would be enabled to provide appropriate research initiative and leadership in industry, commerce and other sectors of the national economy.

Efforts are being made in the Departments and Faculties to develop graduate programmes, which are relevant to the promotion of economic, social, scientific and technological advancement of Ghana.

It is noteworthy that material and human resources are being mobilized to ensure maximum utilization of available potential through courses and programmes organized and coordinated by the School of Graduate Studies.

GRADUATE PROGRAMMES OFFERED

The School of Graduate Studies run more than eighty courses 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

INTRODUCTION OF NEW PROGRAMMES IN THE YEAR UNDER REVIEW 2011/12 ACADEMIC YEAR

The year under review saw the introduction of the following programmes by the various departments.

1. Master of Science (MSc) Degree in Meteorology and Climate Science by the Department of Physics.
2. Doctor of Philosophy in Sociology by the Department of Sociology and Social Work.
3. Master of Philosophy (MPhil) Sociology.
4. Postgraduate Diploma in Sociology.
5. Master of Science (MSc) Speech Language Pathology by the Department of Eye, Ear, Nose and Throat.
6. Master of Science (MSc) Audiology by the Department of EENT.
7. Natural Resources and Environmental Governance by the Department of Silviculture and Forest Management.
8. Master of Science in Mortuary Science and Management by the Department of Anatomy.
9. Master of Science (MSc) Pharmaceutical Technology by the Department of Pharmaceutics.
10. Master of Philosophy in Urban Management Studies

11. Doctor of Philosophy in Soil Science
12. MSc Procurement Management
13. MSc Construction Management

NEW PROGRAMMES APPROVED BY THE SCHOOL OF GRADUATE STUDIES BOARD FROM THE INSTITUTE OF DISTANCE LEARNING (IDL).

1. MSc/MPhil/Postgraduate Diploma n Business Consulting and Enterprise Risk Management.
2. MSc/MPhil Educational Innovation and Leadership Science.
3. MSc. Development Management
4. MSc/MPhil Logistics and Supply Chain Management
5. MPhil/MSc/PG.Dip. Industrial Finance and Investments
6. Msc/MPhil Oil and Gas Management.

ENROLMENT

The table below shows the number of students who were admitted during the 2011/2012 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

ACTIVITIES

The SGS, which acts as a co-coordinator to all the Departments that 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.
- Administers and processes applications for prospective applicants.
- Organizes interviews for applicants seeking admission into various programmes, issues admission letters and register students for the programmes into which they have been admitted.
- Organizes 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.
- Organizes 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 organizations. 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 fully 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 under statute 45 of the University with the mandate to provide the needed and necessary welfare support services for students during their period of study at KNUST. The Office is in regular dialogue with the Vice Chancellor's Office, all Academic units from Provosts to Head of Departments, the Registry, the Finance Office, the Protestant and Catholic Chaplaincies, the Health Directorate, the Security Services (internal and the local police), the Halls of Residence and the Private Hostels . It provides a platform for an intimate interaction between Students' Leadership –Students' Representative Council (SRC), Graduate Students' Association of Ghana (GRASAG) and a host other student organizations on one hand and the University on the other.

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 rules and regulations, as well as providing 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 Members strength of the Office of the Dean of Students is as follow:

- | | |
|---------------------------------|---|
| 1. Dr. Kofi Owusu-Daaku | Dean |
| 2. Dr. Rudith King | Vice Dean |
| 3. Ms. Josephine Djampim | Senior Assistant Registrar |
| 4. Mrs. Victoria De-Graft Adjei | Coordinating Counsellor |
| 5. Mr. Joseph Asamoah-Gyawu | Counsellor |
| 6. Mr. Kofi Yamoah | Senior Counsellor (on post retirement contract) |

In addition, there are four (4) Senior Staff, twenty eight (28) Junior Staff and twenty eight (28) National Service Personnel. The outfit is further supported by other auxiliary staff from the National Youth Employment Programme (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. Students Representative Council Affairs
 - v. Student Housing and Residence Life
 - vi. Students Conduct and Discipline
 - vii. Students Financial and Support Services (with Student Affairs)
 - viii. Immigration services for International students (with Students Affairs and Ghana Immigration Service)
 - ix.

ACTIVITIES

Highlights of the 2011/2012 academic year activities included the following service areas:

HALL VISITATIONS

Prior to the main visitation, the National Service Personnel from the Office were sent out in groups to conduct a survey on problems and immediate challenges facing students in the halls. Subsequently, a Team from the Office, including the Dean, Vice Dean, and one of our Counsellors held interactive meetings with residents of the Eight Residential Facilities on campus.

