Vice Chancellor's REPORT to the 2nd Congregation

August 2017

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Prof. Harrison Dapaah
Vice-Chancellor

FOREWORD

This report covers the general activities of the University over the 2016/2017 academic year. The report provides information on all major constituents of the University particularly from the Office of the Vice Chancellor and the Central Administration, Schools and Academic Departments, Library, and other related areas within the University.

The University, during the year under review, recor ded major progress in academic activities and increased its enrolment to 3,613 over the period under consideration. Within the period, the University also received accreditation for two new programmes which will be mounted in the 2017/2018 acdemic year.

In addition, the School of Graduate Studies also made significant progress during the past year and increased its intake to over 100 students pursuing various programmes leading to the award of master's and doctoral degrees in Environmental Engineering, Renewable Energy Management and Social Forestry and Environmental Governance.

In line with our vision of becoming a centre of academic excellence, the University, during the year under consideration, continued its research activities across its academic departments and other units, leading to significant research output and publications in national and international peer-reviewed journals. At the institutional level, UENR also participated in internationally funded research projects such as NWO-TRO, and the African Academy of Sciences sponsored CIRCLE Programme.

Within the same period, the University commissioned the $1.2 Million COSMIC II Ground Station under the sponsorship of US National Oceanic and Atmospheric Administration (NOAA) and the Taiwanese Spa ce Agency to monitor and predict weather in the tropics in Africa, making UENR the only University in Africa with

such facility. The University also organized the Maiden Science Festival under the lead sponsorship of the Bui Power Authority. During the period under review, the University also supported some staff to attend conferences to share knowledge with the scientific community as well as pursue terminal degrees.

All these activities over the period, demonstrated the resolve of the University to become a centre of excellence within a short period of its existence. In spite of challenges such as inadequate funding, physical and human resources, the University also made modest gains in infrastructure for smooth academic, research and administrative activities. Some of these projects include the ICT/Library Complex, the 12 Unit Lecture Block, the development of Dormaa Campus, the 4 Storey Hostel Block and a host of others, all under GETFund sponsorship. The investment in some of the projects indicated above is a demonstration of our commitment to invest in infrastructure and equipment to improve upon learning and teaching experience in the University.

In the coming year, the University would religiously continue to pursue its mandate of teaching, research and extension services to support the development agenda of the country.

BENEFACTORS OF THE UNIVERSITY

The University will like to acknowledge the benevolence of a number of companies, corporate organisations and philanthropic individuals whose generosity aided the University over the period.

The Bui Power Authority supported the University to organize its Maiden Science Festival which was attended by over 800 people to witness research activities, especially innovation and other research breakthroughs. The University also benefited from the South-South Co-operation Project under the sponsorship of the Chinese Government for the distribution of energy efficient solar home systems, street lights and inveter Airconditioners to some off-grid communities and other institutions in the country.

The National Oceanic and Atmospheric Agency and the Taiwan Space Agency also provided funding for the acquisition and installation of the $1.2million COSMIC II Ground Sation in UENR for research purposes.

The University also wishes to acknowledge the support of Petroleum Experts (PETEX), a leading petroleum engineering Software Company, based in Edinburgh, Scotland for donating the Integrated Production Modeling (IPM) software suite to aid teaching and learning in the University during the year under review. The software has a commercial value of £ 1,399,965.85 (10 user licenses).

The Board of Directors of the Bank of Ghana also approved an amount of Seven Million Ghana Cedis (GH₵7,000,000.00) in support of the construction of a 2,000 capacity Auditorium at the Sunyani Campus.

The University is also indebted to the Government of Ghana for the funding of infrastructural projects through the GETFund. Other benefactors include Osagyefo Oseadeayo Nana Agyeman Badu II, Dormaahene, the Ministry of Energy, the Brong Ahafo Regional Co-ordinating Council, the French Embassy among others.



2ND CONGREGATION REPORT

The University of Energy and Natural Resources was established by an Act of Parliament (Act 830) in 2011 and was inaugurated on 17th November 2012 with two Schools, namely School of Engineering and School of Natural Resources. The University currently operates five Schools and runs 21 academic programs across all the Schools.

The total number of students inclusive of postgraduate and undergraduate students as of May 2017 stood at 3,613 distributed across five Schools in the University, namely School of Natural Resources, School of Engineering, School of Sciences, School of Agriculture and Technology and School of Graduate Studies.

The number of total staff appointment as of 2017 stood at 251. Out of the total, 126 (69%) represents senior members (teaching and non teaching) of the total workforce, whiles the senionr staff and junior staff account for the rest.

OFFICE OF THE VICE CHANCELLOR

The Vice Chancellor is the Chief Executive Officer of the University and responsible for the overall planning, direction, organisation and management of the University. As the Chief Academic Officer, the Vice Chancellor provides leadership to all the members of the University. He is accountable to the University Council. The Office of the Vice Chancellor is staffed by the following as indicated in the Table below:

Name	**Qualification**	**Rank/Position**
Prof. H.K. Dapaah	PhD (Guelp) MSc (New (Zealand) BSc (UG)	Vice Chancellor
Prof E. O. Frimpong	PhD (Michigan) MPhil, BSc (KNUST)	Pro Vice Chancellor
Prince Awuah	MA BA(UCC)	Jnr. Asst. Registrar
Abigail Yeboah-Kyere	BA (Ghana)	Snr. Admin Assist.
Millicent Daghar	BA (CUCG)	Admin Assistant

Academic Programmes

The University is currently running 21 accredited programmes. The Table shows a distribution of the number of programmes and future programmes that would be rolled out depending on the country's need, infrastructure and UENR Council's approval.

Table: UENR Schools and the number of accredited programmes.

School	**Campus**	**Number of Programmes**	**Future Degree Programmes**
Energy and Engineering	Sunyani	7	Materials Engineering; Geological Engineering; Petro-Chemical Engineering
Science	Sunyani	6	Nanotechnology; Cyber Security and Computer Forensics; Physics; Biological Sciences, Environmental science, Biochemistry
Natural Resources	Sunyani	4	Wood Products Manufacturing;
Agriculture and Technology	Dormaa	2	Landscape Technology, Plant Sciences, Food Science and Technology; Agricultural Economics, Agricultural Extension
Graduate Studies	Sunyani	4	Graduate programmes in all the key undergraduate programmes

ACTIVITIES

During the period under review, the Vice Chancellor performed a number of activities which included, among others visits and interactions, meetings and conferences, both in and outside the country, all in the pursuit of the interest of the University.

- **Visits and Interactions**

The Vice Chancellor performed a number of engagements in the course of the academic year, by receiving a number of visiting individuals, groups and institutions. Notable amongst them were:

- The Former President, His Excellency John Dramani Mahama
- The US Ambassador to Ghana
- Institution of Engineers
- Ghana Armed Forces Command and Staff College, Accra
- TEWU National Executives
- Managing Director, Agric Development Bank (ADB)
- CopyGhana
- Brong ahafo Regional Minister

- **Workshops / Conferences / Seminars**

In the course of the 2016/2017 academic year, the Vice Chancellor participated in the following workshops, conferences and seminars:

- National Summit on Tertiary Education in Accra. The Summit was under the theme Towards a National Vision and Plan for Tertiary Education.
- The 54th Annual Conference of Heads of Assisted Secondary Schools (CHASS) which was held in Sunyani from 5th to 10th September, 2016.

The theme for the Conference was "Discipline at Senior High School Level – A Pre-requisite for Quality Education".

- The Agricultural Development and Value Chain Enhancement (ADVANCE) Workshop in Sunyani.
- National Procurement Workshop for CEOs and Ministers of state

- **Convocation Meetings**

The Vice-Chancellor made efforts to strengthen management and staff relationships through engagements with members of staff and convocation during the year under consideration. The staff engagement afforded the Vice-Chancellor the opportunity to communicate his vision, discuss progress of key infrastructural and academic projects. The Vice Chancellor also took the opportunity during convocation to discuss the challenges of the University and how management intended to address such challenges in the short, medium and long term.

- **Linkages and Collaborations**

For a young and growing University to reach its potential, exposure to the current trends and best practices in teaching, research, partnerships and collaborations becomes an important tool for the achievement of institutional goals. For this reasons, Management initiated a number of linkages with other institutions and organisations

As part of efforts aimed at promoting knowledge in solar technologies, UENR entered into an MoU with the Energy Commission, for the training of Solar PV Installers in the Design, Installation and Maintenance of Off-grid and Grid-tied Solar PV Systems.

The Vice Chancellor also led UENR to sign an MoU with China-Africa International Consulting Limited (CAICO) to establish, a 50 MWp Photovoltaic Power Plant and Teaching Facility at at UENR

The University also signed an MoU with the University of Agriculture in Krankow, Poland to co-operate in the field of research and education. Again, during the 2016/2017 academic year, UENR entered into an MoU with AD & A and Kallo Inc. for the construction of a University Teaching Hospital at the Sunyani Campus. The Vice-Chancellor, also on behalf of the university, initialled an MoU to collaborate with CASBE International School towards the organssation of UENR's Annual Science Festival in the coming year

RESEARCH

Research Projects and Related Activities

Research activities at the institutional level continued during the year under consideration. UENR continued its research work under Netherlands Organization for Scientific Research (NWO)-WOTRO Global Challenges Programme on inclusive value chain. The research project is 4-year (2014-2018) research programme focusing on partnerships between the private sector and smallholder tree crop (cocoa, oil palm, macadamia, and mango) farmers in Ghana and South Africa. It is an innovative combination of the value chain and livelihood trajectory analysis, action research in learning platforms, and a landscape approach.

The project seeks to generate knowledge and methodologies that would enable these partnerships enhance food sovereignty, inclusive value chain collaboration, and landscape sustainability. The programme has a wide range of consortium and partners from academia, practitioners and private sectors, being led by the University of Amsterdam, and UENR is a consortium member. It also covers two Ghanaian Ph.D. students studying at the University of Amsterdam.

Another research project the University is undertaking is the NWO-WOTRO Food & Business Applied Research Fund 'Improving smallholders' food and income security by introducing non-timber forest products in reforestation schemes and tree-crop farms: A collaborative learning process in Ghana'. This project employed a gender-sensitive and stepwise collaborative learning approach. It is a 3-year (2016- 2019) project which sought to integrate nutritious shade-tolerant non-timber forest products (NTFPs) (black pepper, grains of paradise and honey) in Ghana's modified taungya (reforestation) system and off-reserve tree farms, and enhance their production, processing and marketing.

During the the year under review, the University also made strides in the area of research through the Earth Observation Research and Innovation Centre (EORIC) and the Centre of Climate Change and Gender Studies.

In the course of the year, EORIC which seeks promote, facilitate and support the acquisition and application of geospatial technologies in gathering data in real time for interdisciplinary research and education in the following areas, organised the 2nd Afrigeoss Symposium in Sunyani. It was attended by over 180 participant from accross the world.

- Water, disasters, energy, climate,
- agriculture, ecosystems, weather,
- health and biodiversity.

The Center of Climate Change and Gender Studies which also seeks to promote, coordinate, facilitate and disseminate research and developmental initiatives that deal with the nexus between Climate Change and Gender issues in Ghana and beyond, also organised an International Conference on Climate Change Adaptation and Development (ICCCDA 2017).

UENR continued the publication of its premier journal known as, "Journal of Energy and Natural Resources Management" (JENRM) which was set up under the authority of the University Council to disseminate research outcome.

Awards and Honours

- **The Shell Ocean Discovery XPRIZE**

In the course of the year, Dr Mark Amo –Boateng, a member of staff of the University made UENR proud when he led the only African Team to reach the semi finals of the $7 Million Shell Ocean Discovery XPRIZE, a global competition challenging teams to advance deep-sea technologies for autonomous, fast and high-resolution ocean exploration.

The $7 Million wining prize, will allow the wining team to fully explore and map the ocean floor, and uncover the planet's greatest wonder and resource for the benefit of humanity. The National Oceanographic and Atmospheric Administration's (NOAA) has also set aside $1 million bonus prize to incentivize teams to develop technologies to detect the source of chemical and biological signals underwater. It is our hope that Dr. Amo Boateng and his only African Team will win the grand challenge.

Resource Mobilization & Donations

Financial resource mobilization for infrastructural development was mostly through external donor funding particularly, the GETFund. The Ghana National Petroleum Corporation (GNPC) supported the construction of the Applications Laboratory Phase One. Osagyefo Oseadeayo Agyemang Badu II, Omanhene of the Dormaa Traditional Area also supported the construction of a Syndicate Hall and gave out his hotel for the use by the Dormaa Campus until the GETFund buildings are completed.

Under the Energy Conservation and Climate Change South-South Co-operation Project, the Chinese Government donated 1,000 Solar Home Systems. The Board of Directors of the Bank of Ghana also approved an amount of Seven Million Ghana Cedis (GH₵7,000,000.00) in support of the Construction of a 2,000 capacity Auditorium at Sunyani Campus.

- **Staff Development**

Since the establishment of the University, Management has made efforts to facilitate staff development through GETFund and other sources. A number of staff were enrolled on PhD programmes through GETFund support whiles others also enrolled on programmes based on external scholarships and self funding. During the year under review, the University gave approval for 5 members of staff to pursue terminal degrees in various universities in Europe and elsewhere.

Challenges

As a young and growing University, it is worth acknowledging that UENR is confronted with a number of challenges. Major infrastructural challenges that UENR faces include the need for a multipurpose Auditorium and Library for each of the campuses. Lecture hall complex for each of the campuses, laboratories with modern equipment for a world class science and technology university, halls of residence for 3 campuses, offices for staff and PhD students as well as housing for teaching and non-teaching staff.

Transportation, health and agriculture challenges include the need for buses and pick-up vehicles, tractors and accessories and farm machinery, an inter-campus shuttle system for staff and students and well equipped University clinic for all campuses.

Technical and security related challenges also include fibre optic cabling of 3 campuses (ICT infrastructure), consistent high speed internet connectivity, books and teaching aids for teaching, learning and research, walling/fencing of UENR lands to prevent encroachment, police posts, police visibility and night patrols on all campuses.

QUALITY ASSURANCE AND PLANNING UNIT (QAPU)

The Quality Assurance and Planning Unit is directly under the Office of the Vice Chancellor with the Pro Vice Chancellor excising supervisory role of the Unit. The QAPU plays a major role by ensuring that academic quality is not

sacrificed in the pursuit of other goals. The Unit seeks to assure quality in teaching and research and ensure that all actors in the teaching and learning process meet standards. The Unit is staffed by the following:

- Prof. Emmanuel Opuni -Frmpong – Head
- Mr. George Kwadwo Anane – Assistant Registrar
- Mr. Michael Addaney – Snr. Administrative Assistant

In order to ensure that maximum benefits are derived from teaching and learning in the University, the Unit periodically monitors, audits and evaluates teaching staff. During the year under review, the following workshops were organized by QAPU to promote efficiency in teaching and learning :

- Workshop for examination officers and Invigilators
- Academic Orientation for newly recruited teaching staff
- Documentation of Promotion Papers and Content Assessment
- Annual compilation of research outputs of teaching staff
- Student's assessment of lecturers

PROCUREMENT OFFICE

The Procurement Office has the principal mandate to superintend over all procurements in the University in accordance with the Public Procurement Act 663 2003 as amended by Act 914, 2016. One of the key functions is to advise Management on all procurement related activities. The Procurement Office is supervised by the Entity Head who is the Vice Chancellor. The main philosophy of the Procurement Office is to ensure the procurement of goods, works and services in a transparent and efficient manner to ensure value for money and judicious use of national resources.

Units and Staff

The Procurement Office comprises of Goods & Services Procurement, Works Procurement and Expediting and Records Management. The staffs of the Procurement Office are:

Name	Qualification	Rank
John Baptist Siddick	MSc (Salford) BSc (GIMPA) MCIP, HND, PgC(Harriot)	Procurement Officer
Baffour Antoa-Mensah	MBA, BSc, HND	Asst Procurement Officer
Kofi Dwomo	MBA, BSc, HND	Snr. Procurement Asst.

Activities over the Past Year

The Procurement Office coordinated and facilitated the procurement of the ebizframe Software, Library Books and Textbooks, and other logistics to aid in teaching, learning, research and administration.

Future Plans

The Procurement Office plans to further streamline the procurement process in the University, to develop operational manual for service procurement and to upgrade existing procurement manual for goods and works.

Future Development

The Office envisages to attend refresher courses in E-Procurement, World Bank and other Development Partners procurement processes and Works and Services Procurement as well as Public-Private Partnership (PPP) initiatives.

Conferences/Workshops/Seminars

During the 2016/17 Academic Year, staff of the Procurement Office attended the following Conferences/Workshops/Seminars.

1. 8th Annual Forum on the Theme: Act 914: Transitioning into a vibrant Public Procurement System in Ghana organized by the Public Procurement Authority in October 2016 at Accra
2. Achieving Value for Money through Public Procurement organized by Public Service Procurement and Supply Chain Class in October 2016 at Accra
3. Modern Trends in University Administration and Management, organized by Ghana Association of University Administrators (GAUA) in March 2017 at Kumasi
4. Auditing the Supply Chain, organized by KPMG in May 2017 at Accra
5. Special Training Session on Public Procurement Act, 2003(Act 663) as amended & Public Financial Management Reforms for Ministers and Heads of Agencies organized by the Ministry of Education in May/June 2017 at Accra



Ben Appiah Kubi, Ag. Registrar

REGISTRAR'S OFFICE

The Registrar's Office is the nerve centre of the administrative system of the University. The Registrar's Offices is superintendent by the Registrar, who is the University's Chief Operating Officer (COO) and Secretary to the Council of the University.

The Registrar's Office is responsible, under the Vice-Chancellor, for the day-to -day administration and management of the University. To achieve this, the Registrar works in concert with and collaborates with other Offices of the University's Central Administration.

The Registrar's Office is currently made up of five (5) main Divisions and five Sub- Divisions. The Registrar is supported by a cadre of Administrators and Professionals made up of Senior Assistant

Registrars and Assistant Registrars who handle the various Divisions of the Office and service Committees and Boards of the University

Summary of Senior Members in the Registrar's Offices

Name	**Unit**	**Rank/Position**	**Qualification**
Ben Appiah-Kubi	Office of the Registrar	Ag. Registrar	MBA (Leicester) B.Ed (UCC) PgD (CIPR-UK) MCIPR
Hayford Asare	Human Resource	Assistant Registrar	MA, B.Ed, (Cape Coast)
Mary Yebo-Okra	Gen. Admin.	Assistant Registrar	MA, BA (KNUST)
Alfred Appiah	Academic Affairs	Assistant Registrar	MBA, BA(KNUST)
Prince Awuah	VC's Office	Jnr. Assistant Registrar	MA, B.Ed (UCC)
George Anane	Quality Assurance	Assistant Registrar	MSc (KNUST) BSc (Cape Coast)
Mrs Linda Mensah	Legal Unit	Assistant Registrar	LLB (KNUST) BL LLM(Stratclyde)
David Twumasi Ankrah	Graduate School	Jnr. Assistant Registrar	CEMBA, BA (KNUST)

The Registrar is also assisted by various grades of administrative assistants and other staff who perform senior administrative and managerial roles in Academic Departments and Administrative Units on behalf of the Registrar.

During the period under review, the Registrar's Office continued to carry out its mandate as the pivot for administrative work in the University by facilitating University business and ensuring effective functioning of the various committees as well as providing essential services to both lecturers and students alike. Again, Offices under the direction of the Registrar performed some of the following functions or role in line with the statutory provisions of the Act establishing the University:

- Delivering of accurate, prompt, courteous and consistent service to all students and constituents of the University, consistent with its educational mission.
- Providing efficient leadership role in the accurate and efficient management of data in all functional areas of management.
- Provision of admission services for students
- Serving as the official custodian of University records, interprets and applies academic policies.
- Initiation of policies, rules and regulations for approval and adoption.

During the period, the Registrar's Office worked assiduously in the staffing process through the provision of recruitment, placement and development. The Offices also worked to improve upon the visibility of the University by providing marketing and in-house public relations services as well as legal advisory services to all constituents of the University.

Services in the Registrar's Offices are provided through open, collaborative, and accurate communication, respect for all, innovative improvements in efficiency and effectiveness, and an active commitment to an environment of collegiality and professionalism. In the process of discharging its duties, the Office of the Registrar subscribe to the highest ethical principles of maintaining accuracy, integrity, and security of all academic record, and ensure full compliance with all University regulations.



Albert Banan Abdulai, Dir. of Finance

FINANCE DIRECTORATE

Introduction

The Finance Directorate is responsible for preparing the University's annual budget estimates, keeping of all financial records of the University, production of periodic budgetary control reports, and preparation of annual statutory financial accounts.

The Directorate is also responsible for keeping of records of donor funded projects, students' financial records, fixed asset records and management of stores and the production of reports on these.

The Directorate also provides services to support the academic mandate of the University such as provision of financial reports and financial sustainability reports for accreditation of academic programmes.

The Directorate fulfills these responsibilities through the Treasury & Hostel Financial Management Section, Payroll & Management Accounting Section and the Financial Accounting Section.

Departments and Staff

Albert Banan Abdulai; FCCA, MPhil (Admin & Org), B. Com, Dip. Educ.; **Director of Finance**
Paul Nana-Nketia; ACCA, MBA, B Sc. Administration; Senior Accountant, Treasury and Hostel Financial Management, **Senior Accountant**
Augustine Opoku-Mensah: ICA (GH), BSc Administration; Accountant, Payroll & Management Accounting, **Accountant**
Stephen Yaw Ntiamoah; ICA (GH); HND Accounting; Financial Accounting Unit, **Accountant**

The Directorate has 10 Senior Staff and one Junior Staff.

Activities over the past Year

The Directorate successfully implemented the ebizframe ERP software in the following five modules: Finance, Materials Management, Human Capital Management, Forecasting, Budgeting & Planning and Fixed Assets

Future Plans

The Directorate plans to acquire software to handle Student Financial Records in the near future. The Directorate also plans to put in place its own financial regulations and risk-management framework to govern the financial operations of the University.

Conferences/Workshops/Seminars

During the 2016/17 Academic Year, staff of the Directorate attended the following Conferences/Workshops/Seminars.