The purpose of the meeting was to achieve the following:

- Deepen collaboration between the Office and the Students
- Be abreast with common and pressing issues in the halls and help find corrective measures directly or assist in finding them elsewhere

Among the general concerns raised by students during the visitation were the following:

- Poor lighting system on and general sense of insecurity at night
- Faulty Internet services
- General unhappiness about posting of examination results bearing names of students on public notice boards
- Theft cases in their rooms and faculties
- Limited spaces for private studying
- Insufficient water supply
- Insufficient tables and chair in the classrooms

Copies of the final report have been presented to the Vice Chancellor and the managers of the facilities.

ORIENTATION/TRAINING /WORKSHOPS

The Office organized a number of orientation and training programmes during the year.

FRESHER'S ORIENTATION

Every year, the Office of the Dean of Students leads the organization, with other arms of the University, of Fresher's Orientation. During these sessions a number of critical presentations are made including those from the Health Services, the Security and Fire Services among others. The Office itself makes two presentations during this period. The first is the organization of the Office of the Dean of Students and the general services available to students, and the second is specifically on Guidance and Counselling Services available to students.

FINANCIAL TRAINING FOR EXECUTIVES OF STUDENTS REPRESENTATIVE COUNCIL

The purpose of the training was to foster good financial management skills and proper records keeping in order to reduce the rate of embezzlement of students' funds by student leaders and to make the leaders accountable for their deeds.

ORIENTATION FOR MALE SENIOR MEMBERS OF THE UNIVERSITY ON MENTORSHIP

The participants were eighty one (81) male lecturers of the University. The purpose of the two-day orientation was to train male senior members as mentors to assist students with their

numerous challenges. For the majority of the participants, the orientation served as ‘an eye opener’ because it provided the opportunity for them to understand some of the crucial challenges facing a large population of our students as they manoeuvre through the maze of University education.

The topics treated included:

- *Concept of Gender and Gender Mainstreaming in the lecture theatre*
- *Basic Counselling and Techniques*
- *Sexual Harassment and Handling its Victims*
- *Unsafe Abortion: A Major cause of Death among the youth*
- *A survey of Sexual Harassment in Tertiary Institutions in Ghana.*

GEBSS ORIENTATION FOR NATIONAL SERVICE PERSONNEL AND FINAL YEAR STUDENTS

The Office and the Students Representative Council collaborated to facilitate a workshop organized by the Graduate Business and Support Scheme (GEBSS). The programme aimed at equipping graduates with Business focused skills, experiences, exposure and support to enhance their potential for entrepreneurship.

UNILEVER GHANA LIMITED ORIENTATION

The year under review also witnessed a successful partnership with Unilever Ghana Limited to introduce the “U” inspire programme for final years and National Service personnel. The programme was designed to inspire all final year students and National Service Personnel as they step out into the world outside the University. The session discussed “High Performing Mindset” which looked at goal definition and setting to be an achiever after school.

THE PRICEWATERHOUSE COOPERS RECRUITMENT PROGRAMME

The Office, guided by its mission to making direct impact and shaping the lives of its students, facilitated a recruitment session by the Price Waterhouse Coopers this year. The Organization is a world’s leading accounting and career offering firm which recruits highly qualified personnel for the job market.

MEDIATIONS

The Office played key roles in helping to arbitrate and resolve a host of issues of students. It assisted in the process of forming committees of enquiry and facilitated in some cases, work of the committees once set up by the Vice Chancellor. The Office also directly assisted in resolving numerous theft, fraud and minor alleged assault cases. At the end of the 2011/2012 academic year, a total of one hundred twenty two (122) such cases were reported to the Office. Seventy-eight (78) cases were resolved with thirty-four (34) outstanding to be worked on in the next academic year.

SRC ELECTIONS AND TRANSITION TO NEW LEADERSHIP

In the past two years the office has found the need to play a key role in SRC elections which has become increasingly acrimonious because of the perception among students that external partisan influence raise the stakes higher. The Office ensures the sanctity of the ballot papers and

provides logistical support including transport with the support of all the College Provosts. Meals are provided at cost to the office to the observers of all the candidates. In the year some training was given to the members of the students Electoral commission on biometric voting. It is hoped that in the coming year biometric voting will be implemented to reduce cost. In spite of the support, a court injunction placed by some students delayed the handing over process until the weekend of vacation. The office ensured a strict adherence to the students' constitution during the transition into the new leadership

LEADERSHIP TRAINING FOR NEWLY ELECTED STUDENTS LEADERS

As part of efforts to help make student leaders responsible and accountable to students as they take on their new mantles, the Office of the Dean of Students runs an annual orientation for SRC Executives to equip them in administrative skills, financial management and all other necessary requirement that may be deemed necessary to them as leaders. This year's orientation was under the theme "Excellence in student leadership: the challenge of integrity." An average number of ninety (90) student leaders participated in this year's program. Presentations made included;

- *Character formation and integrity of a leader,*
- *Integrity and commitment of a changed leader,*
- *Financial Management; Preparation of financial dairy/ keeping within the budget/fiscal prudence and priority setting*
- *Insight into Student Governance: Perspective of past students leaders*
- *Negotiation Skills(Approach to boards and committees)*
- *Time management and Academic Excellence of a student leader*
- *Gender and leadership,*
- *Applying ICT to governance,*
- *Software discretion in leadership; power/rights/manners and etiquette,*
- *Moral Vision; the foundation for leadership in Africa*

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 however, the Counselling Unit has undertaken various activities and programmes beyond the general Counselling Services. It assists students and the entire university community to maximize the use of the 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 COUNSELLING SERVICES

The Counselling Unit, during the 2011/2012 academic year, rendered the following services;

- i. psycho-educational counselling
- ii. psychotherapy
- iii. social/behavioral counseling
- iv. providing adequate liaison between the office, faculty/departments and hospital on medical issues.
- v. finding solutions to academic and social issues

The psychological cases totalled one hundred and nine (109) which included

- i. personality disorders,
- ii. various mood swings of depression,
- iii. schizophrenia,

Psychosocial cases include counseling clients to overcome the hangover from

- i. broken homes,
- ii. broken relationships,
- iii. bereavement,
- iv. shocks,
- v. sexual disorientation and
- vi. suicidal attempts, etc.

The Counselling Unit referred students to the KNUST Hospital for treatment when the presenting problems were of medical appearance and was supported by the hospital in referring psychiatric cases to Komfo Anokye Teaching Hospital for further evaluation and treatment. Similarly, the Unit also received a sizeable number of students on referral by the KNUST hospital for counseling.

Academic problems totalled twenty (20) during the year reporting and associated issues however represented the highest among the service delivery. The majority of students expressed difficulty coping with their programmes and some sought to change or defer their programmes for a variety of reasons.

Acute financial and accommodation problems totalled nine (9) represented significant number of request for immediate support. For some students, they were equally assisted on how to assess 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.

HOSPITAL VISITATION

The Counseling Unit liaised with the University Hospital by monitoring inpatient hospitalization of students. The peer Counsellors tracked and visited students during hospitalization and performed case management services with follow up visits on those who presented 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.

SUPPORT FOR PROSPECTIVE UNIVERSITY APPLICANTS

The Office provided services to prospective applicants to make suitable programme choices. Applicants therefore received counseling on how to select appropriate programmes based on qualification, content and expectation of programmes and the job market with respect to frustration in employment. This service is aimed at reducing the rate of frustration of applicants

who mistakenly disqualify themselves due to ignorance. The total number of applicants who had sought the services of the Unit as at reporting was forty eight (48).

STUDENT ORGANISATIONS DIRECTLY SHEPHERDED UNDER THE OFFICE

The Office is responsible for screening the over 50 student organization for final approval at the Residence Committee. Such organizations are prepared for screening by the Office of Clubs and Societies Commissioner of the SRC. Once approved, these organizations have the legal right to use University facilities for meetings. Beyond these however, there are three organizations that receive some direct support from the office

PEER COUNSELLORS

The Counseling Unit trained and managed the Peer Counseling Group to bring counseling to the door-step of students. They referred cases to the Unit and also assisted their colleagues in overcoming some of their personal difficulties.

An example is one peer counsellor called Miss Salome Sackey, a final year student of Economics who happened to be the roommate of a third year student of Agriculture, in a rented place at Ayeduase. Through assessment of the Agricultural Student, it was revealed that, Salome had, been responsible for taking care of her roommate for the past two years, till the end of this academic year. She cooked, fed her and, provided her with some financial support by paying of her rent and utility bills, among others. The needy student came to the Counseling Unit for further financial assistance to enable her continue with her education since her Good Samaritan will no longer be in school for the 2012/2013 academic year. As a Peer Counsellor, Miss. Sackey saw the need to help her roommate who was in need in her own small way. These and many more are what the Peer Counselors have contributed to the education of their colleagues.

STUDENTS WITH DISABILITY

Another landmark success this year has been the coordination of the activities of the Students with Disability under the Office. A national service person who is physically challenged was engaged to be a liaison between the Office and the students. The rationale is that such a person better understands the needs of his people, and is wholly dedicated to championing their needs. The time has come for the entire University community to fully integrate and support our colleagues realize their potentials.

ATTAINING THE PEAK (ATP)

During the year under review, the Office partnered a research Assistant from the Oxford University to engage students of KNUST on a programme aimed at raising leaders with a heart of communal service. The Office once again is leading the course in raising such leaders by institutionalizing ATP as a students' grouping on campus. The programme was under the distinguished patronage of the Vice Chancellor.

IMMIGRATION OFFICE

Under the leadership of the Vice Chancellor, the Ghana Immigration Service now has an office space at the premises of the Dean of Students which aim is to smoothly facilitate the processing

of residence permit for our international students and thereby curbing the annual systemic challenge of securing residence permit.