1. 8th Annual Forum on the Theme: Act 914: Transitioning into a vibrant Public Procurement System in Ghana organized by the Public Procurement Authority in October 2016 at Accra
2. IFRS Updates organized by ICA(Ghana) in October, 2016 at Kumasi
3. Training Session on the Public Financial Management Act 2016 (Act 921) organized by the National Council for Tertiary Education in April 2017 at Accra
4. NCTE Senior Academic Leadership Training Board/Council Conference in July 2016 at Accra
5. Modern Trends in University Administration and Management, organized by Ghana Association of University Administrators (GAUA) in March 2017 at Kumasi
6. Auditing the Supply Chain, organized by KPMG in May 2017 at Accra
7. Seminar for Taxpayers (on Revenue Administrative Act – Act 915; VAT Act 870/948; TRIPS Implementation; Returns Submission; Rights and Obligations of Tax Payers) organized by the Ghana Revenue Authority in June 2017 at Sunyani



WORKS AND PHYSICAL DEVELOPMENT

The Works and Physical Development Directorate of the University is responsible for the designing, supervision and the development of the infrastructural requirements of the University.

The Directorate conceptualizes projects in line with the needs of the University and implements such projects based on the approval by Management and the University Council. The Directorate is headed by a Director who is assisted by other built environment professionals. The Directorate is also home to the Estate Unit that is charged with the management of the facilities of the University. Below is a summary of staff in the Directorate.

Name	Rank/Position	Qualification
Cephas A. Yeboah	Ag. Director	MSc, BSc, (KNUST)
Cephas A. Yeboah	Architect	MSc(KNUST)
John Awotwi	Maintenance Engineer	BSc.(KNUST)
Mathew Arhin	Quantity Surveyor	MSc, BSc(KNUST)
Kwaku Safroadu	Architect/Clerks of Work	MSc, BSc(KNUST)
Juliana Nyarko	Snr Estate Officer	MSc(ITC) BSc (KNUST)

NUGS Project

The National Union of Ghana Students (NUGS) in the course of the year, revive its plans to construct a new 4 Storey Hostel, 4 Storey Staff Apartment and Commercial Centre at UENR. The estimated cost of the project is GHS35, 000,000.00.

The Governing Council approved the project and it is anticipated that the project will take off soon. A Memorandum of Understanding between NUGS and UENR will be signed at a later date during the 2017/2018 academic year.

PROPOSED INFRASTRUCTURAL PLAN FOR SUNYANI CAMPUS

1. New road shall be constructed to link the existing GETFund Hostel, new Hostel (under Construction), Food Court & Business Centre (Under Construction) and proposed NUGS Hostel, Sports Complex and Auditorium Complex (UENR Tower).

2. Another new road shall be constructed from the Existing

Laboratory to link the Nursery road.

3. Junior Staff Quarters will be converted into Stores for both central store and stores for Estate Department

4. Two Detached Quarters along the Hostel Link will be renovated and converted into offices to house the Counselling Centre and Sports Department

5. All Lecturers at the Old Administration Block shall be accommodated at new Offices to be allocated to them. The existing offices shall be used as part of the Finance Department, Internal Audit and Procurement Office – 2016/2017.

6. The First Floor of Applications Laboratory shall be used as Examination Office with 4 Examination Halls and photocopy unit

7. The residences of Messrs Debrah, Clement Kuusoyir and Akoto and old Guest House shall be converted into Staff Offices to house Estate Department, Distance Learning, Languages Centre and EORIC and others.

8. The sanctuary shall be well fenced to serve as research and tourism centre.

9. Land behind the existing Laboratory Block shall be grassed and reserve for other outdoor Engineering Equipment.

10. New Library will be ready for use and the existing Library shall be converted into Languages Centre.

PREPARATION FOR 2017 -2020

The University has also planned to executive a number of projects as indicated in the Table below in the next three years. The Projects are expected to be financed from the GETFund and other sources.

Projects	2017	2018	2019	2020	Estimated Cost
Construction of Administration Block	2,200,000.00	2,550,000.00	2,550,000.00	4,700,000.00	12,000,000.00
Construction of 4-Storey Hostel at Dormaa	1,500,000.00	2,500,000.00	2,500,000.00	2,000,000.00	8,500,000.00
External Works to Hostels and Food Court Building	1,000,000.00	1,000,000.00	1,000,000.00	0.00	3,000,000.00
Renovation and of Clinic	300,000.00	0.00	0.00	0.00	300,000.00
Construction of Sports Courts	200,000.00	0.00	0.00	0.00	200,000.00
Construction of Paved Car Park	900,000.00	0.00	0.00	0.00	900,000.00
Renovation of URO Office	500,000.00	0.00	0.00	0.00	500,000.00
Renovation of Security Office	300,000.00	0.00	0.00	0.00	300,000.00
Balance c/d	**6,900,000.00**	**6,050,000.00**	**6,050,000.00**	**6,700,000.00**	**25,700,000.00**



OFFICE OF THE DEAN OF STUDENTS

The Office of the Dean of Students seeks to provide welfare support for students to enable them attain their goals. This is mainly done through capacity building and advocacy for students. The Office has worked cordially with the leadership of the SRC in minimizing and resolving conflicts to enable the University have a peaceful environment for teaching and learning during the year under consideration.

The Office of the Dean of Students comprises of the Dean, Hostel Manageress and Administrative and Accounting Assistants. Currently, the Office is made up of the following:

Dr Simon Abugre	-	Dean
Ms Abena Ahenkora	-	Hostel Manageress,
Rev. Dr. Ishmael Arthur	-	Guidance& Counselling
Eva Bakuri	-	Senior Counselling Assist

Activities

The services provided by the Office include student's guidance and counselling, guidance for SRC leadership, students support service among a host of others.

Orientation for Fresh students

During the period, the Office participated fully in the orientation of all fresh students' for the University. Such students were exposed to life on campus as contained in their handbook and the workings of the Office.

Seminar on Drug Abuse

In collaboration with the Narcotic Control Board, a seminar on drug abuse was organized for freshmen during their orientation. The seminar was a success and it is our hope that this would become an annual affair.

Students Health Services

With the appointment of a Medical Officer, health delivery and confidence in our facilities has improved. Students are quickly attended to when they report ill. Despite these improvements, most students still patronized the SDA Hospital. When students are admitted at SDA Hospital and our Medical Officer is made aware, he makes a follow-up to assess the situation. With the current renovation of our facilities, health delivery is likely to improve.

Academic Tutors

The Office is working with the Deans of the various Schools to strengthen our academic tutorial system. This would allow students access to academic counselling from lecturers. This would greatly enhance academic performance.

'Anidaso Nsae' (Hope not lost) support

The SRC through the 'Anidaso Nsae' support was able to partially assist 26 needy students to pay their fees. They were selected after having attended an interview and ranked according to their needs. The amount that each student got was based on the recommendation of the panel members.

UENR NUGS

As part of their capacity building programme UENR NUGS in collaboration with KNUST NUGS organized a leadership and mentorship symposium at Catholic University College of Ghana.

Red Cross Society

As part of their social responsibility, the UENR Chapter of the Red Cross and the Rotract club of UENR organized a blood donation exercise to support the blood bank of the regional hospital. The patronage of the exercise was good.

Housing for Students

This continues to be a major concern to the University community as it affects student's welfare. The standard of service provided by some of the private hostels is poor. The Office has advised some of the hostels to improve the standard of services at their hostels. Generally, most students live in private houses mostly located at Fiapre, Berlin Top and Zinko areas. In these areas, some students are sometimes subjected to attacks and their possessions taken.

Most of these incidences have been reported to the police and they promised to intensify patrols in these areas. As a temporary measure, the police have established a check-point on campus. This has greatly improved security on campus. The Office, in collaboration with the SRC have come out with a flyer to provide the necessary security tips to students. It is hoped that the two Hostels under construction, when completed, would solve the accommodation problem on campus.

Demise of Students

The university lost five students during the 2016/2017 Academic year. Three of these students were victims of the Kintampo Water fall disaster. They are:

1.Uthman Abdul Fattah - BSc. Natural Resources Management

2. Agyei Dennis Nana Ntim - BSc. Natural Resources Management

3. Nicholas Laari - BSc. Natural Resources Management

The others are: Mr. Bedu Addo Ebenezer (BSc. Resource Enterprise and Entrepreneurship) and Mr. Alhassan Yazeed (BSc. Computer Science).

SPORTS & DEBATE

Sports constitute a vital component of the training of holistic individuals. The University during the period under review, participated in a number of sporting activities notable among them were the following :

- GUSA Mini Games in Tamale
- The Sunyani Marathon
- Schools & Colleges Basketball Competition(UPAC)

Ghana Universities Debate Championship

The University hosted the 2017 Ghana Universities Debate Championship. A total of eight universities participated. These included University of Energy and Natural Resources, University of Ghana, University of Cape Coast, Kwame Nkrumah University of Science and Technology, University for Development Studies, University of Health and Allied Sciences, All Nations University and Islamic University. UENR team placed third at the Novice category.

Peer Counsellors' Training Programmes

Peer Counsellors' Training programme was organized by the Counsellor during the first semester of the year under review. The theme of the programme was **"Becoming a Peer Counsellor in the University."** Another programme was organized during the Second Semester under the theme: **"Counselling others to make a Good Career Decision."** Both sessions were well patronized by members of the Peer Counsellors and other students from various denominations.

Individual Counselling

During the year under consideration, the Counselling Unit witnessed an upsurge in the number of students coming to the Unit for individual counselling on issues related to relationship, planning of studies, and addiction among other issues. Other cases were mostly related to pornography, masturbation, and alcohol. Some of the students came in for counselling on their own, whilst others were brought to the Counselling Unit by their Lecturers. Others, whose issues were related to mental health, were referred to the Regional Hospital Psychiatric Unit for further attention.

SCHOOLS & DEPARTMENTS



SCHOOL OF NATURAL RESOURCES

INTRODUCTION

The School of Natural Resources is one of the foundation schools of the University of Energy and Natural Resources (UENR) which took off during 2012/2013 at the main campus in Sunyani. Its mandate includes training of high level manpower that will harness the country's enormous natural resources as well as the environment. In addition, as with any University academic unit it undertakes research and extension services. It is currently headed by Dr. Oheneba Akyeampong as the Acting Dean with administrative support from staff headed by Mr. Eric L. Mwintome.

OVERVIEW

The School is made up of the following Departments:

- Ecotourism, Recreation and Hospitality
- Environmental Management
- Entrepreneurship and Business Science
- Fisheries and Water Resources
- Forest Science
- Department of Languages and General Studies

These Departments together offer BSc. Natural Resource Management (with options in Social Forestry, Ecotourism, Land Reclamation and Restoration, Wood Science and Forest Resources Management. In addition, the Department of Ecotourism, Recreation and Hospitality also offers BSc. Hospitality Management while the Department of Environmental Management also offers BSc. Fire and Disaster Management.

There is also the Department of Entrepreneurship and Business Science offering BSc. Resource Enterprise and Entrepreneurship. The Department of Languages and General Studies provides services to the School and the University as a whole. During the year under review, the University established the Centre for Climate Change and Gender Studies (CCCGS) which is one of the research units of the University and is part of the School of Natural Resources.

STUDENT STATISTICS

Year/Level	**Male**	**Female**	**Total**
100	147	70	217
200	217	80	297
300	203	73	276
Total	**567**	**223**	**790**

KEY ACTIVITIES

During 2016/2017 academic year, the School instituted a School wide research theme titled *Sustainable Development* under which various teams of Senior Members are undertaking investigations from diverse perspectives. The School also instituted weekly seminars during which two (2) Senior Members presented papers every Wednesday afternoon.

On November 21, 2016, the School hosted, on behalf of the University a contingent of about thirty (30) senior officers from the Ghana Armed Forces Staff and Command College that visited UENR as part of its study tour of the Brong Ahafo Region.

DEPARTMENT OF ECOTOURISM, RECREATION AND HOSPITALITY

Introduction

The Department of Ecotourism, Recreation and Hospitality is among the four Departments of the School of Natural Resources. The Department seeks to produce graduates capable of working either as employees or as entrepreneurs in the tourism sector that has over the last two decades moved from the sidelines to the centre stage of Ghana's economic policy.

Graduates from the Department are equipped with strong and vibrant leadership skills to manage ecotourism prospects of the country and manage the hospitality sector of the tourism industry to meet the increasing demand for recreation, tourism, biodiversity conservation and green species. The Department offers and prepares students for a four-year degree, leading to the award of BSc. Natural Resource Management (Ecotourism option and Wildlife and Range Management option) and BSc. Hospitality Management.

Philosophy

Using a strong partnership approach, prepare future leaders and provide solutions in the conservation and sustainable development of ecotourism resources in Ghana. The vision and mission of the Department is in consonance

with that of School of Natural Resources (SNR) and the University of Energy and Natural Resources (UENR).

Programmes

Undergraduate programmes

Currently the Department runs two undergraduate programmes:

- BSc. Natural Resources (Ecotourism option and Wildlife and Range Management)
- BSc. Hospitality Management.
  Preparations are underway to introduce the following programmes:
- BSc. Hospitality Management (Top Up)
- BSc. Tourism Resources Management (Regular)

Activities over the past year

- The Department is currently monitoring the Staw coloured fruit bat *(Eiodolon helvum)* population and the results are found on www. Eidolon.org website of Afribat, a conservation branch of Bat Conservation International for African birds.
- On March 3rd 2017, the Department celebrated the World Wildlife Day in collaboration with the Wildlife Society. Over hundred (100) JHS students were invited to join the celebration.
- The Department launched a book titled 'Tourism Development in Ghana's Brong Ahafo Region: Demand and Supply Dynamics"edited by Oheneba Akwesi Akyeampong.
- The Department is also collaborating with the Brong Ahafo Regional Tourism Authority to develop the Duasidan Monkey Sanctuary (near Dormaa Ahenkro) into an ecotourism site.

Teaching Staff and their Qualifications

There is one Senior lecturer, six Lecturers, one Assistant Lecturer and one Technician in the Department. Their names and qualifications are given in the table below.

Name	Designation	Academic Qualification
Dr. Oheneba Akyeampong	Senior Lecturer	PhD (Stockholm); MSc. (Kalmar, Sweden); BA. (Ghana); Dip. Ed.
Dr. Yaw Boakye Agyeman	Lecturer	PhD (Waterloo)MSc. (Wageningen); BSc. (KNUST)
Dr. Daniella Delali Sedegah	Lecturer	PhD (UG); MPhil (UG); BSc. (UDS, Tamale)
Mr. Richard Obour	Lecturer/HoD	MPhil (KNUST); BSc. (KNUST).
Mr. James Agyei-Ohemeng	Lecturer	MPhil. (KNUST); BSc. (UCC); PG. Dip. (UCC); Dip. Ed. (UCC)
Mr. Ricky Yao Nutsugbodo	Lecturer	MPhil (UCC); BSc. (UCC)
Miss Olivia Naa Ayorkor Tetteh	Lecturer	MSc. (KNUST); BSc. (KNUST); HND (Accra Poly); Dip. Ed. (UEW)
Miss Mildred Nuoung Deri	Ast. Lecturer	MPhil (UCC); B.Tech (Ho Poly); HND (HCIM, Accra Poly)
Miss Abena Gyamfuaa	Technician	HND (HCIM, Sunyani Poly)

OHENEBA AKYEAMPONG

Research Activities

- Profiling Event Attendees
- Event tourism in Brong Ahafo Region
- Tourism intermediaries in Brong Ahafo Region

Publication(s)

- **Akyeampong, O.** & Yankholmes, A. (2016). Profiling masquerade festival attendees in Ghana *Journal of Events Management*, Vol. 20 (2), pp285-294.

- **Akyeampong, O**. & Nutsugbodo R.Y. (2016) Adoption of ICT by Hotels, in Akyeampong, O. (Ed) *Tourism Development in Brong Ahafo: Supply and Demand D*ynamics, Sunyani: Xtrym consortium, INC, pp. 89-108

- **Akyeampong, O**. (2016) Event tourism in Brong Ahafo Region, in Akyeampong, O. (Ed) *Tourism Development in Brong Ahafo: Supply and Demand D*ynamics, Sunyani: Xtrym consortium, INC, Pp 131-171

- **Akyeampong, O.** & Agyei-Ohemeng J.(2016)Transport and Tourism, in Akyeampong, O. (Editor) *Tourism Development in Brong Ahafo: Supply and Demand D*ynamics, Sunyani: Xtrym consortium, INC, pp. 172-189

- Sampson, W.G & **Akyeampong, O**. (2014) Work-related Stress in Hotels: An Analysis of the Causes and Effects among Frontline Hotel Employees in the Kumasi Metropolis, Ghana, dx.doi.org/10.4172/2167-0269.1000127

- Agyeiwaah, E., **Akyeampong,** O. & Amenumey, E. (2014) International tourists' motivations to choose homestay: Do their socio-demographics have any influence on*Tourism and Hospitality Research*, vol. 13(1), pp.18-28.

- Mensah, C., **Akyeampong, O.** & Antwi, B. (2013) Residents' Perception of Impacts of Amansuri Conservation and Integrated Development Project in Jomoro District, Western Region, Ghana. *Journal of Sustainable Development*, vol. 6 (5), pp.73-84

Conferences/Workshops/Seminars

- Participant: 'Building capacity of fish farmers to adapt to climate change', A one-day workshop organized by the Department of Fisheries and Water Resources, with sponsorship from CIRCLE at UENR Auditorium on 16th March, 2017

- *Resource Person*: United Nations World Tourism Day Workshop, organized by Ghana Tourism Authority at the University of Energy and Natural Resources, September 27, 2015

Outreach Programmes/Extension Services

- *Member,* National Accreditation Board Assessment Panel: B.Sc (Business Administration) programme, Hospitality and Tourism Management option, School of Business, Ghana Institute of Public Administration, Achimota, Accra, and 19th April, 2017.

- *Chair,* National Accreditation Board Assessment Panel: B.Sc (Hospitality and Tourism Management) programme, School of Business, Lucas College, Dzorwulu, Accra, and 17th October 2016.

- *Member,* National Accreditation Board Assessment Panel: HND (Hotel, Catering, and Institutional Management) programme, Department of Hospitality and Tourism Management, Ho Technical University, Ho 18th October, 2016

- *Reviewer*: Annals of Tourism Research; Journal of Tourism Management; Journal of Sustainable Development
- *Chair*: Brong Ahafo Regional Tourism Awards Night, Glamossay Hotel, Sunyani, November 6, 2015

DANIELLA D. SEDEGAH

Publication(s)

- **Daniella, D. S.** (2016). *Community Participation in Ecotourism in The Brong Ahafo Region* in Akyeampong O. A. (Ed.) Tourism Development in Ghana's Brong-Ahafo Region: Demand and Supply Dynamics. Sunyani: Xtrym Publications."
- **Daniella, D. S.** and Efua Esaaba Mantey (2016) *Demand Responsive Approach and Its Significance for Sustainable Management of Water Facilities in the Shai Osudoku District*. Ideal Journal of Economics and Management Studies (2016), ISSN: 2067-7721.
- **Daniella, D. S.** Salami Ayobami Taofik & Ajayi Adesola. (2016) *Coping Strategies: A Comparative Analysis of Climate Change and Rural Farming CommunitiesiIn Semi-Arid and Forest Regions In Nigeria.* Fifth International Conference on Climate Change Adaptation 2016.

- Tuffour M., **Daniella D. S.,** Ohene– Nana A. A. B.**,** (2013) *Is it Appreciation with Caution? Attitude towards GM Foods***.** Asian Journal of Agric and Food Sciences. October 2013, ISSN:2321-1571, Vol. 01-Issue 4

- **Daniella, D. S.** & Michael Tuffour. (2014). *Demand Responsive Approach (DRA): A Neo-liberal Approach to Water Delivery and Management in Rural Ghana. February 2014,* The International Journal of Humanities and Social Studies (ISSN 2321-9203)

Conferences/Workshops/Seminars

- Participant: 5th Climate Change and Population Conference on Africa (CCPOP-Ghana), 19th-21 July, University of Ghana. Hosted by the Regional Institute for Population Studies, University of Ghana, Legon
- Presenter: 5th International Conference on Climate Change Adaptation. 15th-16th October, 2016 at Ryerson University, Toronto, Canada
- Presenter: 6th Annual Colloquium of Faculty of Social Sciences, University of Ghana, Legon. The Social Sciences and the Development Discourse. Organized at the Institute for Statistical, Social and Economic Research, ISSER, from March 21st to 22nd, 2013. Topic: Does the

Demand Responsive Approach (DRA) lead to improved functionality of rural water facilities?

Outreach Programmes/Extension Services

- Reviewer: Water Resources Research, American Geophysical Union.

NUTSUGBODO RICKY YAO
Research Interests/Activities

- Service Quality
- Tourism Transport
- Accommodation
- ICT Usage in Hotels

Publication(s)

- **Nutsugbodo, R. Y.** (2016). Tourist accommodation. In O. A. Akyeampong (Ed.), *Tourism development in Ghana's Brong-Ahafo Region: Demand and supply dynamics* (pp. 73-88), Sunyani, Ghana: Xtrym Consortium.
- Akyeampong, O. A., & **Nutsugbodo, R. Y.** (2016). Adoption of information and communication technologies by hotels in Akyeampong O. A. (Ed.), *Tourism development in Ghana's Brong-Ahafo Region: Demand and supply dynamics* (89-108), Sunyani, Ghana: Xtrym Consortium.
- Dauda, S., Adjei-Mensah, C., & **Nutsugbodo, R. Y.** (2014). Urban poverty in Northern Ghana: Tracing the livelihood strategies of women in the Shea Butter Industry, *Journal of Human and Social Science Research, 3*(1), 15-25.
- **Nutsugbodo, R. Y.** (2013). Tourists' perception of the quality of public transportation services in the Accra Metropolis: A SERVQUAL Approach. *African Journal of Hospitality, Tourism and Leisure, 2*(4), 1-8.