INTERNATIONAL STUDENTS AFFAIRS

The Vice Dean of Students Office provides support for the International Students. In the Year under review, a number of activities were planned and were successfully executed under the oversight responsibility of the Vice Dean of Students. Among some of the activities include the following:

- Maiden Catalyst Summit
- Health Walk/ Campaign against drug abuse and alcoholism
- ISA Academic Excellence Award
- International Cultural Day
- ISA Praise Day

For the first time, the Office had an International Student as a “Service Person” (paid from the Office by name Ogolo Peacelover I. Christian who helped with issues related to the international students.

STUDENTS REPRESENTATIVE COUNCIL

The Dean of Students continued to serve as the Secretary to the Board of Trustees of the Otumfuo (Osei Tutu II) SRC Hostel. The Hostel was recently commissioned by Otumfuo Osei Tutu II. The Office of the Dean of Students has planned to assist in the management of the affairs of the Hostel.

STUDENT HOUSING UNIT

This Unit of the Dean of Students Office 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-Residential students Facilities.

INFRASTRUCTURE AND FURNITURE

At the beginning of the academic year, all the three non-residential facilities were repainted to give them a new face-lift. Additionally, Minor carpentry, electricity and plumbing work 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 ACCOMMODATIONS

The unit continues to work with private hostel owners to ensure the safety and welfare of non-residential students of the University. This was achieved through a series of meetings held with hostel operators and physical inspection of these hostels.

STUDENTS 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 counselling, some students remained susceptible to a number of offences that did not augur well for communal co-existence.

STUDENT SUPPORT SERVICES

The Office through the Dean of Students worked with the students financial support services at the committee levels to select needy students who required financial support from the University. In addition, the Dean oversaw the operations of the students managed Ketewa Biara Nsua (KBN) fund that assists needy students. Soft loans were granted to some needy students who applied.

The Office received numerous complaints for mediation and settled imaginable proportion of disputes among students.

The Office as well as some staff (of the Dean of Students Office) sponsored some students financially through the period under review.

FUTURE PLANS

The Office of the Dean of Students intends to:

- Improve and expand present physical infrastructure to bring about efficiency and quality service delivery.
- The Office is in the process of restructuring the current staffing pattern to conform to the Dean's new initiatives towards development.

CONCLUSION

The year, under review, has produced an active engagement at all levels among our students, partners and management with beneficial results. We have had a fruitful and peaceful, yet challenging year and look forward to better years ahead for the entire KNUST community. It is hoped that our interactions with the Colleges, Students, hostels, halls of residence will expand to enable provision of better welfare services to our students

UNIVERSITY LIBRARY

INTRODUCTION

During the 2010/2011 academic year, the University Library System, which comprises the University Library and the Six College Libraries, collectively provided relevant, current and timely information in print and electronic formats to enhance teaching, research and learning and innovative training in the University. It also ensured the optimum use of the available information resources by the students, lecturers and researchers through user education programmes, workshops, seminars and training sessions for both staff and users. These accomplishments were, however, not achieved on a silver platter. The University Library System had to grapple with many challenges such as inadequate funding, lack of space, increased pressure on already over-stretched facilities and unreliable Internet access.

BOOKSTOCK

A total of 1,879 volumes of books were added to the stock of the University Library in the year under review, as compared to 3,088 volumes in the previous year. The comparatively low figure for the 2010-11 academic year could be attributed partly to the cumbersome procedure libraries in the University have had to go through to purchase books under the Procurement Law of Ghana. Out of the 1,879 volumes added to stock, 1,108 were purchased from local

representatives of renowned overseas publishers from Europe, North America and India; 541 were donations from the United Nations and two of its affiliates, WHO and FAO; 62 from the World Bank; 23 from the Bank of Ghana and 12 from NEPAD Secretariat. The University Library also received 10 publications through legal deposit while the Board of Graduate Studies sent 63 graduate theses.

PRINT JOURNALS

The University Library, renewed subscription to all the 260 journals it had subscribed to in the previous year under the Low-Cost Journals and Protecting the African Library Scheme of the Association of Commonwealth Universities (ACCU), which KNUST is a member. Under the scheme, ACU negotiates with publishers and book/journal vendors to supply books and journals to University Libraries of member countries in Sub-Sahara Africa, Asia and the Caribbeans at a discount, between 75-80 per cent of the original subscription rates.

A total of 162 journals out of the 260 subscribed was received during the period under review, while the rest arrived later. Delays in the payment for subscription renewal resulted in the late supply of some of the journals by the publishers, notably Springer. The University Library also renewed its subscription to 20 local journals. Other publications totalling 140 were received as donation from the United Nations and its affiliates like the WHO, FAO, ILO and UNESCO, as well as USAID, the British Council and the Chinese and Japanese Embassies.