Outreach/Extension Services

- Departmental Examinations Officer
- Departmental Representative, School of Natural Resources Board
- Departmental Representative, University, Academic Board
- Patron, Association of Hospitality Management Students, UENR
- Patron, Volta Region Students Association of Ghana, UENR Chapter

Conferences/Workshops/Seminars

- *Participant*: United Nations World Tourism Day Workshop, organized by Ghana Tourism Authority at the University of Energy and Natural Resources, September 27, 2015

RICHARD OBOUR

Research Activities/ Interests

- Wildlife Development
- Environmental Ecology
- Traditional conservation of wildlife

Publication(s)

- **Obour, R.,** Asare, R. Ankomah, P. K. and Trent, L. (2016). **"**Poaching and its Potential to Impact Wildlife Tourism: An Assessment of Poaching trends in the Mole National Park in Ghana". *Athens Journal of Tourism, Vol X, No. Y*
- Boakye Agyeman, Y. & **Obour, R.** (2016). Ecotourism Development: Prospects and Challenges, in Akyeampong, O. (Editor) *Tourism Development in Brong Ahafo: Supply and Demand D*ynamics, Sunyani: Xtrym Consortium INC, pp. 31-54
- **Obour, R.,** Oppong, S. K. and Abebrese, I. K. (2015). "Forage Palatability of *Broussonetia papyrifera* an Invasive Species in Ghana: Relative Preference and Palatability". *Journal of Energy and Natural Resources Management (JENRM),* Vol. 2. No. 2 pg 63-70

- **Obour, R.,** Amankwaa, D. and Asare, A. (2015). **"**Illegal Rattan Extraction Trends in the Ankasa Conservation Area in Ghana"*JENRM, Vol 2No. 3 pg 84-92*

Conferences/Workshops/Seminars

- *Resource Person*: United Nations World Wildlife Day Clebration, organized by the Department of Ecotourism, Recreation and Hospitality in collaboration with Wildlife Society of Ghana at the University of Energy and Natural Resources, March 3, 2017
- *Participant:* A one day training workshop for senior members at UENR Auditorium on 26th January, 2017

YAW BOAKYE AGYEMAN

Research Activities/ Interests

- Recreational Studies
- Ecotourism management
- Ecotourism and rural livelihood development

Publication

- Eagles, P. F. J. & **Agyeman, Y. B.** (2011). Ecotourism destination planning guidelines. Department of Recreation and Leisure Studies, University of Waterloo, Canada.

JAMES AGYEI-OHEMENG

Research interests

- Ghana's Wildlife Mystery
- Opportunities in protecting bat colonies
- Charcoal trade

Publication(s)

- **Ohemeng. A. J.** and Dankwa, E. (2016) "The Contribution of Fruit bats, Eidolon helvum, to biodiversity on the University of Energy and Natural Resources' Campus, Sunyani, Ghana", *Journal of Natural Sciences Research*, Vol 6, No 18, pp. 74-82 (2016).

OLIVIA NAA AYORKOR TETTEH

Research interests

- Food science and safety

Publications

- **Tetteh, O. N. A.,** Golly, M. K. and Sarkodie, N. A. (2013). Development of Spice from Turkey Berry (*Solanum torvum*). *Institute of Hospitality, Ghana, 4th National Conference.*
- Sarkodie, N. A.; Bempong, E. K.; **Tetteh, O. N. A.**; Saaka, A. C. and Moses, G. K. (2014). Assessing the Level of Hygienic Practices among Street Food Vendors in Sunyani Township. *Pakistan Journal of Nutrition*; Vol. 13 Issue 10, p610
- Sarkodie, N. A., Commey V., **Tetteh, O. N. A**., Constance A. S. and Moses G. (2014). Assessing Consumption Pattern and Dietary Practices of Pregnant Women in Sunyani Township. *International Journal of Innovative and Applied Research,* ISSN 2348 – 0319, Volume 2, Issue (5): 30 – 38.

DEPARTMENT OF ENTREPRENEURSHIP & BUSINESS SCIENCES

INTRODUCTION

The Department of Entrepreneurship and Business Sciences is one of the Departments in the School of Natural Resources. It was established in August, 2016. The Department seeks to develop students' analytical, technical and entrepreneurial skills to take optimal socio-economic decisions and conduct

research. The department offers a four year programme leading to the award of BSc. Resource Enterprise and Entrepreneurship

The Department has initiated plans to mount the following programmes for the 2017/2018 academic Year:

- Top-up programme for HND and other Diploma Holders
- Diploma in Enterprise Management
- Certificate in Entrepreneurship

DEPARTMENTAL RESEARCH FOCUS

The Department has initiated team research projects where each member is required to contribute to research in various specialties in the Department. The areas of focus are:

- Entrepreneurship and small enterprise development
- Entrepreneurial Intention among Tertiary students
- Small Business Management
- Revenue Mobilisation of District Assemblies
- Creativity and Innovation

STAFF DEVELOPMENT

- One Senior Member is pursuing PhD in Management and Commerce (Entrepreneurship option)

The Department still requires teaching staff in the areas of marketing, economics and entrepreneurship.

TEACHING STAFF

Name	Qualification	Designation	Areas of Specialization
Reginald Djimatey	MBA, BA	Ag.HoD/	Entrepreneurial Education/Small Business

		Lecturer	financing/ Creativity & Entrepreneurship
Daniel Berko	MBA, B.Com	Asst. Lecturer	Finance/Small Business Management/ Micro-finance
Paul Hammond	MBA, B.Ed, ICAG	Asst. Lecturer	Accounting/Entrepreneurial Finance/Taxation

REGINALD DJIMATEY

Research interests

- Creativity and entreprenuership
- Small business financing
- Entrepreneurial Education

Publication(s)

- *Dick-Sagoe,C .and* ***Djimatey R.*** *(2015*), The Structure of District Assemblies' Finances: The case of Abura-Asebu-Kwamankese District in the Central Region ofGhana

Outreach/Extension Services

- Vice President, UTAG-UENR Branch
- Member, Entity Tender Board
- Chairman, Greena FM Board

DANIEL BERKO

Research Activities/Interest

- Small Business Management
- Micro-Finance Enterprises and Sustainable Development
- Organisational Behaviour

Outreach/Extension Services

- Departmental Representative to School/Academic Board

PAUL HAMMOND

Research Activities/Interest

- Entrepreneurial Finance
- Taxation
- Small Business Development

Outreach/Extension Services

- Departmental Examination Officer

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

INTRODUCTION

The Department of Environmental Management (DEM) is under the School of Natural Resources. The mission of DEM is to build competence and promote teaching, research and outreach programmes that address critical issues in the area of land reclamation and restoration practices, fire and disaster management, sustainable management of environment, water and mineral resources.

ACTIVITIES OVER THE PAST YEAR

During the year under review, DEM in collaboration with EORIC and University of Applied Forest Sciences – Germany, engaged in Exchange Visiting Scholar Programme dubbed: *Learning From Each Other: Developing Together* (*Miteinanderforschen, voneinanderlernen: Austausch in Forschung und Lehrezwischen der UENR in Ghana und der HFR in Baden Württemberg).* This exchange programme aimed at training faculty and students in Agriculture/ Forestry, Water Resources Management and Energy. A student of the Department, Ms. Precious Opoku Dapaah benefited from this exchange programme.

DEM has also benefited from an Exchange Visiting Scholar Programme aimed at training experts in the area of Carbon Sequestration Monitoring. This

institutional collaboration involves the Department, EORIC and Global Change Research Institute (Czech Globe), University of Mendel, Brno (Czech Republic). One of our faculty members, Mr. Thomas Adjei is currently benefiting from this programme.

DEM is collaborating with the Department of Fisheries & Water Resources and EORIC in developing a Postgraduate Programme [PhD/ MPhil/ Professional MSc] in Water, Environment and Sustainability, to be known as *The WES Programme*. This graduate programme is being developed in consultation with the Ghana Water Company Ltd. and Community Water and Sanitation Agency. DEM is also collaborating with Ghana National Fire Service (Brong Ahafo Regional Headquarters) in developing a Postgraduate Programme in Disaster Management and Emergency Response. A concept paper has been developed and consultations are on-going.

DEM entered into agreement with some institutions across the country to assist the Department train our third year students. This was in connection with the Department's Industrial Attachment Programme for the 2016/ 2017 Academic year.

DEM in collaboration with the Department of Forest Science has started a Top-up programme in BSc Natural Resources Management (with an option in Land Reclamation and Restoration.

The the following constitute the membersof staff of the Department. Their names and qualifications are given in the Table below.

Name	**Qualification**	**Designation**	**Area of Specialisation**
Dr. Kwame T. Ampofo	PhD, MSc. (Dundee) Pg Dip, BSc (KNUST)	Senior Lecturer	Agroforestry Resource Management; Forestry
Dr. Fred Owusu-Ansah	PhD (SUNY-ESF, USA) MPhil (UG) BSc. (UG)	Lecturer/HoD	Environmental Mgt and Policy; Water and Wetland Resources Mgt; Risk Perception, Entomology

Mr. Paul K. Nsiah	MSc., BSc (KNUST)	Lecturer	Environmental Resources Mgt; Natural Resource Mgt.
Dr. David Anaafo	PhD (Australia) M.Sc.(Dortmund/ KNUST) B.Sc (KNUST)	Lecturer	Regional Development; Planning and Management
Dr. Mary Antwi	PhD (KNUST), MSc (Casablanca) BSc (KNUST)	Lecturer	Soil Science; GIS and Land Management; Geodetic Engineering
Mr. Benjamin O. Carlis-Paittoo	MSc (KNUST) MA, MSc (UCC)	Assistant Lecturer	Public Health; Fire Science; Disaster Mgt Forensic Audit
Mr. Thomas Agyei	MSc. (Finland) B.Ed (UEW)	Assistant Lecturer	Environmental Biology; Biological Sciences
Mr. Alex Amerh Agbeshie	M.Phil (KNUST) B.Sc (UDS)	Assistant Lecturer	Soil Science; Agronomy; Agriculture Technology

DR. KWAME T. AMPOFO

Research Activity/ Interest

- Agroforestry practices; Land reclamation; Resources management

Publication(s)

- Abugre, S., **Twum-Ampofo, K.** and Oti- Boateng, C. (2015) Compatibility of Jatrophacurca with maize in a hedgerow intercropping system on ferric acrisols. *Agriculture, Forestry, Fisheries,* **4**(3): 109-116.

Outreach Programme/Extension Service

- Chairman, Top Up Co-ordinating Committe

DR. FRED OWUSU ANSAH

Research Activities/Interests

- Mining and agriculture; Municipal solid waste management and climate change; developing and analysing policies in relation to mineral resources, agriculture, environment, water/wetland resources, solid waste, energy and climate change; Risk perception, assessment and communication.

Publication(s)

- **Owusu-Ansah, F**. and Smardon, R.C. (2015). Mining and Agriculture in Ghana: A Contested Terrain. *Int. J. Environmental and Sustainable Development*, Vol.14, No. 4, 371-397.
- Derkyi, M., Awuah, E., Obeng-Ofori, D., Derkyi, S. A., and **Owusu-Ansah, F.** (2014). Climate Change and its Impact in Africa: the Role of Science and Engineering for combat, *African Regional Conference Technical Proceedings, OWSD/UENR*: Sunyani, Ghana. 942p

Outreach Programmes/ Extension Services

- Member, Executive Committee, UENR. 2017.
- Member, Circle Implementation Committee, University of Energy and Natural Resources (UENR), Sunyani. September, 2015.
- Technical Editor, Journal of Energy and Natural Resource Management (JENRM), University of Energy and Natural Resources (UENR), Sunyani. August, 2015:
- Member, Committee to Investigate Examination Malpractices, University of Energy and Natural Resource (UENR), Sunyani. May 2015:
- Member, Editorial and Advisory Board, *Current World Environment* (An International Research Journal of Environmental Science).

- Member, SDF/COVET Fire and Disaster Programme Implementation Committee, University of Energy and Natural Resources (UENR), Sunyani. February, 2015**:**
- Member, Research and Conference committee, UENR, August 2014
- Reviewer, Sage Open Publications, USA. May, 2014:
- Ag. Coordinator, Industrial Attachment and Placement Programme, School of Natural Resources, University of Energy and Natural Resources (UENR) October, 2014-2015:
- Member, School Board, School of Natural Resources, University of Energy and Natural Resources (UENR), Sunyani. 2014-2016

DR. DAVID ANAAFO

Research Activities/ Interests

- Sustainable Propertyand Pro-poor Land Policy
- Urban Planning, City Governance and Post Disaster Recovery
- Decentralisation and Local Governance
- Environmental and Natural Resources Management

Publications

- Anaafo, D., & Inkoom, D. K. B. (2015). Land Governance and Decentralised Physical Planning in mid-Sized Cities in Ghana: a Case Study of the Nkoranza South Municipality. Urban Forum (pp. 1-19). Springer Netherlands.

- **Anaafo, D.,** & Guba, B. (in press). Do land reforms have adverse impacts on the livelihoods of poor land users? Evidence from the Nkoranza South municipality. *Canadian Journal of African Studies (Ref: RCAS-2016-0025.R2)*

Outreach Programmes/ Extension Services

- **Chairman**, Research and Technical Committee, Department of Environmental Management, August 2016

- **Presiding Officer,** 2016 Presidential and Parliamentary elections, December 7, 2016

- **Chairman,** environmental sustainability committee, September 13, 2016

- **Representative,** Department of Environmental Management on the Examinations Board of the School of Natural Resources,

- **Co-opted Member & Abstracts Coordinator,** Local Organising Committee, International Conference on Climate Change and Sustainable Development in Africa, Since January, 2017

DR MARY ANTWI

Research Activities/ Interests

- GIS and remote sensing technologies/Geospatial analysis
- Integrated soil fertility management
- Land management systems
- Environmental management/Disaster risk reduction and modelling
- Surveying and mapping

Publication(s)

- **M. Antwi,** A. A. Duker, M. Fosu and R. C. Abaidoo. (2017). Simulation of major soil nutrients requirement for maize production using the QUEFTS model in the Northern region of Ghana. *Direct Research Journal of Agriculture and Food Science*, Vol 5 (3).
- **M. Antwi**, A. A. Duker, M. Fosu and R. C. Abaidoo. (2016). Geospatial approach to study the spatial distribution of major soil nutrients in the Northern region of Ghana. *Cogent Geoscience*, 2: 1201906.
- **M. Antwi**. (2015). Using geospatial analysis to monitor impact of integrated soil fertility management on major soil nutrients in selected Districts of Northern Region, Lambert Academic Publishing, Germany. ISBN: 978-3-659-80782-4

Outreach Programmes/ Extension Services

- Member, Research and Technical Committee, Department of Environmental Management
- Member, Committee to develop proposal on Environmental Sustainability for the School of Natural Resources 2016)
- Facilitator, Maiden UENR Science Festival (January, 2017)
- Invigilator, end of first and second semesters 2016/17 academic year examinations

MR. ALEX AMERH AGBESHIE

Research Activities/ Interests

- Quantifying the effect of Soil Pollution on the functioning of soil, plant and water systems.
- Nutrient cycling on reclaimed lands for long term soil sustainability and environmental protection.
- Nitrogen dynamic of agricultural, forest and reclaimed soils.

Publications

- **Agbeshie, A. A.,** Logah, V. and Opoku, A. (2017). Impact of poultry manure on soil mineral nitrogen variations in a compacted soil. Archives of Agronomy and Soil Science.

Outreach Programmes/ Extension Services

- Coordinator: Weekly Seminar Top-Up Students (SNAR).
- Member: Northern Africa Regional Meeting (NARM) 2017
- Invigilator: Top-up Programme (SNAR).School of Natural Resources

MR. THOMAS AGYEI

Research Activities/ interests

- Effect of climate change on biodiversity
- Effect of phytotoxic ground-level ozone on emission rate of biogenic volatile organic compounds
- Land degradation and its effects on biodiversity
- Emissions of nitrous oxide and methane from forest trees

Publication(s)

- **Agyei, T. (2013).** Methods to identify and detect microbial contaminants in drinking water. In Heinonen-Tanksi, H. (Ed.), safe drinking water in all areas: Publication series of Department of Environmental Science, University of Eastern Finland (100-109). Kuopio: University of Eastern Finland.

Outreach Programmes/ Extension Services

- Member, Local Organising Committee on AfriGEOSS Symposium, 13-15 June 2017, UENR/EORIC
- Member, Committee on Sustainable Development for Environmental Management Department

MR. BENJAMIN OSAFO CARLIS - PAITTOO

Research Activities/ Interests

- Fire Science
- Disaster Management
- Forensic Audit

Publication(s)

- Carlis- Paittoo (2011) Environmental Management in the Oil & Gas Industry – Ghana Offshore Magazine, Issue 4 – August 2011

DEPARTMENT OF FISHERIES AND WATER RESOURCES

Introduction

The Department of Fisheries and Water Resources currently offers a BSc. Natural Resources degree programme specializing in Fisheries and Aquaculture. The emphasis of the programme is on aquaculture; however, other aspects of fisheries courses are well catered for, thereby making our students very versatile in both capture fisheries and aquaculture sectors.

This programme aims at creating the enabling environment for students to acquire in-depth knowledge and skills for fish culture and sustainable management of the fishery resources for the benefit of the country. In addition, it will provide sound scientific and technological basis for fisheries policies and management strategies to be integrated into national goals.

The specific objectives are to:

- Develop manpower needs of the fisheries sub-sector;
- Provide training leading to job creation; Provide consultancy services to government agencies and private fish farmers;
- Promote education and public awareness of consequences of aquatic pollution and health implications of fish farming;
- Provide training for students who wish to pursue postgraduate degree, especially in aquaculture, fisheries and aquatic resources exploitation and management.

ACTIVITIES OVER THE PAST YEAR

During the 2016/2017 academic year, the Department, in collaboration with the Department of Fisheries and Aquatic Sciences, University of Cape Coast organized a five-day workshop on fisheries management for Marine Fisherman at Sasakawa Centre, University of Cape Coast.

The Department, under the auspices of CIRCLE Programme organized a one-day training workshop on best practices in fish farming in relation to climate change for fish farmers in the Brong-Ahafo Region.

Currently the Department, in collaboration with Profag Ltd., an agribusiness entity in Sunyani in the Brong Ahafo Region, is running a Demonstration Farm, which serves as a facility for hands-on practice for undergraduate students in aquaculture. The Demonstration farm sold table size tilapia to the staff of the university during the first cycle of production and we hope to continue with production. Commercial production of sex-reversed all-male Nile tilapia fingerlings has been started and patronage from farmers has been encouraging.

FUTURE PLANS

The Department will soon embark on a radio programme in Aquaculture Extension Service on the University's radio station, Greena FM. We also hope to complete the establishment of the Aquaculture Learning Centre to serve as a training facility for students, fish farmers and prospective fish farmers in hatchery management, fingerlings production, brood stock management etc. The Centre will also serve as a research centre for aquaculture. The Department has initiated plans for the introduction of a Diploma programme in fisheries and aquaculture and a Top-up BSc degree programme in Natural Resources Management (Fisheries and Aquaculture option) for Diploma holders.

TEACHING STAFF

The following are the Teaching Staff of the Department

Name	Qualification	Designation	Area of Specialisation
Mr. George Intsiful	BSc, MPhil, Dip Ed. (Cape Coast)	Lecturer/Ag. HoD	Marine Ecology, Fishery Biology, Aquaculture,
Dr. Peter Osam Sanful	B.Sc (KNUST), PhD (KNUST)	Lecturer	Limnology, Fish Ecology, Conservation Ecology
Mr. Amos Asase	Mphil (UG), BSc (UG)	Assistant Lecturer	Capture and culture fisheries management

MR. GEORGE INTSIFUL

Research Activities / Interests

Coastal Marine Ecology, Aquaculture, Aquaculture Engineering, Phytoremediation, Freshwater Ecology

Publication

- **Intsiful, G.,** Nunoo, F. K. E., Asiedu, B., and Asase, A. (2017). Introduction to Fisheries. In: Centre for Coastal Management, *Training manual on fisheries management*. Centre for Coastal Management, Cape Coast. 95 pp.

Ongoing Research Projects

- Utilization of the Aquatic Macrophytes, *Lemna* sp. and *Spirodella* sp. in Fish Nutrition
- Reproduction and growth responses of black chin Tilapia *Sarotherodon melanotheron* to salinity under culture conditions

Workshops/Conferences

- Facilitator: Testing of Training manual on fisheries management organized by USAID/Department of Fisheries and Aquatic Sciences UCC at Sasakawa Centre, University of Cape Coast, 12-16th December, 2016.l

DR. BERCHIE ASIEDU

Research Activities/Interests

- Fisheries, aquaculture, fisheries management, fisheries & aquaculture economics, climate change
- Aquaculture development & policy, fisheries socio-economics, fish processing & quality control
- Value chain analysis, fish trade and marketing

Publication(s)

- **Asiedu, B.**, Adetola Jenyo-Oni and Kissi, O.I. (2017). Aquaculture in troubled climate: farmers' perception of climate change and their adaptation.*Cogent Food and Agriculture* 3:1296400
- Beyens, Y., Failler, P. and **Asiedu B.** (2017). Institutional challenges and constraints for Ghana in exporting fishery products to the European Union. *Food Reviews International*. DOI: 10.1080/87559129.2017.1289386
- **Asiedu B.** and Henneh, S. (2016). Sustaining aquaculture development: a comparative study of Multi feed and Rannan feed on the growth performance of Nile Tilapia (*Oreochromis niloticus*) in an earthen pond system. *Journal of Applied Sciences Research*. 12:9, 50-57.
- **Asiedu, B.,** Asase, A, Iddrisu, S. and Ayisi, L. C. (2016). Management, Challenges and Developments of Aquaculture in Ghana, West Africa. Nova Science Publishers Inc, New York. **ISBN:** 978-1-63485-563-1. pp. 1-28., 90 p.
- Nunoo, F.K.E., **Asiedu, B.,** Amador, K., Belhabib, D. and Pauly. D. (2016). Reconstruction of Marine Fisheries Catches for Ghana, 1950-2010. In: D. Pauly and D. Zeller (eds.) Global Atlas of Marine Fisheries: A Critical Appraisal of Catches and Ecosystems Impacts. Island Press, Washington, D.C. 520 pp. ISBN: 9781610917698**.**

Conferences/Workshops/Seminars

- 4th International Conference on Fisheries and Aquaculture 2017. Paper presented: *"Aquaculture in troubled climate: Farmers' perception of climate change and their adaptation strategies in Ghana, West Africa".* February 20-22, 2017. San Antonio, USA.

- CIRCLE Cohort 2 Post-Fellowship Workshop (AAS, Nairobi-Kenya). 6th-8th Feb., 2017

- USAID-Ghana/UCC/DFAS Fisheries and Coastal Management Capacity Building Support Project: Attended the Lunch of FishCom Ghana. 26th January, 2017, Legon, Ghana.

- Climate Change and Aquaculture Development in Ghana.

Presentation at CVF, University of Ibadan, Nigeria. 5th October 2016.