ELECTRONIC JOURNALS

The University Library System relied on its membership of the Consortium of Academic and Research Libraries Ghana (CARLIGH) to increase electronic journal access by the University from 21,000 in the previous year to over 30,000. At the same time, access to academic databases also rose from 40 to 50. These databases which covered a wide range of subjects were from AGORA, HINARI, EBSCO Host, OARE, IEEE, Institute of Physics, Science Direct, Emerald, JSTOR, Sage and Royal Society of Chemistry and others.

The University went into trial access agreement with the publishers of three online electronic resources, namely ARTSTOR, Dawson Online Books and Springerlink Electronic Books. A decision is yet to be taken by the library whether or not to sign subscription agreements to full access to any of them.

LOCAL NEWSPAPERS

The University Library maintained its subscription to single copies of the major non-partisan local newspapers like Daily Graphic, The Mirror, Graphic Business from the Graphic Communication Group Ltd and Ghanaian Times and The Spectator from the New Times Corporation. The Pioneer was the only private newspaper subscribed by the library because of its local content. The Graphic Communication Group Ltd. still supplied the University Library with two complimentary copies of Daily Graphic, The Mirror and Graphic Sports

The local newspaper database was heavily patronised as usual not only by the university community, but also by tertiary students in and around Kumasi in their quest for primary information for project works and theses writing. The number of the indexed local newspaper items entered into the database increased from 55,210 in the previous year to 60,000.

PROCESSING OF BOOKS

As many as 1,326 books were processed and integrated into the existing stock of the University Library during the 2010-11 academic year. This was a decrease from the previous year's figure of 1,549 books. The distribution to the various Departments of the Library was as follows:

Lending Department	207
Reference and Research Library	136
Undergraduate Library	500
Ghana Collection	297
Women's Study Collection	2
United Nations Publications	118
World Bank Publications	<u>6</u>
Total	<u>1,326</u>

It must be noted that about six hundred and eighty two (682) books were processed, but were not integrated into the existing stock because they were sent to the bindery for their covers to be strengthened.

READER SERVICES

For the first time in the history of the University Library System, the registration of the new members in the Main Library was done electronically using the Alexandra Software as part of the library automation project. Five Thousand, nine hundred and ninety-six (5,996) new members were registered. The figure was about 37.9% higher than the previous year's four thousand, three hundred and forty-five (4,345).

The electronic method of charging and discharging books was introduced for the first time at the Issue or Circulation Desk. It was found to be faster, more efficient and reliable than the traditional manual method, which is being gradually phased out. As many as eight thousand, nine hundred and ninety-seven (8,997) books were borrowed in the year under review, with five hundred and seventy two (572) of them being recorded from the automated platform. In the previous year, eight thousand, five hundred and eighty-five (8,585) books were borrowed.

REFERENCE AND RESEARCH LIBRARY

This Library offered reference and research services to students and staff. The Research Library is a reserve collection of multiple copies of core or prescribed textbooks, which may be consulted within the Library. The Reference and Research Libraries, on the other hand, accommodates reference books in the programmes run by the University, as well as general and specialized subject Encyclopaedias and Dictionaries. Yearbooks, Calendars, Handbooks, University Prospectus and Directories are the other materials available in the Reference Library. The Research and Reference Libraries together received one thousand and fifty-four (1,054) processed books from the Cataloguing Department to replenish their stock during the 2010/2011 academic year. The comparative figures for the previous year were one thousand, five hundred and fifty two (1,552). The break-down was as follows:

Undergraduate Library	501
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Research Library	136
Ghana Collection	297
UN Collection	118
Women's collection	<u>20</u>
Total	<u>1,054</u>

A total of six thousand, two hundred and thirty-eight (6,238) publications were consulted. Out of this number, one thousand, two hundred and nine (1,209) were from the Ghana Collection, one thousand three hundred and thirty-seven (1,337) consisted of temporary reference materials while three thousand, six hundred and ninety-two (3,692) were theses.

DEVELOPMENT INFORMATION CENTRE

Patronage of the Development Information Centre was very encouraging during the 2010-2011 academic year. Lecturers, researchers and postgraduate and final year undergraduate students, as well as the general public used the Centre extensively for development-centred information about developing countries. These patrons had access to the World Bank's e-library subscriptions-based collection of nearly 6,000 books, reports, journals and working papers including: Development Outreach, World Bank Economic Review and World Bank Research Observer journals published since 1996; Development Economic (DEC) policy research working papers published since 1995; e-books and reports dating as far back as the 1970s, plus all new formal publications upon release. Fifty-four (54) of such new publications were received by the University Library during the year.

KNUST INSTITUTIONAL REPOSITORY (KNUSTSpace)

The Institutional Repository (IR) service collects, organises and provides open access to scholarly works produced by the University's faculty, staff and students. This allows the Library to preserve and provide wide online access to its scholarly and pedagogic output.