- USAID-Ghana/UCC/DFAS Fisheries and Coastal Management Capacity Building Support Project, National Scientific Meeting on Fisheries and Coastal Environment **Theme**: 'Developing Marine and Coastal Fisheries Database. 25th-26th August, 2016. Accra, Ghana.

- USAID-Ghana/UCC/DFAS Fisheries and Coastal Management Capacity Building Support Project, National Scientific Meeting on Fisheries and Coastal Environment on 'Sustaining fisheries and the coastal environment through research. 27th-29th April, 2016. Cape Coast, Ghana.

- Research and Grants Writing for Doctoral Students. 22nd-24th Feb., 2016**.** (Research Management Office, University of Ibadan, Nigeria).

Outreach Programmes/Extension Services

- Reviewer: West African Journal of Applied Ecology, Current Agriculture Research Journal, Research Journal of Environmental Science.

DR. PETER O. SANFUL

Research Activities/Interests

- Stream and river ecology
- Fish ecology in streams
- Aquaculture and water quality
- Climate change resilience in aquatic systems
- Zooplankton ecology

Publications

- **Sanful**, **P.O**., S. Aikins, E. Frempong., R.I Hall and R.E Hecky (2017) Temporal dynamics and relationship between climate, limnological variables and zooplankton composition in climate-sensitive Lake Bosumtwi, *African Journal of Aquatic Science.*42: 21–33:
- **Sanful**, **P.O**., E.Frempong, S. Aikins and R.E Hecky. 2013.Production of crustacean zooplankton and biomass of major rotifer species in tropical Lake Bosumtwi (Ghana, West Africa). *African Journal of Ecology,* 51: 456 – 465
- **Sanful**, **P.O**., E.Frempong, S. Aikins, R.I Hall and R.E Hecky.2012. Secondary Production of *Chaoborus ceratopogones* (Diptera; Chaoboridae) in Lake Bosumtwi*, Journal of Freshwater Entomology*, 34: 115-130

Conferences/Workshops/Seminars

- **Resource person:** Aquaculture adaptation to climate change – CIRCLE Workshop, UENR, March 2017

Outreach Programmes/Extension Services

- Reviewer for International Review of Hydrobiology
- Reviewer for International Journal of Fisheries and Aquaculture

MR. AMOS ASASE

Research Activities/ Interests

Research Interests:

- Fish farming principles and practices
- Fisheries science
- Capture fisheries management
- Biodiversity informatics

Publication(s)

- **Asase, A.** (2017). *Fisheries Management-Need, Process and Data Requirements*. In: F.K.E. Nunoo (ed.). Training Manual on Fisheries Management. pp. 26-41. Centre for Coastal Management, University of Cape Coast, Ghana. ISBN: 978-9988-2-5134-5.
- **Asase, A.** (2017). *Fisheries Management-Scope and Approaches*. In: F.K.E. Nunoo (ed.). Training Manual on Fisheries Management. pp. 43-58. Centre for Coastal Management, University of Cape Coast, Ghana. ISBN: 978-9988-2-5134-5.
- **Asase, A**., Nunoo, F.K.E. and Attipoe, F.Y.K. (2016). Lake-Based Nursery Rearing of Nile Tilapia (*Oreochromisniloticus*) Fingerlings in Nylon Hapas: Effects of Stocking Density on Growth, Survival and Profitability. *Agricultural Sciences*, 7, 660-669. http://dx.doi.org/10.4236/as.2016.710062.
- Asiedu, B., **Asase, A**., Iddrisu, S. and Ayisi, C. L. (2016). *Management, Challenges and Developments of Aquaculture in Ghana, West Africa.* In: J.G. Buchanan (ed.). Aquaculture: Management, Challenges and Developments. pp. 1-28. Nova Science Publishers Inc., New York. ISBN: 978-1-63485-563-1.

Conferences/workshops/seminars:

- Tutor, (Modules 2 and 3). Fisheries Management Short Course organized by Centre for Coastal Management, University of Cape Coast. Samrit Hotel, Cape Coast (20-24th March, 2017).
- Trainer **(***Best sampling practices in fish farming*). Climate Change Research Uptake Training Workshop for Fish Farmers and Practitioners organized by Climate Impact Research Capacity and Leadership Enhancement (CIRCLE). University of Energy and Natural Resources Auditorium, Sunyani (16th March, 2017).
- Presenter, Training manual testing for United States Agency for International Development (USAID)/Department of Fisheries and Aquatic Sciences. Sasakawa Hotel, University of Cape Coast (12-16th December, 2016).

- Presenter, *Effects of Stocking Density on Growth, Survival and Profitability of Nile tilapia fingerlings reared in net cages on the Volta Lake'*School of Natural Resources Seminar.University of Energy and Natural Resources, Sunyani. (October, 2016).
- Participant, International Conference on Fish Nutrition. Theme: *Agro by-products in animal feed production in West Africa.* KNUST, Kumasi (August, 2016).

Outreach/Extension Services

- Member, Industrial Attachment Committee, School of Natural Resources, UENR. 2015/2016 academic year to present.
- Co-ordinator, Field trips and attachments, Department of Fisheries and Water Resources, UENR, 2015/2016 academic year to present.
- Academic Tutor, UENR, 2015/2016 academic year to present.
- Invigilator (UENR): 2015/2016 academic year to present. Various centres.

DEPARTMENT OF FOREST SCIENCE

INTRODUCTION

The Department of Forest Science is one of the Departments of the School of Natural Resources. It runs undergraduate programmes in Social Forestry and Forest Resources Management and Master of Philosophy/PhD in Social Forestry and Environmental Governance. The Department also supports the School in teaching undergraduate courses in General Land Surveying, Ecology, Biodiversity conservation, Rural Sociology and Extension, Natural Resource Inventory, and Natural Resource Economics. The Department seeks to empower human resource with requisite knowledge and skills in natural resource management and social forestry to improve livelihoods of forest fringe communities and conservation forest resources. It also trains foresters, to understand the ecology of the nation's forest resources, to help restore our forests.

M.PHIL/PHD IN SOCIAL FORESTRY AND ENVIRONMENTAL GOVERNANCE

This program was started in September 2016 with an initial student intake of 41, made up of 10 PhD. and 31 MPhil. Students. At the moment, the students have completed the taught courses component of their programme. The next cohort of students will be admitted in time for the next academic year.

NURSERY PROJECT:

The School runs a nursery project which has the potential of generating income internally. The nursery comprises of a number of plant species which are made up of indigenous tree species and ornamental plants. It also serves as a reserve for maintaining plants security for research and practical purposes for students.

CAPACITY BUILDING

Mr. Daniel Akoto Sarfo is pursuing a split PhD programme at the Centre for Development Research, University of Bonn-Germany.

TEACHING STAFF

There are three Senior Lecturers, two Lecturers, one Assistant Lecturer, one Senior Assistant Curator and one Senior Technician in the Department. Their names and qualifications are given in the Table below:

Name	**Qualification**	**Designation**	**Area of Specialisation**
Mr. Isaac K. Abebrese	MPhil (KNUST) Bsc (KNUST)	Senior Lecturer/HoD	Silviculture, Forest Mgt & Ecology, Forest Policy
Dr. Simon Abugre	PhD, MSc, ; BSc (KNSUT)	Senior Lecturer	Agroforestry, Agric. Extension.
Dr. (Mrs.) Mercy A. Derkyi	PhD (UvA-AISSR), The Netherlands, MSc. &BSc. (KNUST)	Lecturer	Agroforestry; Natural Resource Governance
Mr. Alexander Baffour Afrifa	MSc. & BSc. (KNUST)	Senior Lecturer	Dev't Policy & Planning; Forest Management
Daniel Akoto Sarfo	MSc. & BSc. (KNUST)	Lecturer	Forest Management, Agroforestry
Mr. Lawrence B. Antwi (on Part-time)	MSc., (U.K.), BSc. (UST), Diploma (KNUST) Certificate (UK), EMBA: (GIMPA)	Senior Lecturer	Forest Management
Mrs. Nana Yeboaa Opuni-Frimpong	MS. (Michigan Tech) B.A. (KNUST)	Assistant Lecturer	Forestry, Policy & Law
Mr. Akwasi Sarpong	BSc.,Diploma (KNUST)	Technician	Forest Management; Land Reclamation & Rehabilitation
Mr. Edward Y. Kander	B.ED (UEW)	Asst. Snr. Curator	Agriculture

MR. I K. ABEBRESE

Publications

- Akoto, S.D; **Abebrese, I. K**, Partey, S.T and M.A.Appiah (2016). Earthern storage influence on sprouting of Terminalia ivorensis(A.CHEV) stem cuttings. Journal of Natural Sciences Research, Vol 6 No.10 107-114
- B. Kyereh, V. K. Agyeman, and **I. K. Abebrese**: (2014) Ecological Characteristics That Enhance *Broussonetia papyrifera's* Invasion in a Semi-deciduous Forest in Ghana. Journal of Ecosystems, Vol 2014, 1- 6.
- Abugre, S.; Apetogbor,M; **Abebrese I. K.**; Apetogbor, A. K. & Amoako, P. K. (2014).The effect of *Triplochiton scleroxylon* aqueous solution extract on initial growth of some vegetable crops in Ghana. JENRM,Vol.1 No 1,93-98

- B. Kyereh, V. K. Agyeman, and **I. K. Abebrese**: (2014) Ecological Characteristics That Enhance *Broussonetia papyrifera's* Invasion in a Semideciduous Forest in Ghana. Journal of Ecosystems, Vol 2014, 1- 6.

DR. MRS. MERCY AFUA ADUTWUMWAA DERKYI

Research interest

- Linkage of social-natural-governing systems.

Publication(s)

- **Mercy A. A. Derkyi**, Ton Dietz (2014) Forest Offence Types, Trends and Lapses: Case Study of the Nkawie Forest District of Ghana from 2005-2010. Agriculture, Forestry and Fisheries. Vol. 3, No. 4, pp. 224-232. doi: 10.11648/j.aff.20140304.13

- Insaidoo, T.F.G, **Derkyi, M**, Acheampong, E. (2014). Farm Level Tree Planting in Ghana: Potential for Reducing Vulnerability and Mitigating Climate Change. *JENRM, Vol., No. 1. 19-28.*

- Ros-Tonen, M.A.F., **Derkyi, M**. and Insaidoo, T.F.G. (2014) From co-management to landscape governance: Whither Ghana's modified taungya system, *Forests* 2014, *5*.

- **Mercy Derkyi** , Mirjam A. F. Ros-Tonen , Boateng Kyereh & Ton Dietz , Society & Natural Resources (2014): Fighting Over Forest: Toward a Shared Analysis of Livelihood Conflicts and Conflict Management in Ghana, Society & Natural Resources: An International Journal, DOI: 10.1080/08941920.2013.861550

- Derkyi, M.A.A. (2012). Fighting over forest: interactive governance of conflicts over forest and tree resources in Ghana's high forest zone. African Studies Collection; issue: 41, Leiden. ISBN-978-90-5448-114-0

- **Derkyi, M.,** Awuah, E., Obeng-Ofori, D., Derkyi, N.S.A and Owusu-Ansah, F (Eds.) (2014) Climate Change and its Impact on Africa: The role of Science and Engineering for Combat. 2nd African OWSD Regional Conference ***Policy Brief***

MR. ALEXANDER BAFFOUR AFRIFA

Research Interests:

- Non-Timber Forest Products Development as Livelihood Strategies for the Forest Fringe Communities,
- Wildfire Management and Rural Poverty Reduction.

Publication(s)

- **Afrifa, A.B.** and Adomako, A.A. (2014).Assessing the Growth Performance of Terminalia superba, Ceiba pentandra, Pycnanthus angolensis, and Heritiera utilis In a mixed stand at the Fure River Forest Reserve, Asian Academic Research Journal of Social Sciences & Humanities, 1(22), 536-546.

- **Afrifa, A.B**. and Essel A. (2014).Integrating Scientific and Indigenous Strategies of preventing Wildfire: A Case Study of Zukpiri and two other Communities in the Nadowli West District of Ghana, Asia Academic Research Journal of Social Sciences & Humanities, 1(21), 201-217.
- **Afrifa, A.B.**, Akoto Sarfo, D., Ghartey, K.K.F., and Ameludze, N.M., (2013). Assessment of Star Rating Species at Mamiri Forest Reserve in Ghana. Agricultural Science Research Journals, 3(2), 62-66,

DR. SIMON ABUGRE

Publication(s)

- **Abugre, S.**, Twum-Ampofo, K. and Oti-Boateng, C. (2015). Compatibility of *Jatropha curca* with maize in a hedgerow intercropping system on ferric acrisols. Agriculture, Forestry, Fisheries 4(3): 109 – 116.
- **Abugre, S**., Apetorgbor, M. M., Abebrese, I. K., Apertorgbor, A. K., Amoako, P. K. (2014). The effect of *Triplochiton scleroxylon* aqueous extract on initial growth of some vegetable crops in Ghana. JENRM 1(1): 93 – 98.
- Apetorgbor, M. M., Dabo J., Apetorgbor, A. K. and **Abugre, S.** (2013).Response of four agricultural seeds and crops to allelopathic effect of some medicinal plant species in Ghana. Journal of Agricultural Technology 9(7); 1090 – 1925.

LAWRENCE B. ANTWI

Research Interests

- Project management, forest resources management
- Wildfire management

Conferences/Seminars/Workshops

- Workshop on Teaching and assessment of students, 2nd-6th December, 2013 at UENR Auditorium Sunyani, Ghana.

- Alternate Conflict Resolution Program Held at the Catholic University College of Ghana: August 1- August 5, 2011 by St John's University School of Law, US: The Hugh Carey Center for Dispute Resolution: Fordham University, Center for Social Justice and Dispute Resolution US.

MR. DANIEL AKOTO SARFO

Research Interests

- Ecological dynamics of bamboo agroforestry in Ghana; an exploratory study (innovative and multifunctional production of bamboo biomass in a bamboo agroforestry- INBAR project).

- Allometric modelling of *Tectona grandis* for diameter at breadst height and crown collar diameter estimations
- Macro-fauna habitation in soils under *Bambusa vulgaris* and other multipurpose agroforestry tree species.

Publication(s)

- **Akoto, S. D.;** Asare, A. and Gyabaa, G. (2015). Natural Regeneration diversity and composition of native tree species under Mono-culture, Mixed culture plantation and Natural Forest. International Research Journal of Natural Sciences. Vol. 3, No. 2, pp. 24-38.
- **Akoto, S.D;** Abebrese, I.K; Partey, S.T and M.A.Appiah(2016). Earthern storage influence on sprouting of Terminalia ivorensis(A.CHEV) stem cuttings. Journal of Natural Sciences Research, Vol 6 No.10 107-114

- Isaac, M. E., L. C. N. Anglaaere, **Akoto, D. S.,** and E., Dawoe (2014). Migrant farmers as information brokers: agroecosystem management in the transition zone of Ghana. *Ecology and Society* **19**(2): 56.http://dx.doi.org/10.5751/ES-06589-190256.

MRS YEBOAA OPUNI-FRIMPONG

Research Activities/Interests

- Social Forestry, Environmental law
- Forest Policy and Urban Forestry

Publication(s)

- Opuni-Frimpong N.Y. and Opuni-Frimpong, E. (2014) Urbanization of Ghana; effects on urban forests and peri-urban community livelihoods, Proceedings of IUFRO 2014 Conference, Utah
- Opuni-Frimpong, N.Y and Opuni-Frimpong, E (2012). Nauclea Diderrichi (De Wild & T. Durand) Merr. In Lemmens, R.H.M.J., Louppe, D., and Oteng- Amoako, A.A. (Editors) Plant Resources of Tropical Africa 7(2). Timbers 2. PROTA Foundation, Wageningen, Netherlends/Backhuys

Conferences/Workshops/Seminars

- Participant: Midwest urban tree care forum, March 31-April 3, 2005: Chicago
- Participant: 18th North American Forest Biology Workshop held at MTU, Michigan, July 12-15, 2004
- Participant: 36th Air Pollution Workshop held at Rhinelander, April 26-29, 2004.

Outreach Programmes/Extension Services

- Member -International Society of Arboriculture

DEPARTMENT OF LANGUAGES AND GENERAL STUDIES

The Department was set up in 2012 as an Acadmic Section to service other Departments in general university courses such as Communication Skills, African Studies, Science and Technology among others. However, in 2013, in pursuit of UENR's vision to become a world class institution for generating, advancing and applying knowledge in energy and natural resources, French was introduced to make UENR's students bilingual to enable them compete for jobs in Francophone countries.

In 2015, the Languages and General Studies Section was elevated to a Departmental Status with the following Sections by the University Council:

- French Section (Français Langue Etrangère/ Français sur Objectifs Spécifiques,
- English Section (Critical Thinking/Analytical Reading and Reasoning/ Communication Skills), and
- General Studies Section that offers Ghanaian and African Studies.

Currently, French courses are compulsory for all students from level 100 to 300. The University is the first and the only Ghanaian university whose students learn French for five semesters out of the eight they spend on campus. This, therefore, prepare students of UENR to participate in a 'dialogue d'expertise' programme (partenariat AUF/Institut Français). In the years ahead, the Department intends to restructure its French curriculum to meet international standards and focused on the teaching and learning of French for Specific Purposes.

ACTIVITIES OVER THE PAST YEARS

During the year under consideration, some members of the Department attended the French Embassy's capacity building /PhD workshop for teachers of French and students who would like to go on industrial attachment in francophone countries.

- UNER signed an MoU with ENIM France for Academic Exchange in Masters Programme / Industrial attachment;

- The Department initiated discussions between UENR and Lomé University for an academic exchange programme;
- UENR received accreditation from Chamber of Commerce and Industry, Paris (CCIP) to prepare candidates for the French for Professional Courses Examinations
- The French Embassy donated ten (10) computers and accessories to the la Maison Française de l'UENR

To help promote language study, the Languages and General Studies Department of UENR offers self-learning lessons on Greena 95.3 FM in English as well as in French. During the second semester of 2016/17 academic year, all second year students who took the mandatory course in "*Science, Technology and Society"* were tutored in critical 21st century skills, namely, team work, project management, research and presentation skills, among others.

FUTURE PLANS

The Department of Languages and General Studies, is currently developing a BA Professional French Programme, which will differ from from the drudgery of 'too much Literature' which does not endow graduates with any specific professional domain. In this regard, the Department has presented a proposal to the Embassy of France in Accra. The proposal dwells on a 3-year plan for the sustainability and development of the French Programme in UENR,

TEACHING STAFF

The following are the staff of the Department.

Name	Qualification	Designation	Area of Specialisation
PHYLLIS BERNICE OPARE	Ph.D (Old Dominion) MSc(Clarion) B.Ed (UEW)	Lecturer	Research development; Scientific writing; Grant writing; Resource mobilization

MAGDALENE MENSAH	PhD MA, BA (KNUST) Cert 'A' (Somanya).	Lecturer/HoD	French for Comm Professional French (FOS/FLE)
RICHARD BAFFOUR OKYERE	MPhil, BA (KNUST)	Lecturer	French FOS/FLE
CHARITY ODUMALE ROBERTS	MPhil. B.Ed(UEW)	Lecturer	Gender and Leadership Training
RICHARD KYERE BOATENG	MPhil. B. Ed.	Assistant Lecturer	Development Studies Gender, Environmental Studies
COSMAS RAI AMENORVI	MPhil. English BA English.	Assistant Lecturer	Semantics, Phonetics Sociolinguistics, and Phonology, Literature.
GERTRUDE YIDANPOA GRUMAH	MSc. BA.(UDS)	Assistant Lecturer	Dev. Comm., Gender Studies, Phonetics
MAX AMUZU	Certificate in Professional French	Assistant Lecturer	French FOS/FLE
JUSTIN ODURO ADINKRA	MPhil, B. Ed (UEW)	Part-Time Lecturer	French FOS/FLE
TAHIRU DJATO	MPhil. French BA French	Part-Time Lecturer	French FOS/FLE

DANIEL DAPILEH	MPhil. French BA French	Part-Time Lecturer	French FOS/FLE

PHYLIS BERNICE OPARE

Research Activities/Interests

- Strengthening Innovations and Technology Dissemination for Sustainable Development in Cereals, Cocoa and Coffee Value Chains in Western and Eastern Africa
- Building small-holder farmer capacity for Climate Smart Agriculture and resilience
- Female participation, persistence and success in Science, Technology, Engineering, and Mathematics (STEM)
- Project based pedagogies and developing requisite 21st Century skills among learners
- Adult Literacy as an empowering tool to overcome poverty
- Appropriate technologies and community development

Publication(s)/Presentations

- Akintonde, J.O., **Opare, P. B**. (2016). Emergence of use of climate change adaptation strategies among arable crop farmers of Oyo and Ekiti States, Nigeria. *Advances in Climate Change Research.*(Submitted, awaiting publication)
- **Opare, P. B.** (2016). Analogue tools as an important first step in smallholder farmer capacity building. Kampala, Uganda: 11th International Conference of the African Association of Remote sensing of the Environment.
- **Opare, P. B**. (2016). Men's work, women's work: using a daily activity clock to discover gendered responsibilities in order to facilitate capacity building in climate smart agriculture. Kampala, Uganda: National

Agricultural Research Organisation - Makerere University Joint Agricultural Dissemination Conference.

- **Opare, P. B**., Akintonde, J.O., Obeng-Ofori, D. and Nelson, V. (2016). Using climate analogue tools to explore and build smallholder farmer capacity for climate smart agriculture. Kampala, Uganda: National Agricultural Research Organisation - Makerere University Joint Agricultural Dissemination Conference.
- **Opare, P. B**., Agyei-Ohemeng, J., Lartey, M., Obeng-Ofori, D., Panfili, G., Cinquanta, L. 2015). Enhancing the Productivity of Maize by Resource-Poor Farmers in Ghana Using Effective Technology Dissemination System. Milan, Italy: 10th AISTEC Conference
- **Opare, P. B**. (2015). Impacting my Community as a Female Scientist. Presentation at the Organization of Women in Science for the Developing World (OWSD), Brong Ahafo Regional Maiden Career Advancement Summit.