During the period under review, faculty, students and the entire university community were motivated to have web presence that reflected accurately the activities of KNUST. This contributed greatly to the University's high ranking on the Webometric ranking of the world universities, which believes in open access to research.

Over one thousand, five hundred (1,500) records put in by the IR database were nearly lost due to the breakdown of the server which holds records at the Network Operating Centre (NOC). Fortunately, the Unit in charge of the IR was able to retrieve the records after a new server had been installed and as at 31st July 2011 there were 1,720 records in the IR.

LIBRARY AUTOMATION

The library automation project, which took off in earnest in 1999 has virtually come to an abrupt end after the contractor had abandoned the project mid-stream. This interference notwithstanding, the university library went fully online with its records which can be accessed anywhere within the campus. The library also initiated moves to allow users to access all its electronic resources outside the university through the login. The Network Operating Centre has agreed to purchase a new server specifically for this new service.

The KNUST Library Open Access Catalogue (OPAC) became operational, all the six College Libraries were also connected to the server and they began to upload their records unto it. About 97% of the records of the entire KNUST Library System have been uploaded and could be accessed via the Internet.

The Library automation Project has resulted in a more reliable, efficient and faster service delivery, especially at the Issue or Circulation Desk where registration of members as well as charging and discharging of books have all been automated. Other services like reservation of books, checking for the return date of a loaned item and the placement of an item on hold for retrieval within two hours are also possible through the Internet.

The special task force set up to do data entry had by dint of hard work entered over 120,000 records in the year under review, as against 92,000 entries in the preceding year. Six computers were placed at strategic locations within the University Library to facilitate users access to the online catalogue.

STAFFING

The entire University Library System experienced shortfall in staffing positions at all levels during the year. This situation prevented the libraries from operating at full capacity. The full staff strength for Senior Members/Professional librarians in the Main Library which should have been nineteen (19) stood at twelve (12). At the Senior Staff level, no recruitments were made to fill the ten (10) vacancies that had existed in the previous year, leaving the number at post at seventeen (17). In the Junior Staff (Technical) category, however, eight (8) new Junior Library Assistants were recruited, but an equal number of old staff resigned to either go to school or look for alternative jobs. For the Junior Staff (Non-Technical) category, the situation was somehow better as eighteen (18) out of the twenty-one (21) members were at post, leaving only three (3) vacancies to be filled, mostly cleaners.

Resignations, retirements and transfers to other departments of the University were partly responsible for the shortage of staff required for operating the libraries at full human capacity. Requests from Faculties, Institutions, Colleges and others like the Clinical Students' Hostel at KATH, the University Primary School and the Centre for Disability Studies for library staff have also necessitated the need for the recruitment of additional staff for the University Library System by the University Administration.

INCOME GENERATION

During the 2010-2011 academic year, the University Library generated income from overdue fines, photocopying service, and e-mail/fax services. The break-down was as follows:

Overdue Fines	GH¢ 3,483.50
Photocopying	GH¢ 3,104.65
E-mail/Fax	<u>GH¢ 195.20</u>
Total	<u>GH¢ 6,783.35</u>

COLLEGE LIBRARIES

The collections of the University Library and the six College libraries became accessible electronically with the uploading of all records on the Online Open Access Catalogue (OPAC).

Distance is no longer a barrier to accessing the records of the collections of any library within the University as this could be done via the Internet.

The total book stock of the Six Colleges and their satellite libraries for the 2010-2011 academic year was sixty-five thousand, one hundred and eighty-three (65,183) volumes compared to sixty-three thousand, seven hundred and sixty-six (63,766) volumes of the previous year. The breakdown was as follows:

College of Agriculture and Natural Resources	5,994
College of Architecture and Planning	7,654
College of Art and Social Sciences	14,705
College of Engineering	7,343
College of Health sciences	17,348
College of Science	<u>12,139</u>
Total	<u>65,183</u>

The College Libraries faced a number of challenges in the year under review. The College of Agriculture and Natural Resources and the College of Art and Social Sciences libraries were confronted with the difficulty of procuring core textbooks and reference materials from local representatives of overseas publishers. The College of Engineering, College of Health Science and College of Architecture and Planning libraries complained about lack of adequate space for efficient service delivery. There was also no College Library Committee at the College of Architecture and Planning to take major decisions about the operations of the College library.

CONFERENCES/SEMINARS/WORKSHOPS

Dr Helena R. Asamoah-Hassan, the University Librarian, attended the following Conferences/Seminars/Workshops:

1. 2010 IFLA Conference in Gothenburg, Sweden from 9th-17th August 2010.
2. The International Workshop for the Preparation and Coordination of the International Museum Day 2011 “Museum and Memory” in cooperation with the UNESCO Memory of the World Programming and other partners, in Berlin from 20-25th September 2010.
3. A workshop on “Online Publishing” which was held from 2nd – 5th November 2011 in Accra, Ghana.
4. A workshop on “Searching databases organised by CARLLIGH for staff of sister universities at the Balm Library, University of Ghana, Accra from 24th-25th March 2011.
5. Delivered a paper on Wednesday, 11 May 2011 on “The role of African Library Associations in the development of the 21st century information service profession” at the African Library Summit 2011 held at Mirty Hills Country Hotel, Conference Centre and Spa, Maledersdrift, Gauteng, south Africa.
6. Attended the IFLA Governing Board meetings Held from 14-18 April 2011 in The Hague, The Netherlands.

7. Made a presentation at the CODIST II Conference of the UNECA, in Addis Ababa, Ethiopia from 2nd – 5th May 2011.
8. A meeting and a General Assembly /Conference of Advisory members of EIFL from 25th – 28th June 2011 at the Belarus National Library in Minsk, Belarus.
9. Served as a resource person at a two day workshop on Open Access Institutional Repository Advocacy jointly organised by The Association of African Universities (AAU) and the Consortium of Academic and Research Libraries in Ghana (CARLIGH) held at the Best Western Hotel, Accra from 18th-19th July 2011.

Dr Mrs Asamoah-Hassan and Mr Victor Teye attended a workshop on “E-resources usage monitoring” at CSIR-INSTI, Accra from 31st August-2nd September 2010.

The University Librarian and Mr Yaw Senyah attended the meeting of the Committee of University Librarians and their Deputies (CULD) held on 1st April 2011 at the University of Cape Coast Library.

As a member of the International Advisory Committee (IAC) of the UNESCO Memory of the World Programme, the University Librarian, Dr Mrs H.R. Asamoah-Hassan attended the Tenth Meeting of the IAC held from 22nd – 25th May 2011, at Manchester, United Kingdom.

SERVICE TO THE COMMUNITY

Dr Mrs H. R. Asamoah-Hassan retained her position as an elected member of the International Federation of Library Association and Institutions (IFLA) Governing Board. She also maintained her position as Country Representative and Advisory Board Member of the Electronic Information for Libraries Network (eIFL.net) with its Headquarters in Rome, Italy.

Dr. Mrs Asamoah-Hassan was re-appointed for another 4 year term as a member of the International Advisory Committee (IAC) of the UNESCO Memory of the World Programme. She was also appointed for an initial 2 years as the 1st Regional Advisor for Emerald Publishers.

The University Librarian, Dr Mrs Asamoah-Hassan continued to serve as a member of the Board of Governors of her alma mater, Konongo-Odumasi Senior High School and also as Vice-President of the Ashanti Regional Branch of the Old Students Association.

Mr Yaw Senyah still served as a member of the Management Committee of the University Printing Press (UPK) and also as a member of the Board of Governors, Church of Christ Senior High School, Ejisu-Adadientem.

CONCLUSION

During 2010-2011 academic year, the KNUST Library System satisfactorily performed its primary function of making a comprehensive collection of both print and electronic resources, mainly in science and technology to provide relevant and quality information to enhance teaching, learning and innovative training in the University. It also replaced the traditional card

catalogue with online open access catalogue (OPAC) to enable patrons to access the resources of all the libraries in the university in the comfort of their lecture halls, offices and laboratories. Much more could have been achieved, but for such challenges as inadequate funding, lack of space and unreliable Internet service which the system faced.

INTERNATIONAL PROGRAMS 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 strengthens already existing collaborations as well as initiate new ones.

COLLABORATIONS AND MEMORANDUM OF UNDERSTANDING SIGNED

In 2010 KNUST signed memoranda of understanding with the following institutions:

International Institutions

- ❖ University of Oklahoma, USA, 9th December 2010
- ❖ Board of Regents of the University of Michigan, USA, 15th December, 2010.
- ❖ Oklahoma State University, USA, 5th January 2011.
- ❖ Lovely Professional University (LPU) Punjab, India, 9th December 2010.
- ❖ Morehouse College, USA, 27th March 2010.
- ❖ Access Global Education (AGE), USA, 6th January 2011.
- ❖ Cape Peninsula University of Technology (CPUT), South Africa
- ❖ Hanbat National University (HBUN), South Korea, 27th September 2010
- ❖ Embry- Riddle Aeronautical University, USA.
- ❖ Universitat Politecnica De Catalunya (PC), Spain.
- ❖ Access Global Education (AGE), USA, 28th October 2010
- ❖ Plant Science Group of Wageningen University and Research Centre
- ❖ King Mongkut's University of Technology, Thonburi, Thailand, 22nd March 2010
- ❖ Aalborg University, Denmark, 2nd November 2010
- ❖ Kashan University, Iran.
- ❖ Nottingham Trent University, Nottingham, UK

National Institutions

Gratis Foundation, Tema, Ghana, 7th July 2010

FOLLOW-UP ISSUES WITH RESPECT TO MOUS SIGNED

- AGE MOU: it is hoped that a number of students would be able to go on vacation training with selected institutions in the USA.
- Hanbat MOU: has led to the offer of four full scholarships to teaching assistants in the College of Engineering.