Conferences/Workshops/Seminars

- SAG-SEED Replicator Workshop, Accra Ghana, 29th March, 2017
- Attended and presented at the 11th International Conference of the African Association of Remote sensing of the Environment. Kampala, Uganda, November 2016.
- Attended and presented at the National Agricultural Research Organisation/Makerere University Joint Agricultural Dissemination Conference. Kampala, Uganda, November 2016.
- African Women in Agricultural Research and Development (AWARD) Fellow mentee Leadership Skills for Career Development Course 22 – 26 Feb 2016
- Course on Poverty Eradication: Tools and Strategies to ensure access to land and access to food organized by the Cremona Executive Education Program (CEEP) with the patronage of Expo Milano 2015. 26th – 30th Oct 2015
- Senior Academic Leadership Training (SALT) by the National Council for Tertiary Education (NCTE) with sponsorship from the Carnegie Corporation of New York 13th -16th Sep 2015

Outreach Programmes/Extension Services

- Resource person for Sunyani Diocese of the Anglican Church first girl's camp – 2017.
- Resource person and facilitator for Brong Ahafo local chapter of OWSD Career workshop.
- Farmer Field School facilitator for climate smart agriculture.

MAGDALENE MENSAH

Research Activities/Interests

- A literary and sociocultural analysis of Nana Yaa Asantewaa's epic story.
- '*Nana Yaa Asantewaa – dimensions épique et socio-culturelle d'une heroine traditionnelle asante*'.
- Didactics : The perception of the teaching and learning of French for Communication/Professional French in UENR – the way forward.
- '*La perception de l'enseignement et l'apprentissage du FLE/FOS à l'UENR –*
- *enjeux et nouvelles techniques didactiques pour innover la classe'.*
- I co-prepared modules for the UENR French courses.
- Post-doctoral research activities into Climate Change and sustainable steps to mitigate its degrading impact on my society.

Conferences/Workshops/Seminars

- International Conference on Engineering: Applied Sciences and System. 18-21 April, 2017:
- Modeling Workshops, Founding Member, EPA Training Centre, Accra.
- 2nd Ghana-France Higher Education Conference, Alliance Française, Paris, July 2014
- 3rd Ghana-France Higher Education Conference, Accra International Conference Centre, July 2015.
- National Seminar on Status and Modalities for the Teaching of French in Scientific and Technical Universities, organized by the French Embassy

and the Ministry of Education, Ghana, at Alliance Française d'Accra and Urbano Hotel,1-4 November, 2016-

- Senior Academic Leadership Training (SALT), ISSER, Legon with sponsorship from the Carnegie Corporation of New York. 28-31 August, 2016,
- Ingénierie de la formation FLE/FOS, CLA-Universitéde Franche-Comté, Besançon, France. 2-30 June, 2016-

MR RICHARD BAFFOUR OKYERE

Research Activities/Interests

- *De la littérature vers la diplomatie: études d'œuvres sélectionnés et des discours diplomatiques de Ferdinand Oyono et de Paul Claudel.*
- La fonction de la langue diplomatique dans l'art de la communication vue par Ferdinand Oyono dans *une vie de boy*
- Quand le FOS remplace le FLE dans l'enseignement de la langue française: le cas de UENR, Sunyani, Ghana

Conferences/Workshop/Seminars

- Training for DELF-DALF evaluation course A1 to B2 Alliance Francaise, Accra
- Training in FOS, Alliance Francaise, Accra
- PAMOJA Conference, Kabarak University, Kenya (building a new generation for a new Africa)
- Rebranding for success (Legacy and Legacy, Albert Ocran)
- Teaching French for business purposes (Alliance Française)
- Linguistics Association of Ghana Annual Conference

Outreach Programmes/Extension Services

- KNUST IDL (professional add-on seminar).
- Organizer: Final year seminar on CV writing/interview skills.
- Networking in the job market, business start-ups and funding, etc.

MRS CHARITY ODUMALE ROBERTS

Research Activities/Interests

- Gender, Stress, counseling culture, Indigenous People and Other developmental issues

Publication(s)

- "*Stress Coping Strategies among Ghanaian Women in Managerial Positions*". European Scientific Journal May 2014 edition volume 10 (ISSN 1857-7881) pp. 205-211.

Conferences/Workshops/Seminars

- 2nd Annual Easter Forum, University of Cape Coast –June, 2016

Outreach Programmes/Extension Services

- Presentation on the uniqueness of a woman's body –March, 2016
- A talk on dress code and attitude towards work- March, 2017

MAX ORATIO AMUZU

Outreach Programmes/Extension Services

- Co-ordinator: Paris Chamber of Commerce Exams
-

JUSTIN ODURO ADINKRA

Research Activities/Interests

- Le discours d'Aminata Sow Fall et l'insertion sociale des jeunes : *une lecture de Festins de la détresse.*(Presented at the International Multi-disciplinary Conference for Postgraduate Students)

- Sony LabouTansi et la politique : une étude de *la vie et demie.*

Conferences/Workshops/Seminars

- International Multi-disciplinary Conference for Postgraduate Students dubbed IMC5PS@UEW-2016 at the University of Education, Winneba, 1–5 August, 2016
- Workshop organized by The National Coordination Office for CREF on the production of a Teaching/Learning material for use by teachers and students of French at Senior High School, Accra High School. 12 16 October, 2015
- National Seminar on status and modalities for the teaching of French in scientific and technical universities, French Embassy and the Ministry of Education, Ghana, November 1st to 4th, 2016 at Alliance Française Accra and Urbano Hotel.
- Training workshop for senior members, January 26, 2017 at University of Energy and Natural Resources, Sunyani**.**

Outreach Programmes/Extension Services

- Academic Tutor: School of Natural Resources, Energy and Natural Resources, Sunyani, 2016-217.
- Co-ordinator of University of Energy and Natural Resources' French Club- 2016-2017.
- Organizer, French Immersion Programme for students of French in La Côte d'Ivoire.

RICHARD KYERE BOATENG

Research Activities/Interests

- Development Studies Issues, Gender and Development,
- Urban Waste Management and Environmental Policy Analysis,
- Natural Resources Use and Management
- Development Research Methods and Techniques

Publication(s)

- Osei, R. D., Osei-Akoto, I. and Kyere-Boateng, R. (2013). *"Farmer Training and Household Labour Use"Pentvars Business Journal Vol: 7 No.1, 2 & 3,* January-September 2013.

Conferences/Workshops/Seminars

- Training workshop for Senior Members at the Auditorium University of Energy and Natural Resources, Sunyani. 26 January, 2017

Outreach Programmes/Extension Service

- Radio Panelist/Discussant on Socio-Economic and Environmental Issues in Berekum Community,
- Member of the Institute of Economic Affairs, Brong-Ahafo Regional Enforcement Body for General Election 2012

GERTRUDE Y. GRUMAH

Research Activities/Interests

- The use of ICT for teaching and learning in Public Senior High Schools in Ghana.

Outreach Programmes/Extension Services

- Secretary, Research Committee, Department of Languages and General Studies,
- Co-host ; The Pierian Spring of English, Greena FM,
- Resource Person, Women's Plane: UENR, Topic: Career Development, Oct. 2016.

COSMAS RAI AMENORVI

Research Activities/Interests

- *Make it Plain: Lexical Cohesion and literariness in Malcolm X's "The Ballot or the Bullet*"
- *The Sociolinguistics of "I'm Good" and 'I'm fine' : a case among UCC Students*

- *My Reflections: An anthology of 100 poems.*

Publication(s)

- **Amenorvi, C.R.** (2015) *Bilingualism and Interference: A Case of Ellipsis among Some Coordinate Bilinguals.* African Journal of Applied Research. Vol 2, No 2, pp 117-125.

Conferences/Workshops/Seminars

- Rapporteur; Language Documentation Seminar, Cape Coast. July 2017
- Seminar on Quality Assurance Practice in Higher Education, the Institute of Educational Planning and Administration, November 22nd, 2011.
- Seminars on the Teaching and Marking of Communication Skills: Department of Communication Studies, Univ. of Cape Coast. 2006-2015

Outreach Programmes/Extension Services

- Chairman, Research Committee, Department of Languages and General Studies.
- Host and Writer: The Pierian Spring of English, Greena FM.
- Member, UENR Admission's Committee/Admission's Campaign in the Volta Region fror UENR.
- Director, UENR Debate Society.
- Member Local Organizing Committee for hosting Ghana's University Debate Championship, 2017.

TAHIRU DJATO

Research Activities/Interests

- *Le rôle de media dans l'apprentissage du Français au Ghana.*

CENTRE FOR CLIMATE CHANGE AND GENDER STUDIES (3CGS)

INTRODUCTION

The Centre for Climate Change and Gender Studies (3CGS), officially started operation on August 1, 2016 after the University Council approved its establishment. The Centre is a research, capacity building and policy advocacy Centre, focusing on issues bordering on climate change and sustainable development under overarching gender and intersectionality perspectives.

Overall objective

To strengthen research capacity and harness it in the service of policy making, planning, sustainable development in the area of climate change and gender, and its linkages with energy, agriculture, natural resources and technology. The objectives of 3CGS among other things are to:

- Promote inter and intra-disciplinary research in the University that keeps up with international research and developments trends through proposal development and strategic institutional collaborations in Ghana and abroad.

- Co-ordinate and promote research that contributes to sustainable development, especially in the area of climate change, gender, poverty reduction, population growth and other social issues.

- Develop a fundraising strategy document in securing research funds from national and international sources.

- Provide a platform to build the capacity of University staff, postgraduate and undergraduate students in up-to-date social qualitative and quantitative research methods.

- Engage in consultancy services in the area of climate change and social issues across different disciplines.

- Stir research and publication interest by providing platforms for knowledge creation and sharing, advocacy and sensitizations through

periodic public lectures, seminars and conferences that keep lecturers, researchers and students abreast with challenging international research breakthroughs and findings.

- Run national and international training courses (Short courses and workshop on climate change and gender in different discipline e.g. Energy, Agriculture, and Natural Resources).

- Promote community outreach and advocacy on climate change and gender-related issues through existing and new networks

Activities carried out

The Centre during the year under review organised Statistical Analysis with SPSS training in March and November 2016. In all over 40 participantstookpart in the training. Similarly, a one week Research Methodology and Proposal Writing workshop was also organized by the Centre.

Conference

The Centre spearheaded the organisation of International Conference on Climate Change and Sustainable Development dubbed "Climate Change and Sustainable Development: Strengthening Africa's Adaptive Capacity" from 25-28 July, 2017.

Future Plans

In the coming year, the Centre intends to run the following courses:

- Short Course on Climate Change and Energy
- Short Course on Organizational conflict management, succession, planning and monitoring
- Short Course on Proposal Writing and Project Management



SCHOOL OF ENGINEERING

INTRODUCTION

The School of Engineering presently consists of three Departments namely Department of Computer and Electrical Engineering; Department of Mechanical and Manufacturing; and Department of Energy and Environmental Engineering.

The School started with the Department of Energy and Environmental Engineering and offered only one programme, Renewable Energy Engineering. In the following academic year, the School of Engineering expanded with two additional Departments; Computer and Electrical and Mechanical and Manufacturing Engineering. With this expansion, three new programmes were introduced namely; Electrical/Electronic Engineering, Mechanical Engineering, and Environment Engineering.

In the 2014/15 academic year, three additional programmes (Computer Engineering, Agricultural Engineering and Petroleum Engineering) were brought on board bringing the total number of programmes to seven (7). The programme offered by each Department is shown in the table 1 below.

Table 1: Programmes under each Department.

Item	Name of Department	Programmes
1	Computer and Electrical	Computer Engineering Electrical/Electronic Engineering
2	Mechanical and Manufacturing	Mechanical Engineering Agricultural Engineering
3	Energy and Environmental Engineering	Renewable Energy Engineering Environment Engineering Petroleum Engineering.

STAFFING

Administrative Staff

The following constitute the Administrative staff of the School of Engineering.

1. Nana K. Diawuo — Dean
2. D. Twumasi-Ankrah — Ag. School Secretary
3. Diana Obeng — Senior Administrative Assistant
4. Elsie Mark-Anthony — Senior Administrative Assistant

Regular Students' Statistics

The School population as at the end of the 2016/2017 academic year stands at 860 for the regular Students. The Departments' student population as at the end of 2016/2017 academic year is as shown in Table 2.

Table 2: Number of Students in each Department

Item	Name of Department	Student Population		
		Females	Males	Total
1	Computer and Electrical	19	231	250
2	Mechanical and Manufacturing	14	193	207
3	Energy and Environmental Engineering	68	335	403

Students' Statistics

SCHOOL OF ENGINEERING	GENDER	L.100 Yr. 1	L.200 Yr. 2	L.300 Yr. 3	L.400 Yr. 4	TOTAL
	M	208	237	238	235	918
	F	27	22	31	32	112
	T	**235**	**259**	**269**	**267**	1030

Other Programmes:

The Department of Energy and Environmental Engineering started offering MSc/MPhil and PhD programmes in the 2015/2016 academic year. The programmes offered at this level are Sustainable Energy Engineering; Environmental Engineering and Management. Two other Departments, Computer and Electrical and Mechanical and Manufacturing are also offering Top- Up programmes in BSc in Electrical/Electronic Engineering and BSc in Mechanical and Manufacturing with student numbers at 138 and 14 respectively.

DEPARTMENT OF COMPUTER AND ELECTRICAL ENGINEERING

The Department runs a BSc. in Electrical and Electronic Engineering and BSc. in Computer Engineering programme. The pioneers of the Electrical and Electronic Engineering programme are graduating this year, whilst the first batch of Computer Engineering programme are now in the final year. The total population of students in the Department now stands at 350. Academic staff numbers increased from two in 2013 to seven as of today.

The Department also runs a Top-up programme designed for HND Holders to acquire a BSc. Electrical/Electronic Engineering and it has been running for the past four years. The duration for the Top-up Programme is two and halve years.

Aims and Objectives:

The main aim of the Department of Computer and Electrical Engineering is to develop enterprising professionals who have an innovative disposition, the confidence and abilities to assume leadership roles in engineering, technology, business sectors and in the community. The programmes are designed to give the skills essential for graduate engineers to become immediately employable in the global competitive environment.

The educational and professional objectives of the Department of Computer and Electrical Engineering are to train graduates who have the following attributes:

1. Technical skills: are technically competent to solve complex problems in Electrical & Electronic Engineering & Computer Engineering and can adapt effectively in a fast changing environment.

2. Critical thinking: are able to critically think, analyze and make decisions that give due consideration to global issues in business, ethics, society and the environment.

3. Leadership, team building: are able to communicate effectively, act with integrity, and have the inter-personal skills needed to engage in, lead, and nurture diverse teams.

4. Attitude: are committed to lifelong learning, research oriented, resourceful and embrace global challenges and opportunities to make a positive impact in society.

ACTIVITIES OVER THE PAST YEAR

The Department participated in the University 2017 maiden edition of the Science Festival with the following projects:

- Home Automation System
- Intelligent Home Security System
- Water Level Detection Simulator
- Electrical Power Inverter for domestic loads

FUTURE PLANS

- Enhancing the competencies of staff through systematic and continuous training for the successful implementation of our academic, research and extension programmes. All categories of staff will be encouraged and motivated to build their capacities through further training both locally and internationally.
- The Department in the near future, also intends to mount another degree programme in Telecommunication Engineering and a diploma in Electrical and Electronic Engineering.
- Staff without terminal qualification will be be encouraged to pursue PhD training. Already two members have started their PhD.

- Recruitment of new teaching staff with PhD degrees in areas of specialization in;
    1. Software Engineering with options in Operating Systems and architecture
    2. Embedded Systems and Artificial Intelligence
    3. Digital signal processing and Control systems
    4. Information security
    5. Electrical Machines

6. Electrical services
7. Power systems and
8. Two Technicians with HND in Electrical and Electronic Engineering

- The Department plans to undertake consultancy works to internally generate funds for the Department and the University.

Teaching Staff

The following constitute the teaching staff of the Department. Their names and qualifications are given in the Table below.

Name	Qualification	Designation	Area of Specialization
Nana Dr. K. Diawuo	PhD(Newcastle UK); MSc, BSc (KNUST)	Snr. Lecturer/ HoD	Semiconducting Devices, Linear Electronics, VLSI,
Kankam O. Adu	MSc (London)	Lecturer (on study leave)	Electronics
Mr. Samuel Osei Fobi	MEng (UK) BSc. (KNUST)	Assistant Lecturer	Electrical Machines/ Drives Control
Samuel T. Koduah	MPhil (Korea) BSc (KNUST)	Assistant Lecturer	Semiconductors & Nanotech.
Mr. Isaac Kofi Otchere	MSc. (UAE) BSc. (KNUST)	Assistant Lecturer	Electrical Power Quality Enhancement
Andrew Quansah	MSc, BSc (KNUST)	Assistant Lecturer	Microelectronics and Wireless Systems
Desmond O.i Ampofo	MPhil (KNUST), BSc (KNUST)	Assistant Lecturer	Electrical Power Engineering
Mr. Twum Nana Duah	MPhil (KNUST), BSc (KNUST)	Assistant Lecturer/ Part-time	Electrical Power System Eng./ Solar and Wind Energy

NANA DR. KWASI DIAWUO

Research Activities/Interests

- Spatial distribution of mobile antenna in a relatively low dense environment
- MIMO antenna system application in wireless radio networks

Publication(s)

- Eric Tutu Tchao, **Kwasi Diawuo** and Willie K. Ofosu. (2017) "Mobile Telemedicine Implementation with WiMAX Technology: A Case Study of Ghana" Journal of Medical Systems ISSN 0148-5598 Volume 41 Number 1
- Paula Aninyie and **Diawuo, K.** (2014) "Evaluation of CSSR with Direct TCH Assignment in Cellular Networks", Journal of Engineering Research and Applications, Vol. 4 Issue 8, pp 87-91.
- K. A. Dotche and **Diawuo, K.** "Study of Transmitted Power on Large Scale Fading Models in Ouagadougou, Burkina Faso" SOP Transactions on Wireless Communications Issn (print): 2373-8618 ISSN (online): 2373-8626 Volume 1, Number 2, July 2014, pp 66-75.
- James Dzisi Gadze, Delali Kwasi Dake and **Diawuo, K.** (2013) "Adaptive Congestion Control Protocol (ACCP) for wireless sensor networks" International Journal of Wireless & Mobile Networks (IJWMN) Vol. 5, No. 5, pp 129-144.
- E. T. Tchao, W. K. Ofosu and **K. Diawuo**,(2013) "Radio Planning and Field Trial Measurement for a Deployed 4G WiMAX Network in an Urban Sub-Saharan African Environment" *Conference Proceedings, IEEE Wireless Telecommunications Symposium (WTS 2013)*, Phoenix, Arizona, USA. 17-19th April 2013**.**

Conferences/Workshops/Seminars

- Participant: Workshop on Nationally Appropriate mitigation Actions (NAMA) at Alisa Hotel, Accra on 22nd October, 2015

MR. SAMUEL TWENEBOAH-KODUAH

Research Activities/Interests

- Nanotechnology application for the provision of renewable clean energy
- Communication systems – Power usage of wireless sensor networks
- Microcontroller and Embedded systems and application

Conferences/Workshops/Seminars

- Participant: Control Automaton Processes, Measurement and Testing using LabView, March, 2016
- Participant: Oracle Java Training, University of Ghana. Legon, 22nd February 2016
- Participant: UNDP/GEF seminar on UAV systems for UENR and Ghana, organised by United Nations Development Programme (UNDP), February, 2015
- Participant: Training on UAV systems for Environmental Monitoring at Ghana Atomic Energy Commission, Accra, 2nd March, 2015
- Participant: UAV application for environmental monitoring. A training at Ghana Atomic Energy Commission/Ghana Space Science Institute. March, 2015

MR. DESMOND OKWABI AMPOFO

Research Activities / Interest

- Optimization of power system networks
- Investigation of penetration limits of Renewable Generation in electrical power distribution networks

- Power System Stability

Publication(s)

- **D.O. Ampofo**, Amer Ai-Hinai, and M. S. El Moursi (2015). "Utilization of reactive power resources of distributed generation for voltage collapse prevention in optimal power flow." Solar Energy and Building (ICSoEB), 2015 International Conference on. IEEE, 2015. Doi: 10.1109/ICSoEB.2015.7244941

Conferences/Workshops/Seminars

- Participant: World Future Energy Summit (WFES), 19 - 22 January, 2015 at Abu Dhabi, UAE
- Participant: REthinking Energy: Towards a new power system, International Renewable Agency (IRENA) lecture series, Sept. 2014, UAE

Outreach Programmes / Extension Services

- Voluntary Service: Part of a team of engineers that develop energy conservation strategies for a remote school in Somaliland. (Funded by Zayed Future Energy prize, UAE and Engineers Without borders(EWB) January, 2014 – June, 2015

MR. ISAAC KOFI OTCHERE

Research Interest

- Power Quality enhancement deploying Active power filters
- Static reactive power compensation.
- Application of power electronics in renewable energy systems
- Grid interconnection issues, electric power quality

Conference/ Workshop/Seminars

- Participant: West Africa Clean Energy Corridor (ACEC-WA) Technical Workshop, organized by IRENA, United Arab Emirates, Abu Dhabi 18 September 2015

- Participant: REmap Africa Regional Workshop – Africa Renewable Energy Roadmap to 2030.organized by IRENA. 8 June 2015. Abu Dhabi, UAE

- Participant: World Future Energy Summit 2015, organized by IRENA, United Arab Emirates, Abu Dhabi. 19-22 January 2015

- Participant: World Future Energy Summit 2015, organized by IRENA, United Arab Emirates, Abu Dhabi. 20-20 January 2015

- Participant: National Instruments Academic Seminar, organized by National Instruments on Tuesday, April 12th, 2016, at lorence Onny Auditorium, Graduate School Block, GTUC Main Campus, Tesano - Accra, Ghana

Outreach Programmes / Extension Services

- Voluntary Service: Part of a team of engineers that develop energy conservation strategies for a remote school in Somaliland. (Funded by Zayed Future Energy prize, UAE and Engineers Without borders(EWB) January, 2014 – June, 2015

MR. KANKAM O. ADU

Publication(s)

- Nerrisa E. L. Anku, Adu-Gyamfi, **A. Kankam**, A. Takyi, R. Amponsah. "A Model for Photovoltaic Module Optimization. *Journal of Mechanical Engineering and Automation* 5(2):72-79Doi:10.5923/j.jmea.20150502.02

DEPARTMENT OF ENERGY AND ENVIRONMENTAL ENGINEERING

The Department was established in the 2012/2013 academic year to run a four-year BSc Renewable Energy Engineering programme with the aim of fully integrating renewable energy generating technologies and environmental issues to meet the changing demands of the energy industry, particularly in Ghana and the West Africa sub-region.