- Aalborg MOU: a lecturer in the KNUST school of Business has been offered a PhD scholarship.
- Plant science Group has offered \$600,000.00 worth of laboratory equipment for the Department of Biochemistry.
- Cape Peninsula University of Technology has offered scholarships to two lecturers in the Department of Communication Design.

INTERNATIONAL STAFF AND STUDENT EXCHANGES IN THE YEAR

Six Students were received at KNUST for a semester's study during the first 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.

Country	No. of Students	Period
USA	1	1 st Semester 2010/11
France	1	1 st Semester 2010/11
Netherlands	2	1 st Semester 2010/11
Germany	2	1 st Semester 2010/11

ACTIVITIES

The posting of a new Dean to the IPO in August 2010 led to vigorous pursuits of the mandate of the office and a major shift in its focus and activities.

Major activities undertaken by the office during the year under review include:

- Familiarization visits to the Colleges.
- Soliciting of Power Point Presentations from the departments.
- Soliciting of Country Flags from all Foreign Embassies in Ghana.
- Soliciting of data on country of study from all Senior Members.
- Issuance of letters to all collaborators to encourage generation of some level of activities on the MOUs signed.
- Organization of field trips to sections of southern and northern Ghana.

VISITORS

The office received delegations from the under listed institutions. The purposes of most of the visits were to seek collaborations between KNUST and their Institutions.

1. University of Pennsylvania, USA
2. State University of New York, USA
3. Wroclaw University of Technology, Poland
4. Michigan Technology University, USA
5. Kwantlen University, South Africa
6. Freiberg University, Germany

7. Chinhoyi University of Technology (CTU) Zimbabwe
10. Hanbat National University (HBNU), South Korea
11. Cities Alliance, South Africa
12. University of Cape Town, South Africa
13. Karlstad University, Sweden
14. Universities Denmark, Denmark
15. University of Oklahoma, USA
16. Stellenbosch University, South Africa
17. Oklahoma State University, USA
18. University of Oklahoma, USA
19. Association of Ghana Industry, Ghana

CHALLENGES

The International Programmes Offices lacks a good and sizeable transport vehicle to ensure efficient transportation of international staff and student. The provision of a 15- seater bus will enhance the IPO's ability to offer better transportation service to its visitors.

OTHER ISSUES

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
- Following the visit from a delegation from Hanbat National University (HBNU), South Korea and a subsequent signing of an MOU, HBNU has offered full Scholarships to four Teaching Assistants at KNUST beginning in March 2011.

CONCLUSION

The International Programmes office is vigorously pursuing its mandate of fostering collaborations with institutions with similar focus both nationally and internationally. It is the hope of the office that staff in the Colleges would be more proactive towards requests from the IPO.

SPORTS DIRECTORATE

INTRODUCTION

Sports, an integral part of the educational process is given prominence attention in our University. 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.

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 improve on our lot and also encouraging stakeholders to assist in this regard which has resulted in halls trying to construct their own facilities. It is on record that the Queen Elizabeth I Hall in conjunction with the Sports Directorate have built a twin tennis court which was inaugurated by the Vice-Chancellor, Prof. W.O. Ellis, in the year under review. The Directorate is ready to assist any hall which is ready to undertake any infrastructural development in sports.

COMPETITIONS

The University organised, participated and hosted major sporting events in the year under review. In August 2011 the Vice-Chancellor inaugurated and lunched the Queen's Hall Tennis Courts and the Annual KNUST/Queen's Hall/Latex Foam Tennis Open.

As many as ten (10 students; four (4) track and field and seven (7) soccer players merited selection into the GUSA team for the World University Games at Shenzhen, China in August 2011.

In November students' team in women and men took part in Inter-University Cross Country Race at University of Mines and Technology, Tarkwa (UMaT)

The staff soccer competition was organised to crown our 60 years celebration. This was won by the University Health Services team.

In January KNUST hosted the 22nd Ghana Universities Sports Association (GUSA) Games. In attendance at the opening ceremony were the Vice-Chancellor, KNUST, the Pro Vice-Chancellor, KNUST, the Vice-Chancellor of University of Ghana, Legon and many others which signifies that the University authorities are committed to the growth and development of sports on our campus

AWARDS

To motivate outstanding Sportsmen and women the annual Vice-Chancellor's end of year awards and dinner was organised at the close of the second semester. Apart from the usual awards some few selected performers were given bursaries.