The Renewable Energy Engineering programme provides knowledge in the scientific and engineering foundations and skills for such needs as alternative fuel technology, renewable energy, hydrogen fuel cell development and utilization, solar energy, energy extraction and geothermal storage, fusion and nuclear energy and the technologies for understanding and mitigating the environmental impacts of energy usage

In the 2013/2014 academic year, another four-year BSc Environmental Engineering programme was mounted by the Department with the aim of fully integrating environmental engineering technologies and management principles to meet the challenging and dynamic demands of the industries as well as other biotic and abiotic activities in Ghana and in the West Africa sub-region. Additionally, a BSc Programme in Petroleum Engineering was introduced in the 2014/2015 Academic year bringing the total undergraduate programmes in the Department to three.

Research Activities

The research activities of the Department fall under the following six main thematic areas:

1. Solar energy technologies
2. Biomass energy technologies
3. Energy efficiency
4. Environmental sanitation and impact assessment
5. Natural products processing and utilization
6. Clean development mechanism and climate change mitigation

During the year under review, the Department undertook the following activities :

1. Installation of 2KVA solar system for Ghana Permaculture Institute (GPI) at Tanoboase-Kranka (Techiman)

2. Proposal submitted to the Energy Commission to train Technicians in Design, Installation and Maintenance of solar PV for Grid-tied and Off-grid Application has been successful pending signing a formal contract agreement.

3. Participated in SPE Petrobowl Quiz Competition, March 2017

4. Outreach Program by PESA and EESA to some SHS in Sunyani

5. Petroleum Seminar/Career Counselling in which Petroleum Commission and Schlumberger representatives were the resource persons.

FUTURE PLANS

The Department in the near future intends to mount the following degree programmes with their developed curriculum;

1. BSc Civil Engineering

2. MSc / PhD Climate Change& Environmental Modelling

3. MSc / PhD Petroleum Engineering

4. B.Eng. Building Services Engineering

Also, the Department have initiated plans to mount the following short courses in the near future:

- GIS & Remote Sensing Applications for Water & Energy Sectors
- Cleaner Production Technology
- Open Sources Software for Preprocessing GIS Data for Hydrological models
- Environmental Law & Governance

- Introduction to CFD Application for Environmental & Renewable Energy Engineers
- Biogas Technologies
- Small Hydropower Development
- Wind Energy Technologies
- High Performance Computing for Engineers
- Artificial Intelligence in Engineering

TEACHING STAFF

The Department is staffed by the following. Their names and qualifications are given in the Table below.

Name	Qualification	Designation	Area of Specialization
Dr. Francis Atta Kuranchie	PhD (ECU-Australia), M.Sc. (LIU-Sweden), B.Sc. (KNUST)	Lecturer	Waste Management, Sustainability, Energy Efficiency, Construction Materials.
Dr. Samuel Fosu Gyasi	PhD, MSc. BSc (KNUST)	Lecturer	Sanitation & Hygiene, Public & Environmental Health, Water and Waste Water Treatment
Mr. Prosper Anumah	MSc(UG), BSc(KNUST)	Part-Time Lecturer	Petroleum geoscience, Reservoir engineering, Geophysics
Felix Amankwah Diawuo	MSc (KNUST) BSc (KNUST)	Lecturer	Energy engineering Electrical systems

Justice Sarkodie-Kyeremeh	MSc (RGU,) BSc (KNUST)	Assistant lecturer	Drilling Technology, Advance Completions and subsea Systems, Petroleum Production
Emmanuel Acheaw	MSc (RGU, UK) BSc (KNUST)	Assistant lecturer	Petroleum Geoscience and Basin Studies, Seismic Acquisition and Interpretation,
Yaw Akyampon Boakye-Ansah	MSc (Aberden) BSc (KNUST))	Assistant lecturer	General Petroleum Engineering, Reservoir Engineering
Dr. Amos T. Kabo-Bah	Ph (Hohai) MSc(ITC) BSc (KNUST)	Senior Lecturer	Climate Change and Energy, Hydrology and Water Resources,
Dr. Eric Ofosu-Antwi	PhD MPhil BSc. (KNUST)	Lecturer	Water Resources Management Irrigation Development
Dr. Nana Sarfo Agyemang Derkyi	PhD MPhil BSc. (KNUST)	Senior Lecturer	Chemical Engineering Renewable Energy Technologies
Mawufemo Modjinou	MSc. BSc (KNUST)	Lecturer	Renewable Energy
Dr. Francis Attiogbe	Ph.D (SUNY-ESF M.Sc. B.Sc. (KNUST)	Senior Lecturer/ HoD	Chemical Eng., Water & wastewater treatment, Bioenergy

Dr. Samuel Gyamfi	PhD(Canterbury), MSc(Aachen, Germany),BSc.(KNUST)	Lecturer	Energy Demand Side Management and Demand Response
Dr. Mark Amo-Boateng	PhD(Hohai)MSc(KNUST) BSc (KNUST)	Lecturer	Optimization Algorithms, Bio-degradable Plastics, Ocean Discovery, Hydrological Modelling

DR. FRANCIS ATTIOGBE

Research Activities/Interest

- Water & Wastewater Treatment
- Air Quality & Pollution Control
- Solid and hazardous waste management
- Pulping & Bleaching
- Bioenergy
- Applied Chemistry

Publication(s)

- **Francis K. Attiogbe** and Tahir Abdul-Razak, (2016), "Evaluation of the physicochemical properties of Northern Ghana Sclerocarya birrea seed oil and proximate analysis of the process waste", Afr. J. Food Sci., Vol. 10(4) pp. 48-53. DOI: 10.5897/AJFS2016.1425.

- Andrews Nkansah, **Francis Attiogbe** and Engelbert Kumi, (2015), "Scrap metals' role in circular economy in Ghana, using Sunyani as a case study" Afr. J. Environ. Sci. Technol., 9(11): 793-799.DOI: 10.5897/AJEST2015.2000.

- Esi Awuah, Samuel Fosu Gyasi, William Nettey, **Francis Attiogbe** , Henk J. Lubberding , Huub J. Gijzen, (2014), "Atmospheric air pollution associated with macrophyte and algal-based wastewater stabilization ponds in Kumasi, Ghana", JENRM, Vol. I, No. 2, 88-92.

Conferences/Workshops/Seminars

- Ghana's Natural Resources and Sustainable Development-The role of the Engineer organized by Ghana Institution of Engineers (GhIE), Eusbett Hotel, Sunyani, 27th – 31st March, 2017.
- 2016 Seminar on Development and Utilization of Clean Energy and Renewable Energy for Developing Countries sponsored by the Ministry of Commerce, People's Republic of China & Powerchina Zhongnan Engineering Corporation Limited, Changsha, China (September 26 – October 16, 2016).
- Renewable Energy and Energy Efficiency: Accelerating Energy Access and Security organized by Energy Commission, Accra International Conference Center (AICC), Accra, 9th - 11th August, 2016.
- Sustaining hydropower energy for economic growth and development in West Africa in Sunyani at Sheila's Lodge, 12th – 14th November, 2015.
- Turning waste into resource – challenges and opportunities for Ghana organized by MESTI in collaboration with GIZ, Fiesta Royale Hotel, Accra, 17th February 2015.

Outreach Programmes/Extension Services

- Examiner: Chemical/Mining Group of the Ghana Institution of Engineers (GhIE) professional examination held at Newmont Ahafo Mines, Kenyasi, 17th October, 2015.
- Chair: Planning committee for 'Engineering Students Tusk' (product design) competition for the 2017 Annual General Meeting (AGM) and Conference of the Ghana Institution of Engineers (GhIE).
- Reviewer: American Chemical Science Journal, International Research Journal of Pure and Applied Chemistry, British Journal of Applied Science & Technology, Journal of Advances in Biology & Biotechnology,

Journal of Global Ecology and Environment, Asian Journal of Environment & Ecology.

- Academic Board Member, UENR
- School of Engineering Board Member, UENR
- School of Graduate Studies Board Member, UENR
- Academic Board Representative on the Executive Board, UENR
- School of Engineering Representative on the Academic Planning Committee, UENR
- School of Engineering Representative on the Library Committee, UENR
- External Assessor: Senior Academics promotions, Sunyani Technical University (STU).

MR. MAWUFEMO MODJINOU

Research Activities/Interest

- Application of renewable energy and energy conservation for the provision of energy services and climate change mitigation.
- Energy infrastructure planning, design and turbo machinery.

Publication(s)

- Modjinou, M. (2014). Improving Electricity Supply Security in Ghana: the Potential of Renewable Energy: *Renewable and Sustainable Energy Reviews* 43 (2015) 1035–1045.

Conferences/Workshops/Seminars

- First Australasia and South East Asia Conference in Structural Engineering and Construction

DR. MARK AMO-BOATENG

Research Activities/Interest

- High Performance Computing
- Large-Scale Optimization Algorithms
- Bio-degradable Plastics
- Ocean Discovery
- Hydrological Modelling and Forecasting
- Innovation and Technology
- Climate Change and Environmental Engineering

Publication(s)

- Kan, G., Liang, K., Li, J., Ding, L., He, X., Hu, Y., & **Amo-Boateng, M.** (2016). Accelerating the SCE-UA Global Optimization Method Based on Multi-Core CPU and Many-Core GPU. *Advances in Meteorology*, 2016, 1–10. https://doi.org/10.1155/2016/8483728
- Kan, G., Lei, T., Liang, K., Li, J., Ding, L., He, X.… Zhang, M. **Amo-Boateng, M** (2016). A multi-core CPU and many-core GPU based fast parallel shuffled complex evolution global optimization approach. *IEEE Transactions on Parallel and Distributed Systems,* 1–1. https://doi.org/10.1109/TPDS.2016.2575822

Conferences/Workshops/Seminars

- UNESCO - Intergovernmental Ocenographic Commission (IOCAFRICA-IV) - Expert Session
- UNESCO - Intergovernmental Ocenographic Commission (IOCAFRICA-IV) - Symposium
- ESRI User Conference and Exhibition
- Falling Walls Lab/Conference 2015
- Hydropower Conference 2015
- Ghana South-Africa Bilateral Research and Development Symposium - Part1 & 2

Outreach Programmes/Extension Services

- Shell Ocean Discovery XPRIZE Teams and Judges Summit
- Hardware Africa Summit - 2016
- Understanding Satellite Communication Technologies
- Hardware Africa Summit - 2015
- International Year of Light and Light-based Technologies - 2015
- Energize the BoP - Africa

Dr. Nana Agyemang Derkyi

Research Activities/Interest

- Renewable Energy Technologies and Systems Design
- Gasifiers and biogas digesters for community utilization
- Biomass combustion, pyrolysis and gasification
- Dye-sensitized solar cells
- Graphene synthesis and applications in Energy and Water Purification
- Chemical Process and Product Design
- Thermophilic ionic liquids for converting lignocellulosics into bioethanol.
- Carbonization and briquette/pellets production from biomass.

Publication(s)

- Derkyi, M.A., **Derkyi, N.S.A**., and Baidoo,A.(2016) Farmers Perception of Water Contribution to Household and Farming System in the Offinso North District of Ghana: Rainfall a Critical Climatic Factor.*GJDS*,Vol.13,No.2.
- **Derkyi N.S.A.**, Sekyere, D. and Oduro K.A. (2014). Variations in oil content and biodiesel yield of *Jatropha curcas* from different agro-ecological zones of Ghana. *International Journal of Renewable and Sustainable Energy*. 3(4): 76-81. doi: 10.11648/j.ijrse.20140304.11
- **Derkyi N.S.A.**, Sekyere, D. and Coffie, J. (2014). Utilization of *Tetrapleura tetraptera* Waste for Energy and Climate Change Mitigation.

Journal of *Energy and Natural Resource Management*. Vol. 1 (1): 8-12

- **Derkyi N.S.A.**, Sekyere, D. and Darkwa, N.A. (2014). Effect of Extraction Solvent on Tannin-Formaldehyde Adhesives for Plywood Production.*Journal of Energy and Natural Resource Management.* Vol. 1 (2): 120-16
- Jiajitsawat, S., **Derkyi N.S.A.**, Dejang, N. and Pansa, O. (2014).Integrating Forest Biomass into Hydroponics. *The Contribution of Forests to Ghana's Economic Development*. 1st National Forestry Conference, 16 – 18 September 2014, CSIR-FORIG, Kumasi, Ghana.
- **Derkyi N.S.A.** and Derkyi M.A.A. (2014). Developing the Linkage between Forest Products and Community Livelihoods. *The Contribution of Forests to Ghana's Economic Development*. 1st National Forestry Conference, 16 – 18 September 2014, CSIR-FORIG, Kumasi, Ghana.

Conferences/Workshops/Seminars

- Speaker: Lecture on "Energy and Environmental Benefits from Biomass Resources". 2017. SENCE, Bavaria, Germany.

- Speaker: Lecture on "Sustainable Rural Energy Systems for Developing Countries". 2017. University of Applied Forest Sciences, Rottenburg, Germany.

- Trainee: Biogas Technology Training. 2017, BIOMA, Lanzhou, China.

- Trainee: Novel Solar Energy Applications Training. 2016, UNIDO-ISEC, Gansu, China.

- Trainee: Doctoral Supervision Training, 2016. Stellenbosch University, South Africa
- Trainee: Solar PV Training. German Solar Training Week, Accra, Ghana
- Trainee: Engineering Lab. Applications, 2014. Lucas Nulle (Germany), Accra, Ghana

Outreach Programmes/Extension Services

- Reviewer: International Journal of Renewable Energy Research, Journal of Energy and Natural Resources Management, Environmental Engineering Research Journal, Journal of Pharmacy and Pharmacology Research, Chemistry International Journal, International Journal of Agricultural Policy and Research.
- External Examiner: Graduate students' theses, Department of Chemical Engineering, Department of Mechanical Engineering, Department of Biochemistry and Biotechnology – Kwame Nkrumah University of Science and Technology (KNUST).
- External Assessor: Senior Academics promotions, Building and Road Research Institute (BRRI – CSIR); Department of Energy Systems, Koforidua Technical University.
- Lecturer and Supervisor: Graduate students, WASCAL, Abdou Moumouni University, Niger.
- Council Member: University of Energy and Natural Resources (UENR)
- President, University Teachers' Association of Ghana, UENR
- Academic Board Member, UENR
- School of Engineering Board Member, UENR

DR. ERIC OFOSU-ANTWI

Research Activities/Interest

- Hydropower development and environmental sustainability
- Solid waste characterization in urban areas of Ghana towards resource recovery
- Irrigation development and technologies for sub-Saharan Africa
- Watershed Management for Agricultural Productivity
- Renewable Energy Technologies for Agricultural Productivity
- Potential for Spate Irrigation Development in the White Volta sub-Basin,
- Technology Assessment Framework for WASH Technologies in Ghana,

Publication(s)

- Mortey M. E., Ofosu E. A., Kolodko D. V. and Kabo-bah A. T. (2017). Sustainability Assessment of the Bui Hydropower System. Hydrology 2017,
- Appiah-Effah, E., Nyarko, K. B., Awuah, E., Afful K. M. and Ofosu, E. A. (2017) Performance of Rotary Drum Composter on the Die off of Ascaris and Trichuris during faecal sludge composting. Journal of Environmental Engineering, 2017
- Ofosu E.A., Mul, M., Annor F., Boateng-Gyimah M. and Ampomah B. (forthcoming). Overview of the Reoperation and Re-optimization Akosombo and Kpong Dams Project

- Akpoti K., Ofosu E. A. and Kabo-bah A. T. (2016). Impacts of Rainfall Variability, Land Use and Land Cover Change on Stream Flow of the Black Volta Basin, West Africa. Hydrology 2016, 3(3), 26
- Afful K., Oduro-Kwarteng S., Ofosu E. A. and Awuah E, (2016,). Odour Impact Determination of a Communal Toilet: Field Measurement with Panellists Using Dynamic Plume Method and Dispersion Modelling. Open Journal of Air Pollution.
-

Conferences/Workshops/Seminars

- Organised the First Conference on Engineering, Applied Sciences and Systems Modelling from the 18th to 21st of April in Accra, Ghana

- Participant: International Workshop on Small Hydropower Development for Developing Countries, Hangzhou, China from 15th October to 7th November, 2016. Organised by the International Center for Small Hydropower.

- Participant: African Engineering Conference on Energy, Jointly organised by UNESCO and the Nigerian Institution of Engineers at Uyo, Akwa Ibom State from the 28th of November to the 1st of December 2016.

- Participant: National Conference of the Ghana Institution of Engineers, held in Sunyani from the 27th to the 31st of March 2017.

DR. FRANCIS ATTA KURANCHIE

Research Activities/Interests

- Waste and Environmental Management
- Sustainable development
- Construction materials
- Geopolymer technology
- Renewable energy technologies
- Industrial and domestic energy efficiency
- Geo-Environmental Engineering
- Mineral processing

Publication(s)

- **Kuranchie, F.A.**, Shukla, S.K., Habibi, D. and Kazi, M. (2016). Load-settlement behaviour of a strip footing resting on iron ore tailings as a structural fill. *International Journal of Mining Science and Technology,* China, Vol. 26, No. 2, 247-253. Link: http://dx.doi.org/10.1016/j.ijmst.2015.12.010
- **Kuranchie, F.A.**, Shukla, S.K. and Habibi, D. (2016). Utilisation of iron ore mine tailings to produce geopolymer bricks. *International Journal of Mining, Reclamation and Environment*, UK, Vol. 30, No. 2, 92 – 114. Link: http://dx.doi.org 10.1080/17480930.2014.993834.
- **Kuranchie, F.A.**, Shukla, S.K. and Habibi, D. (2015). Electrical resistivity of iron ore mine tailings produced in Western Australia. *International Journal of Mining, Reclamation and Environment*, UK, Vol. 29, No. 3, 191-200
- **Kuranchie, F.A.**, Shukla, S.K., Habibi, D. and Mohyeddin, A.K. (2015). Utilisation of iron ore tailings as aggregates in concrete. *Cogent Engineering,*UK, Vol. 2, No. 1, pp. 1-11, Link: http://dx.doi.org/10.1080/23311916.2015.1083137

- **Kuranchie, F.A.**, Shukla, S.K., Habibi, D., Zhao, X. and Kazi, M. (2014). Studies on electrical resistivity of Perth Sand. *International Journal of Geotechnical Engineering*, UK, Vol. 8, No. 4, 449-457

Conferences/Workshops/Seminars

- Speaker, **Kuranchie, F.A.**, Shukla, S.K. and Habibi, D. (2013). Mine wastes in Western Australia and their suitability for embankment construction. *Proceedings of the GeoCongress 2013: Stability and Performance of Slopes and Embankments III, ASCE Joint Committee on Sustainability Practices*, 3-7 March 2013, San Diego, California, USA, GSP 231, Editors: C. Meehan, D. Pradel, M.A. Pando and J.F. Labuz, pp. 1450-1459, DOI: Link:

Outreach Programmes/Extension Services

- Consulting for Global Forum for Sustainable Development

DR. SAMUEL FOSU GYASI

Research Activities/Interests

- Clinical Microbiology
- Water, Sanitation and Hygiene,
- Public health and Environmental Health,
- Water and Waste Water Treatment and Management,
- Nano-tech Bio-diagnostics,

Publication(s)

- **Gyasi S F.,** Abeberese JKA, Afriyie V.N, Kwofie, I & Kobina, E (2016). Maternal Mortality, Proteinuria and Pregnancy Induced Hypertension: Case Study of a Regional Hospital in Brong Ahafo Region, Ghana. Journal of Biology, Agriculture and Healthcare Vol.6, No.14. 2016.

- Jerry Lawrence Authur, **Samuel Fosu Gyasi**, Amos T. Kabo-Bah and Esi Awuah 2015. Rainfall Variability and its Impact on Reported OPD

Cases of *Salmonella Typhii* in Sunyani, Ghana, Research Journal of Environmental sciences, 9: 39-47, DOI: 10.3923/rjes.2015.39.47

- Jacob Kwadwo Amponsah Abebrese, **Samuel Fosu Gyasi,** Margaret Gyapong (2015) Assessing the Reporting System of Maternal Mortality: A Case Study of a Health Care Centre in the Asuogyaman District,Ghana, Journal of Biology, Agriculture and Healthcare, Vol.5, No.4,

- Awuah E., **Gyasi S.F.**, Anipa H. K. and Adjei A, (2014). Microbial Quality of Sachet and bagged Drinking water: A case Study in Kumas, Ghana. Research Journal of Microbiology, 9: 199-207 DOI: 10.3923/jm.2014.199.207
- **Gyasi S.F.,** Awuah E.**,** Koffour G. A., Sampson D. K., Debrah A Y. (2014) Comparative analysis of environmental arsenic and other heavy metals in 2 Buruli Ulcer endemic districts in the Ashanti Region, Ghana JENRM, Vol. I, No. 1, 56-62, 2014, Research Article
- Appiah-Effah E, Nyarko K. B., **Gyasi S. F.,** and E. Awuah (2014). Faecal sludge management in low income areas: a case study of three districts in the Ashanti region of Ghana, IWA Publishing 2014 Journal of Water, Sanitation and Hygiene for Development | 04.2 | 2014, Doi: 10.2166/washdev.2014.126
- Bosompem M. O., Agyapong E. A., **Gyasi S. F.** and E. Awuah (2014). An Empirical Perspective of Water Quality in Appeadu: A suburb of Kumasi in the Ashanti Region, Ghana. Trends in Applied Sciences Research, 9:144-152 DOI: 10.3923/tasr.2014.144.152, URL:http://scialert.net/abstract/?doi=tasr.2014.144.152

Conferences/Workshops/Seminars

i. Participant: Toxicological responses of environmental arsenic in ICR mice to the development of *M. ulcerans* infections to Buruli Ulcer Development in the Amansie West District of Ghana-Water and Sanitation Conference, ISNTD-London, September 2017.

ii. Participant: Adaptation of nanotechnology bio-diagnostic for detecting NTDs, Conference theme: Diagnostics, drug discovery and Development, by ISNTD at Welcome Trust, London, May 20 to 21, 2015.

iii. Participant: Environmental sanitation attitudes and Its potential impact on BU infections in the Asanti Akim Agogo, Ghana*, Conference theme*. Buruli Ulcer Control Programme Meeting at WHO Headquarters (HQ), Executive Board Room, Geneva, Switzerland, March, 2015.

iv. Participant: Presentation of Some of my Research Works (*Dept. of Civil and Environmental Engineering*), University of Edinburgh, Scotland, April, 2015.

v. Participant: Comparative analysis of environmental arsenic and other heavy metals in 2 Buruli Ulcer endemic districts in the Ashanti Region, Ghana, Conference theme. Buruli Ulcer Control Programme Meeting at WHO Headquarters (HQ), Executive Board Room, Geneva, Switzerland, March, 2015.

vi. Participant: *Poster Presentation-* Clinical, haematological and histopathological responses to arsenic toxicity in ICR mice using levels synonymous to Buruli Ulcer endemic communities in the Amansie West District of Ghana Bites2015, ISNTD-London, March 2015,

Outreach Programmes/Extension Services

- Reviewer, IWP WashDev, UK, 2013 till date,
- Reviewer, IJPEH, UK., 2013 till date,
- Reviewer, Journal, OALib, 2013 till date
- Reviewer, Journal of Energy and Natural Resources, 2014 till date,
- TV and Radio advocacy on Water, Sanitation and Health, 2013 till date
- Key Note Speaker/Guest of honor, Environmental Health Professionals of Ghana, Quarterly Meeting (University of Cape Coast), 9th August, 2016

MR. PROSPER ANUMAH

Research Activities/Interests

- Reservoir characterization and modelling
- Geomechanical studies
- Prospect Evaluation & Risk Analysis
- Basin and Petroleum System Modelling

Publication(s)

- Ramaiah, T.K., **Anumah, P**., (2013) Comparative Study on Hydrocarbon Reserve Estimation Methods. International Journal of Engineering Science & Advanced Technology, ISSN: 2250-3676, Volume 3, Issue 1, Jan-Feb 2013.

Conferences/Workshops/Seminars

- Participant: Training Workshop for Senior MembersOrganized by Vice Chancellor (UENR), University Auditorium, Sunyani, Feb. 17, 2017.

MR. FELIX AMANKWAH DIAWUO

Research Activities/Interests

- Demand Side Management strategies (Energy Efficiency & Demand Response)
- Renewable Energy Science: Solar, Wind, etc.
- Energy Policies
- Energy Economics

Publication(s)

- Boateng, J.A. and **Diawuo, F.A.** (2015). Design and hydrodynamic loading analysis of production riser for the Arctic, Int. J. Petroleum Engineering, Vol. 1, No. 4, pp.221–244

- **Diawuo F.A.**, Kaminski J., (2017). An analysis of the Ghana power generation sector using an optimization model. Journal of Power Technologies, 97(1), 15.

Conferences/Workshops/Seminars

- Conference on "MIT Portugal: 10 years engineering a better future" organized by MIT Portugal Program. University of Minho, Braga-Portugal, June 29-30th, 2016
- Training course on "Solar Energy Application and Management for Developing Countries" organized by Gansu Natural Energy Research Institute (GNERI)/ UNIDO International Solar Energy Centre (ISEC), Lanzhou-China, May-June 2015

Outreach Programmes/Extension Services

- Trainer and Installer: (Installed Grid-tied and Offgrid Solar PV System in Liberia and Ghana; Installed Solar-powered Street lights at UMaT, Tarkwa; UDS, Tamale, GIMPA, Accra, etc.)
- Member, Committee on community outreach and economic development
- Member, development of Handbook on Ebola Virus Disease (EVD) awareness, prevention and Control
- Member of the organizational team for the conduction of Solar PV training and Energy Management courses organized by Dept. EEE, UENR, August-September, 2015
- Team Member, presentation of graduate courses at Newmont-Ghana, Ahafo and Sunyani Polytechnic.

MR. JUSTICE SARKODIE-KYEREMEH

Research Activities/Interests

- Unconventional Petroleum Systems
- Hydrate Inhibition
- Drilling Mechanics

- Advanced Well Control
- Petroleum Production Technology

Conferences/Workshops/Seminars

- Participant: GhIE Conference, Eusbett Hotel, Sunyani. 27th to 31st March, 2017.
  Theme: "Ghana's Natural resources and Sustainable Development – The Role of the Engineer"
- Participant: Workshop for Senior Members, University of Energy and Natural Resources, Sunyani. 26th January 2017
- Participant: SPE Conference, All Nations University College, Koforidua. 28th to 29th April, 2016
  Theme: "Capacity Building in Ghana's Oil Industry – The Role of Tertiary Education"

- Participant: SPE Seminar, University of Energy and Natural Resources, Sunyani. 21st October, 2016.
  Theme: "Who Can Be In the Petroleum Industry – Your Role In The petroleum Industry.

MR. EMMANUEL ACHEAW

Research Activities/Interests

- Basin studies and Petroleum geoscience
- Enhance Oil Recovery Techniques
- Drilling Engineering Techniques
- Seismic Acquisition and Interpretation.
- Renewable Energy System techniques in Petroleum Engineering

Conferences/Workshops/Seminars

- Participant: 7th Annual Oil and Gas summit Ghana CWC Group at Accra International Conference Centre, 20 - 21st April, 2016.

- Participant: Ghana institution of Engineers (GhIE) Conference, Eusbett Hotel, Sunyani. 27th to 31st March, 2017.
  Theme: "Ghana's Natural resources and Sustainable Development – The Role of the Engineer"
- Participant: Workshop for Senior Members, University of Energy and Natural Resources, Sunyani. 26th January 2017
- SPE Seminar, University of Energy and Natural Resources, Sunyani. 21st October, 2016.
  Theme: "Who Can Be in the Petroleum Industry – Your Role in The Petroleum Industry?

Outreach Programmes/Extension Services

- Consultant: for Wintech Professional Institute to establish the first International Association of Drilling Contractors (IADC) training program in Ghana.

MR. YAW AKYAMPON BOAKYE-ANSAH

Research Activities/Interests

- Numerical Modelling and Reservoir Simulation
- Enhanced Oil Recovery
- Multi-phase Fluid Flow in Porous Media
- Reserve Estimation

Conferences/Workshops/Seminars

- Participant: Petroleum Testing Seminar, Spintex, May 2016
- Participant: Ghana Institution of Engineers (GhIE) Annual Conference, Sunyani, April 2017
- Participant: Training Workshop for Senior Members, University of Energy and Natural Resources, Sunyani. January 2017
- Speaker: 2017 SPE PetroBowl Quiz Competition, University of Energy and Natural Resources (Topic: Making Good Decisions)

Outreach Programmes/Extension Services

- Facilitator, National Service Capacity Building Seminar for Sunyani West NASPA, Sunyani (Speaker on Aptitude Tests)
- Facilitated the acquisition of two software packages for the Petroleum Engineering programme

DR. AMOS T. KABO-BAH

Research Activities/Interests

- Hydrology and Water Resources
- Hydrological Modelling
- Climate Change Modelling
- Applied satellite technologies for improved management of water, energy, disasters, climate, weather, health, ecosystems, agriculture and ecosystems

Publication(s)

- Mortey, E. M., Ofosu, E. A., Kolodko, D. V., & **Kabobah, A. T**. (2017). Sustainability Assessment of the Bui Hydropower System. Environments, 4(2), 25.
- Obahoundje, S., Ofosu, E. A., Akpoti, K., & **Kabo-bah, A. T.** (2017). Land Use and Land Cover Changes under Climate Uncertainty: Modelling the Impacts on Hydropower Production in Western Africa. Hydrology, 4(1), 2.
- **Kabo-Bah, A. T**., Diji, C. J., Nokoe, K., Mulugetta, Y., Obeng-Ofori, D., & Akpoti, K. (2016). Multiyear Rainfall and Temperature Trends in the Volta River Basin and their Potential Impact on Hydropower Generation in Ghana. Climate, 4(4), 49.
- Akpoti, K., Antwi, E. O., & Kabo-bah, A. T. (2016). Impacts of Rainfall Variability, Land Use and Land Cover Change on Stream Flow of the Black Volta Basin, West Africa. Hydrology, 3(3), 26.
- Akinbami, C. A. O., Ifeanyi-Obi, C., Appiah, D. O., & **Kabo-Bah, A. T.** (2016). Towards sustainable adaptation to climate change: The role of

indigenous knowledge in Nigeria and Ghana. African Journal of Sustainable Development, 6(2), 189-214.

- Atta-Darkwa, T**., Kabo-bah, A. T**., Akolgo, G. A., Kotei, R. and Amo-Boateng, M. 2016. Assessment of groundwater quality for irrigation in the Oda river basin, Ejisu-Besease, Ghana. International Journal of Current Research, 8, (05), 30994-31001.
- Nicholas Miwornunyuie, **Amos. T. Kabo-Bah**, Komlavi Akpoti, 2016. Effect of the sunyani municipal waste dumpsite on surface water quality. Global Journal of Bio-Science and Biotechnology. Vol 5(3). 381-391
- Bakhtawarwagan, Zhanyu Zhang, Feng Baoping, Si Han & **Amos T. Kabo-Bah** (2015). Drought trends and temperature influence in zhanghe river basin, china. Advances in Meteorology – Volume 2015, http://dx.doi.org/10.1155/2015/160953

Conferences/Workshops/Seminars

- Chairman-LOC, 2nd AfriGEOSS Symposium on Delivering Earth Observations for Policy and Sustainable Societal Impact in Africa, 13th - 15th June 2017, Sunyani, Ghana
- Participant: 1-2 February 2017, GEO Implementation Programme Board Meeting, Geneva-Switzerland
- Participant: 1st AU-ROK STI Workshop (African Union Commission, department of Human Resources, Science and Technology - Republic of Korea, Science, Tecnhology and Innovation Workshop) 2017 in Addis Ababa, Ethiopia from 25 to 27 April 2017
- Participant: Invited Speaker and Chair of Selected Panel Sessions: 11th AARSE International Conference, 24th to 28th October 2016, Kampala, Uganda
- Participant: Invited Speaker – SSSTA 2016 - The 5th Annual International Conference on Space Science and Satellite Technology Applications – All Nations University, Koforidua-Ghana.
- Participant: 5 - 7 FEBRUARY 2015, Circle Visiting Fellows Workshop, Nairobi, Kenya
- Participant: 5 -7 May 2015 , 2015 GEO Work Plan Symposium, World Meteorological Organization (WMO), Geneva- Switzerland

- Participant: 20-22 April 2015, GEO Water Quality Summit, World Meteorological Organization, Geneva-Switzerland
- Participant: 1-25 April 2015, TIGER Capacity Building Tailored Training, University of Twente, Enschede, The Netherlands
- Participant: TIGER European Space Agency Programme - Water Observation and Information System for Flood Monitoring, AARSE conference, 29. Oct. – 1. Nov., 2016. Kampala, Uganda.
- Participant: TWAS Science Diplomacy Workshop on Sustainable Water Management, Trieste, Italy, 30 November-5 December 2015.
- Participant: Summer Academy 'Energy and the Environment' 2015: Governing Climate Change: A Multi-Level Approach to Energy System Transformation, 19 - 24 July, 2015. Greifswald and Berlin, Germany.

Outreach Programmes/Extension Services

- Head, Earth Observation Research and Innovation Centre, University of Energy and Natural Resources, Sunyani, Ghana
- Programme Board Member, Group on Earth Observation, Geneva, Switzerland
- Board Member, Afram Plains Development Organisation, Donkorkrom, Easter Region, Ghana
- Founder, Green Water Hut, Ghana
- Co-Founder, Eco Youth Africa Initiative

DR. SAMUEL GYAMFI

Research Activities/Interests

- Energy Demand Side Management
- Renewable and Sustainable Energy for Developing Countries

Publication(s)

- **Gyamfi, S**., Modjinou, Diawuo F. A., Kumi, E. N., Frank S., Modjinou, M. (2017) Energy Efficiency Situation in Ghana. *Renewable and Sustainable Energy Reviews. http/dx.doi/10. 1016/j.rser.2017.0*

- Saka, M., Diawuo F.A., Katzenback R., **Gyamfi, S**. (2017). Towards a sustainable electrification in Ghana: A review of renewable energy deployment policies. *Renewable and Sustainable Energy Reviews, 79 (2017) 544–557*

- **Gyamfi, S.,** Modjinou, M., Djordjevic, S. (2014) Improving Electricity Supply Security in Ghana – the Potential of Renewable Energy. *Renewable and Sustainable Energy Reviews 43(2015)1035–1045.*

- Urmee, T., **Gyamfi, S.** (2014) A Review of Improved Cookstove Technologies and Programs. *Renewable and Sustainable Energy Reviews 33 (2014) 625–635.*

- Houston, C., **Gyamfi, S.,** Whale, J. (2013) Evaluation of Energy Efficiency and Renewable Energy Generation Opportunities for Small Scale Dairy Farms: A Case Study in Prince Edward Island, Canada. *Renewable Energy 67 (2014) 20 - 29.*

- Gyamfi, S., Krumdieck, S. and Urmee, T. (2013) Residential peak electricity demand response - Highlights of some behavioural issues. *Renewable and Sustainable Energy Reviews* 25: 71-77.

Conferences/Workshops/Seminars

- ICEASSM 2017 – International Conference on Engineering, Applied Science and System Modeling.

- African Engineering Conference On Energy
- Renewable Energy And Energy Efficiency: Accelerating Energy Access And Security
- Ghana Integrated Green Economy Implementation Plan
- Sustaining Hydropower Energy For Economic Growth And Development In West Africa

Outreach Programmes/Extension Services

- Chairman: Energy Group Committee
- Patron: Mechanical Engineering Student Association (MESA),
- Founder: Club of Real and Buoyant Engineers for Innovation and Creativity (CRABIC)

DEPARTMENT OF MECHANICAL AND MANUFACTURING ENGINEERING

The Department runs a 4-year degree programme leading to the award of a Bachelor of Science (BSc.) degree in Agricultural Engineering and Mechanical Engineering. The Department was established in the 2013/2014 academic year and admitted its first batch of students into the Department in the same year of establishment.

The Department programmes have been designed to produce the next generation of mechanical and agricultural engineers with the necessary knowledge and skills to provide cutting edge solutions to everyday issues confronting society. In addition, students are equipped with the necessary engineering tools and entrepreneurial skills that will make them highly integral and useful for industries in Ghana in particular and the world at large.

The Department's areas of specializations are within (1) Thermofluids and Energy Systems Engineering; (2) Applied Mechanics; (3) Automobile Engineering and (4) Design and Manufacturing Engineering. Students enrolled in the Mechanical Engineering programme from first year to

third year will have the opportunity to study basic core courses in all the four main sections. However, in the final year, students are allowed to select only one section for specialization that will define the student's unique area of interest.

In the course of the academic year, the Department undertook the following activities:

- Inauguration of Mechanical Engineering Student Association (MESA), UENR on 4th March
- Visit of MESA, UENR to Kantanka Automobile Assembly Plant at Gomoa Mpota in Central Region of Ghana.
- Staff attended ECOWREX II Regional Stakeholders' Meeting held at the E- Classroom of The Energy Center (TEC)-KNUST
- Final year Industrial Field Trip to KNUST
- MKTPlace Project ID 1293: Design, Evaluation and Fabrication of Multifeed-Biomass Gasifier stove for smallholder families (Ongoing project)
- Participation in the Maiden Science Festival Organized for pre-tertiary institutions (Junior and Senior high schools) in Brong Ahafo Region.

FUTURE PLANS

The Department in the near future intends to mount the following programmes;

1. Mechanical Engineering –MSc/PhD
2. Mechanical Engineering - Diploma

TEACHING STAFF

The following constitute the teaching staff of the Department: Their names and qualifications are given in the Table below.

Name	Qualification	Designation	Area of Specialization
Dr. Samuel Gyamfi	PhD(Canterbury) MSc (Aachen) BSc.(KNUST)	Lecturer/HoD	Energy Demand Side Management and Demand Response Renewable and Sustainable Energy for Developing Countries
Dr. Thomas Atta-Darkwa	PhD(KNUST), MSc.(KNUST), BSc(KNUST)	Lecturer	Irrigation and Drainage Design Systems Waste Water Treatment and System Design Water Quality Analysis
Dr. Charles Sekyere	PhD(KNUST), MSc.(KNUST), BSc.(KNUST)	Lecturer	Thermo fluids and Energy Systems Engineering
Mr. Ebenezer Nyarko Kumi	MSc.(KNUST), BSc. (KNUST)	Lecturer	Solar PV Systems Energy Planning Power Plant Engineering Solar Air-Conditioning
Mr. Gilbert A. Akolgo	MSc(UG), BSc.(KNUST)	Lecturer	Thermo-chemical conversion of biomass Design of systems and devices, Agricultural mechanization.
Mr. Eric O. Essandoh	MSc.(KNUST), BSc(KNUST)	Assist. Lecturer	Wind Energy Studies) Development of biocompatible Prostheses

			Design of innovative farm implements and Expansion of the Scope of the Welding Industry in Ghana
Mr. Felix Uba	MSc.(KNUST), BSc.(KNUST)	Assist. Lecturer	Thermal comfort analysis Heating and cooling load analysis and simulation Numerical simulation of particles Energy analysis of solar systems
Mr. Eric Akowuah	MSc. Mech. Eng., BSc. Mech. Eng., Diploma in Education.	Part time Lecturer	Design and Manufacturing, Biomechanics, Applied Mechanics
Mr. Bright O. Adunu	Bsc. Mech. Eng.,	Demonstrator	Thermo-fluid and energy systems

DR. SAMUEL GYAMFI

Research Activities/Interests

- Energy Demand Side Management
- Renewable and Sustainable Energy for Developing Countries

Publication(s)

- **Gyamfi, S**., Modjinou, Diawuo F. A., Kumi, E. N., Frank S., Modjinou, M. (2017) Energy Efficiency Situation in Ghana. *Renewable and Sustainable Energy Reviews. http/dx.doi/10. 1016/j.rser.2017.0*

- Saka, M., Diawuo F.A., Katzenback R., **Gyamfi, S**. (2017). Towards a sustainable electrification in Ghana: A review of renewable energy deployment policies. *Renewable and Sustainable Energy Reviews, 79 (2017) 544–557*

- Rahman, M., Hettiwatte, S. **Gyamfi, S** (2014) An Intelligent Approach of Achieving Demand Response by Fuzzy Logic based Domestic Load Management, Proceedings of Australasian Universities Power Engineering Conference, AUPEC 2014, Curtin University, Perth, Australia. 28 September– 1 October, 2014

- **Gyamfi, S.,** Modjinou, M., Djordjevic, S. (2014) Improving Electricity Supply Security in Ghana – The Potential of Renewable Energy. Renewable & Sustainable Energy Reviews 43(2015): 1035 – 1045.

DR. THOMAS ATTA-DARKWA

Research Activities / Interests

- Irrigation and drainage design schemes
- Groundwater flow modelling and pollution transport systems
- Parameter estimation using mathematical models
- Agricultural water management

Publication(s)

- Kotei, R., Agyare, W.A., Kyei-Baffour, N., **Atta-Darkwa, T.** and Atakora, E.T. (2016). Estimation of flow-duration and low-flow frequency parameters for the Sumanpa River at Mampong in Ghana for the 1985-2009 period. American Scientific Research Journal for Engineering, Technology, and Sciences. Vol. 15, No. 1, pp 62-75.
- Kotei, R., Agyare, W.A., Kyei-Baffour, N., Kena, F.N. and **Atta-Darkwa, T.** (2015) Development of groundwater recharge model for the Sumanpa catchment at Ashanti Mampong in Ghana. Science

Research. Vol. 3, No. 6, pp. 289-295.

- Kotei, R., Kyei-Baffour, N., Agyare, W.A., Bukari, J. O., Korankye, O., **Atta- Darkwa, T.** and Amartey, J. N. A. (2015). Evaluation of the performance of the Sataso Irrigation Scheme in Ghana after its inception and after the post- rehabilitation periods. Journal of Agricultural and Biological Science. Vol. 10No. 10, pp 394-406.

Conferences/Workshops/Seminar

- Moderator: Conference on Hydropower Energy in West Africa under the theme "Sustaining Hydropower Energy for Economic Growth and Development in West Africa.". 12-14 November, 20015. University of Energy and Natural Resources, Sunyani, Ghana.
- Participant: Embrapa workshop on "Biochar Production and Ecotoxicology"

  Sponsored by Market Place Agriculture, Brazil and University of Energy and Natural Resources, Sunyani, Ghana. 5th November, 2015.

GILBERT AYINE AKOLGO

Research Activities/Interest

- Agricultural Machinery Design
- Energy Conversions and Power Systems – Thermochemical Biomass and Municipal Waste conversions to Energy
- Application of Solar to Agricultural/Farm Power
- Irrigation System

Publication(s)

- Atta-Darkwa T., Kabo-bah A. T., **Akolgo G. A.,** Kotei R. and Amo-Boateng M., (2016). Assessment of groundwater quality for irrigation in the Oda River basin, Ejisu-Besease, Ghana. Internal Journal of Current Research, Vol. 8, (05).

- Atta-Darkwa T., **Akolgo G. A.**, Kyei-Baffour N., Agyare W. A. and Abagale F. K. (2016). Hydrological classification of the Besease inland valleybottom in Ghana for crop production using the watertable fluctuation method.Int. J. Water Res. Environ. Eng. Vol. 8(7) (81-91).
- **Akolgo G. A.,** Josiah M. N. and Mahama A. A., (2015) Field evaluation of rice losses of the Yanmar DD 1000 thresher. Journal of Ghana Science Association, Vol. 16 No. 1

Conferences/Workshops/Seminars

- Participant: The MKTPlace Forum 2015 for Project Leaders organized by Agricultural Innovation MKTPlace, Brasilia - Brazil, from September 15th to 18th, 2015.
- The Brazilian Biochar Training Program, Sinop, Brazil (15/06/15 to 17/06/15)
- Resource Person: Biochar and Ecotoxicology Workshop Organized by UENR, Ghana-EMBRAPA and Sponsored by MKTPlace, Sheila Executive Lodge, Sunyani, 5th November, 2015.
- Participant: Clean Cooking Forum organized by Global Alliance for Clean Cookstoves Ghana, Alisa Hotel, Accra Ghana, 10th and 13th November, 2015.

- The 7th Africa Agriculture Science Week, organized by Forum for Agricultural Research in Africa, 13 – 16 June, 2016, Kigali, Rwanda.

ERIC OSEI ESSANDOH

Research Activities/Interest

- Wind Energy
- Energy Conversions and Power Systems - Plasma Gasification of Fuels and Waste for improving sanitation and Power Generation
- Development of the Welding Industry in Ghana
- Design and Construction of Machines/Machine Elements

Publication(s)

- **Essandoh E. O.** Osei E.Y. and Adam F.W. (2014), Prospects of Wind Power Generation in Ghana. International Journal of Mechanical Engineering and Technology (IJMET), Volume 5, Issue 10, October (2014), pp 156-179.

- Osei E.Y. and **Essandoh E.O.** (2014), RETScreen Assessment of Utility-Scale Wind Power Generation Based on Historical Wind Speed Data- The Case of Mankoadze in the Central Region of Ghana.

- Adam F.W., **Essandoh E.O.,** Tawiah P.O. (2013), The Suitability of Oxytenanthera Abyssinica for Development of Prostheses in Developing Countries, International Journal of Advanced Research in Engineering and Technology (IJARET), Volume 4 Issue 5 pg. 87-97

- **Essandoh E.O.,** Brew-Hammond A., Adam F.W (2013), Wind Data Collection and Analysis in Kumasi, International Journal of Mechanical and Mechatronics (IJMME – IJENS), Volume 13 No.4

Conferences/Workshops/Seminars

- Workshop Facilitator: Biochar and Ecotoxicology Workshop Organized by UENR, Ghana-EMBRAPA and Sponsored by

MKTPlace, Sheila Executive Lodge, Sunyani, 5th November, 2015

- Participant: Ghana Solar Initiative Project Workshop held on 4 April, 2017 at KNUST
- Team Member: ECOWREX II Regional Stakeholders' Coordination Meeting Organized by TEC-ECREEE and Funded by European Union, KNUST, Kumasi, 5th April, 2016.
- MIDEA Air Conditioner Installation Training held in 2016 at UENR Under the South-South Cooperation Project
- Solar Street Lighting Training and Installation held in 2016 at UENR under the South-South Cooperation Project

Outreach Programmes/Extension Services

- Researcher: Cooking Fuels and Methods of Low Income Earners in Ghana (Funded by MKTPlace)

FELIX UBA

Research Activities/Interest

- Thermal comfort analysis
- Heating and cooling load estimation and simulation
- Computational fluid dynamics
- Energy analysis of solar systems

Publication(s)

- Sarsah, E. A., & **Uba, F. A.** (2013) Emprical Correlations for the Estimation of Global Solar Radiation Using Meteorological Data in Wa, Advances in Applied Science Research, 4(4): 63-71.
- Sarsah, E. A., & **Uba, F. A.** (2013) Monthly-Specific Daily Global Solar Radiation Estimates Based On Sunshine Hours in Wa, Internal Journal of Technology & Research, 246-254, Vol. 2, Issue 8.

- Sarsah, E. A., & **Uba, F. A.** (November, 2013) Emprical Determination and Analysis of Hourly Solar Heat Gain Factors in Wa, Ghana. Internal Journal of Engineering Research & Technology, 2634-2640, Vol. 2 Issue 11.
- Sunnu, A. K., Sarsah, E. A., & **Uba, F. A.** (November, 2013) The Mechanism of Clogging of Road Vehicle Combustion Air Filter by Road Dust, Internal Journal of Science and Technology, 763-769, Vol. 2 Issue 11.
- **Uba, F. A.,** & Sarsah, E. A. (2013) Cooling Load Temperature Differential Values for Building in Ghana, Internal Journal of Technology & Technology Research, 222-235, Vol. 2, Issue 12.
- **Uba, F. A.,** & Sarsah, E. A. (2013) Optimization of Tilt Angle for Solar Collectors in Wa, Advances in Applied Science Research, 4(4):108-114.
- **Uba, F. A.,** Fiagbe, Y. A., & Sarsah, E. A. (2013) Simplified Procedure for Estimating Air-Conditioning Cooling Load in Ghana, International Journal of Scientific & Technology Research, 38-46, Vol 2, Issue 9.

MR. EBENEZER NYARKO KUMI

Research Activities/Interests

- Solar Cooling Systems
- Energy Management, Planning and Policy

Publication(s)

- UNEP (2016), GE-TOP Ghana Strategy Proposal –Realizing Solar PV Projects in a Cross-Border Power Supply Context Geneva: UNEP
- UNEP (2015), Ghana Solar Export Potential Study. Geneva: UNEP
- Obeng, G.Y. and Kumi, E. N. (2014), "Quantitative Impacts of Solar PV on Television Viewing and Radio Listening in Off-grid Rural Ghana", Energy and Environment Research, Vol. 4, No. 1, pp. 62 – 73

Conferences/Workshops/Seminars

- Participant: African Engineering Conference on Energy. Tropicana Conference Centre, Uyo, Akwa Ibom State, Nigeria from 21st – 25th November 2016

DR. CHARLES SEKYERE

Research Activities/Interests

- Fluid and themodynamis
- Energy Management, Planning and Policy

Publication(s)

- Afriyie, J.K., Asare, V., **Sekyere, C. K.K.**Bart-Plange, 2016. The effect of bulk density on thermal conductivity of powered "Navrongo 4" and "Tom" varieties of Bambara groundnuts.*Journal of Applied Science, Technology and Management. Vol 1, No. 1 (2016).*
- Afriyie, J.K., Achaw, O. W., Aikins, K. A., **Sekyere, C. K. K.**, Bart-Plange, 2016. Field Drying of Cassava in a Solar Tent Dryer equipped with a Solar Chimney. IJSEA V 5 (3), 161-175 (online). ISSN -2319-7560.
- **C. K. K Sekyere**, F.K Forson, A Amo-Aidoo,, J.K Afriyie "Experimental Studies on an Evaporative Cooler as an option to mitigate post-harvest losses experienced by commercial producers of vegetables in Ghana", *International Journal of Engineering Trends and Technology (IJETT)*

V33 (9), 453-461 March 2016. ISSN: 2231-5381. *www.ijettjournal.org. published by seventh sense research group.*

- **Sekyere, C.K.K.**, Forson, F.K., Adam, F.W., 2016. Experimental investigation of the drying characteristics of a mixed mode natural convection solar crop dryer with backup heater. Renewable Energy Journal 92 (2016), 532 – 542.

Conferences/Workshops/Seminars

- Seminar on Development and Utilization of clean and renewable energy for developing countries
- Stakeholders workshop on the results of the early stage hydropower sustainability assessment of six potential hydropower sites in Northern Ghana
- Hydropower Sustainability Protocol Capacity Building IHA (International Hydropower Association) and SECO (State Secretariat for Economic Affairs of Switzerland) V33 (9), 453-461 March 2016. ISSN: 2231-5381. *www.ijettjournal.org. published by seventh sense research group.*

EARTH OBSERVATION RESEARCH AND INNOVATION CENTRE

The Earth Observation Research and Innovation Centre (EORIC) is a vibrant research Centre of the University of Energy and Natural Resources(UENR) responsible for the acquisition of a near real time satellite-based data, air-borne and in-situ data, metadata and products, automatic weather monitoring, operations and management of unmanned aerial systems, virtual regional fire monitoring and modelling, organization of training programmes in the use of Earth Observation (EO) and Geographic Information Systems (GIS) techniques, collectively towards making informed decisions in the areas of water, disasters, health, energy, climate, agriculture, ecosystems and biodiversity.

Per the current infrastructure, the Centre is capable of covering the whole of the West African sub-region and some portions of North and Central Africa in terms of real-time acquisition of relevant aerial images via a ground station satellite receiver.

The ground satellite receiver at the Centre is the first of its kind in the West African sub region and it is currently receiving and processing MODIS and VIRS data. The Centre is currently offering real-time fire detection services to various stakeholders in West Africa.

EORIC's vision is to become a leading Research Centre in Africa in the promotion and dissemination of value-added satellite and in-situ based data and information, transfer of ultra-modern affordable space science skills and technologies, enhancing innovations in theoretical and applied sciences for meeting the needs of society. The Centre therefore promotes, facilitates and supports the acquisition and application of geospatial technologies in interdisciplinary research and education in areas of water, disasters, energy, climate, agriculture, ecosystems, weather health and biodiversity.

The Centre consists of the following divisions offering various services:

- Satellite Weather and Climate – Acquisition, processing and analysis of real- time satellite imagery for West Africa and beyond.
- Unmanned Aerial Systems – Consultancy services in the application of unmanned aerial vehicles (drones) in the monitoring and management of natural resources.
- Climate Informatics – Master's and PhD programs in the application of Earth Observation Technologies in climate change studies.
- Advanced Virtual Fire Lab – Consultancy services in the use of the Advanced Fire Information System (AFIS) – an early warning and alert system - for farmers, governmental agencies, insurance companies and corporate bodies.
- Virtual Environmental Lab – Organizes training programs in the use of GIS &GPS for natural resource management.

- High Performance Computing – Provides services in the computational processing of large geospatial datasets, CFD research and modelling and GPU computing.

CURRENT INFRASTRUCTURE

The Centre is currently resourced with a Direct Broadcast Earth Observation Satellite Ground Station Receiver. The Earth Observation Satellite Receiver receives real-time data from a number of satellites: Metop A&B, TERRA & AQUA, Suomi NPP and NOAA. These data are transferred through optical fiber for further processing at the Earth Observation Satellite Ground Station. At the Ground Station, algorithms are run on the raw data to produce the final products. One relevant outcome of this processing is a real-time fire detection product which is fed into AFIS (AFIS website for West Africa).

Real-time Reports from Automatic Weather Station

The Centre is currently receiving weather data from this station. The station, records data every 15 minutes and this is telecast via a Wi-Fi system into a designated computer at the Centre.

Computational Modelling

The High Performance Computing Laboratory currently has a cluster of computers that runs on CPUs and GPUs. The laboratory processes large geospatial datasets and also undertakes CFD research modelling and GPU computing. The laboratory is currently running Weather Research and Forecasting Model (WRF) for Ghana and the West African Sub-region. Capacity building in areas of climate change, flood, drought and fire disaster management and the use of UAVs for resource management are other services provided by the Centre. The Centre has the in- house infrastructure to support the development of useful apps in the areas of climate, health, disasters, energy and agriculture.

ACTIVITIES

Local and international visits

The Centre has become the most valuable point in the University for most visitors to the University and has attracted several visitors ranging from, diplomats, high schools students to various institutions and universities across the globe and within Ghana.

Reports

The Centre has been regularly sending reports to the Ghana National Fire Service, National Disaster Management Organisation and Forestry Commission on wild fire outbreaks in Ghana. These reports are to facilitate the activities of these national agencies.

Inauguration of COSMIC-2/FORMOSAT Ground Station

During the year under review, the $1.2 million COSMIC II Ground station was inaugurated by the University and its funding partners (NOAA and Taiwan space Agency. The Cosmic II project which is the only one in Africa among other similar projects in the World is aimed at improving numerical weather forecasting in the world.

AfriGeoss International Symposium 2017

During the year under consideration, the Centre hosted the 2nd International AfriGeoss symposium which was attended by aver 180 participants from across the world. The 3-day symposium among other things deliberated on use of the earth observation to address issues related climate change, agriculture, food security among others for sustainable development.

FUTURE PROJECTS

Carbon Monitoring Tower

The Carbon Monitoring Tower is currently being supported by the Global Change Research Institute of the Czech Republic. This project would further strengthen the capacity of the Centre to collaborate with several partners in the sub-region to provide some solutions towards the sustainable development goals and, minimise the potential impacts of climate change in the sub-region.

GMES-Africa 2017

The Centre is working towards joining the Global Monitoring of Environment and Security Africa (GMES-Africa). This project is expected to kick start by the end of 2017. The Centre is to provide consultancies to this international consortium.



SCHOOL OF SCIENCES

Introduction

The School of Sciences was established during the 2014/2015 academic year and became fully operational in the same academic year. The overall objectives of the School are to provide students with competitive skills and competencies within the science technology sector and as well as equip students with the necessary leadership skills required to function in the technological world.

Currently, the School consists of three Departments; Department of Computer Science and Informatics, Department of Chemical science and Department of Mathematics and Statistics. Whilst each Department offers programmes leading to

the award of undergraduate and post-graduate degrees, all Departments in the near future, will offer short courses for continued professional development.

These will be offered under part-time and flexible distance learning modes of study. The overall objective will be to provide practical and theoretical grounding in technologies and wider knowledge relevant to the energy sector for engineers and other professionals. The School has also initiated plans introduce programmes leading to: diploma in Laboratory Technology, certificate in Information Technology, MSc. Big Data and Business Analytics and other Mathematics' related Programmes.

Programmes under each Department

Item	Name of Department	Programmes
1	Computer Science and Informatics	Computer Sciences Information Technology
2	Mathematics and Statistics	Actuarial Science Statistics Mathematics
3	Chemical Science	Chemistry

STAFFING

The School currently has a Dean, Dr. Robert K. Akuamoah, Ag. School Secretary Mr. David Twumasi-Ankrah and two Administrative Assistants who help in the day to day running of the School's Office.

STUDENT STATISTICS

The Students' population in the School stands at Seven Hundred and Forty-Two **(742),** Six Hundred and Fifty-Three (**653**) male and Eighty-Nine **(89)** Female. The table below shows the details of the number of students in the School.

DEPARTMENT COMPUTER SCIENCES AND INFORMATICS
BSc. Computer Sciences/ Information Technology

Year/Level	Male	Female	Total
	312	30	342
Total			**342**

DEPARTMENT OF MATHEMATICS AND STATISTICS
BSc. Mathematics/ Statistics

Year/Level	Male	Female	Total
100	262	47	309
Total			**309**

DEPARTMENT OF CHEMICAL SCIENCE
BSc. Chemistry

Year/Level	Male	Female	Total
	79	12	91
Total			**91**

ACTIVITIES OVER THE PAST YEAR FOR THE SCHOOL

During the period of review, the departments under the School undertook the following activities.

- The Department Mathematics and Statistics partnered with the Mathematical Sciences Students Association (MaSSA) to organize Mathematics quizzes for Senior High Schools in the Brong-Ahafo Region to help promote the study of Mathematics especially at the elementary level. This year, students at the Department embarked on a week-long

outreach programme at the following Senior High Schools (SHS) in the Brong-Ahafo Region:

- Goka Senior High School
- Nsawkaw State Senior High School
- Nafana Senior High School

A team of five (5) students were sent to each of the above-mentioned schools. The visit was to afford our students the opportunity to share their experiences with the students at those schools. This was to help allay the fear students have for the study of Mathematics.

There was also inauguration of the Students' Chemical Society (UENR Chapter) at which students demonstrated the preparation of soap **(**through the process of **saponification)**. Some of the soap was sold at the function to raise funds for the society.

- The Department of Computer Science and Informatics also boasts of relationships with international professional training academies which include:
    - Oracle Academy
    - IBM Academy Seven (7) of the students passed the IBM Academy Examination on Big Data in 2015 and were awarded the Big Data Specialist with IBM Big Insights V2.1 Certificate)
- Plans are also underway to establish relationship with
    - CISCO Networking Academy
    - Microsoft Academy

FUTURE PLANS FOR THE SCHOOL

The department of Computer Science will in the near future mount a BSc. Business Commuting Programme in the 2017/2018 Academic Year.

Plans are Underway to start Diploma and Certificate courses in

- Information Technology

- Computer Science
- Network Technology

Plans are underway by Department of Mathematics and Statistics to start a new postgraduate programmes in Mathematics and Statistics.

The Department of Chemical Science will in the near Future introduce programmes in;

- BSc. Laboratory Technician
- M Phil Natural Product Chemistry
- M Phil Medicinal Chemistry

DEPARTMENTS OF COMPUTER SCIENCE AND INFORMATICS

INTRODUCTION

The four-year Bachelor of Science in Computer Science programme was introduced in the 2013/2014 Academic Year. The programme was designed in response to a recognized need from the information, communication and technology industry for university graduates who have a detailed knowledge, appreciation and fundamental understanding of the various computers, their production, harnessing, conversion, and environmental concerns associated with the use of IT.

The Department of Computer Science and Informatics is concerned with the theory, design, development and application of computer systems and information processing techniques. The mission of the Department is to educate undergraduate and post graduate students as well as the broader community in the fundamental concepts of the computing to help society solve problems.

STUDENT STATISTICS/POPULATION IN THE DEPARTMENT

PROGRAMME	Year/Level	Male	Female	Total
BSc Computer Science	100	23	2	25
	200	59	3	62
	300	52	4	56
	400	60	9	69
	Total	**194**	**18**	**212**
BSc Information Technology	100	34	3	37
	200	47	3	50
	300	37	6	43
	Total	**118**	**12**	**130**

ACTIVITIES OVER THE PAST YEAR

- The pioneer students of the BSc Computer Science programme are currently in Level 400 with the preceding set of students at Level 300, Level 200 and Level 100 respectively. The pioneering students are graduating this year 2017.

- The Department of Computer Science and Informatics also boasts of relationships with international professional training academies which include:

    - Oracle Academy

    - IBM Academy: Seven (7) of the students passed the IBM Academy Examination on Big Data in 2015 and were awarded the Big Data Specialist with IBM BigInsights V2.1 Certificate

- Plans are also underway to establish relationship with
    - CISCO Networking Academy
    - Microsoft Academy

- Two Lecturers of the Department are currently pursuing their PhD in China and the South Africa respectively. The Department, during the period under review received a five-year re-Accreditation of its BSc Computer Science programme from the National accreditation programme

FUTURE PLANS

The Department has developed an MSc/MPhil/PhD programme in Computer Science which is currently awaiting NCTE and NAB approval for commencement in the 2017/2018 Academic Year.

The Department also intends to mount a BSc Business Computing programme in the 2018/2019 Academic Year. Plans are underway for the Department to start diploma and certificates courses in

- Information Technology
- Computer Science
- Network Technology

TEACHING STAFF

The Department has one Associate Professor, six Lecturers (one with PhD, two of them on PhD study leave, and the remaining three are undergoing their PhD programmes in KNUST on part-time basis). Their names and qualifications are given in the table below:

Name	Qualification	Designation	Area of Specialization
Prof A. F. Adekoya	PhD, M.Sc., (Abeokuta) B.Sc, MBA (Ogun), PGD Education (LASU)	Assoc. Prof/HoD	Artificial Intelligence
B. A. Weyori	PhD, MPhil (KNUST) BSc (UDS)	Lecturer	Artificial Intelligence
Augustine Takyi	MEng (HUST, China) BSc (UG, Ghana)	Lecturer	Networking Information Security

			Community based networks Internet of things
Obed Appiah	MPhil (KNUST), BSc. (KNUST)	Lecturer	Signal Processing
Christopher Bombey Ninfaakang	MSc. (UoM, India), BSc. (UG, Legon)	Lecturer	Computer Security, Big Data, Human Computer Interaction
Peter Appiahene	MPhil(KNUST), BSc(UEW)	Lecturer	Decision Support Systems
Daniel Adu Gyamfi	MEng(UESTC, China), BSc(UDS)	Lecturer	Big Data Processing, Predictive Models, Network Security, Mobile Data Security

PROF. A. F. ADEKOYA

Research Activities/Interests:

- Artificial Intelligence, Semantic Web & Ontology, Database Systems, Enterprise Modeling, and Business & Social Informatics.
- Conceptual modeling, designs, development and deployment of intelligent data-driven systems in knowledge economies.
- Trust modeling and management in information systems security.
- The use of information technology as vehicle for capacity building, wealth creation and national development.

Publication(s)

- Faith-Michael EUzoka, BoluwajiAkinnuwesi, OluwoleNuga, **Adebayo F Adekoya**, Oluwadamilola Y Egbekunle (2016). Identifying Factors for Evaluating Software Project Proposals. International Journal of Information Systems and Management. Published by Inderscience Publishers Ltd. Volume 6, Issue 1-2. .DOI: http://dx.doi.org/10.1504/IJQET.2016.081615

- Adedamola O. Oyeniran, **Adebayo F. Adekoya,** Ademola P. Abidoye and Bamidele A. Oluwade. (2016). Development of A Database for Fishes Using Semantic Web Technologies (Case Study of Lagos State, Nigeria)1st International Conference of the IEEE Nigeria Computer Chapter Wednesday, 23rd - Saturday, 26th November, 2016 at the University of Ilorin, Ilorin, Kwara State, Nigeria.

- S.B. Adejuyigbe, S. O. Ipadeola, Adesusi, O.R. Adetunji, **A.F. Adekoya** (2015). A Knowledge Based Expert System for Silicate Glass Plant Maintenance. Journal of Natural Sciences Engineering and Technology. Published by the Federal University of Agriculture, Abeokuta, Nigeria. Vol. 14 No. 2.

- Adeyemi H.O, Adejuyigbe, S. B., Ismail, S. O., & **Adekoya, A. F.** (2013). Reducing Low Back Pain in Construction Works; a Fuzzy Logic Approach, International Journal of Ergonomics (IJEG) Volume 3, Issue 1

- Vincent, R., **Adekoya, A. F,** and Omoleh, P. (2013) A Normative Multiagent Trust Framework for Electronic Payment Analysis**.** IJCSI International Journal of Computer Science Issues, Vol. 10, Issue 2, No 3, ISSN (Print): 1694- 0814 | ISSN (Online): 1694-0784. Pp 346 – 354.

- Vincent, O. R., Folorunso, O**., Adekoya, A. F,** Ibrahalu, F. T and Jaiyeola, G. I. (2013) Enhancing E-payment Security Using Finite Element Inverse Algorithm. The Journal of Computer Science and Its Applications, Vol. 20, No 1, Pp 15 – 25

- Oluwole Adeyemi, Samuel Adejuyigbe, Olusegun Akanbi, Salami Ismaila & **Adebayo. F. Adekoya** (2013) Manual Lifting Task Methods and Low Back Pain among Construction Workers in the Southwestern Nigeria. Global Journal of Researches in Engineering, Volume 13 Issue vIIIVersion

- Peter Nimbe, J.B. Hayfron-Acquah, **B. A. Weyori** (2015). Performance, Security and Statistical Analysis of Nimbe Cipher 1 (NC1), International

Knowledge Press, Asian Journal of Mathematics and Computer Research, ISSN No. : 2395-4205 (Print), 2395-4213 (Online), Vol. 6, Issue: 1, pp. 37-60.

DR. BENJAMIN A. WEYORI

Research Activities/Interests

- Artificial Intelligence
- Computer Visions and Image Processing
- Brain Image Processing

Publication(s)

- **Benjamin Asubam Weyori** (2017) Kwame Osei Boateng, Peter N. Amponsah, Paul K. Yeboah: Efficient Novel Vector Median Filter Design for Impulse Noise Suppression In Color Images, International Journal of Innovative Computing, Information and Control (IJICIC), Volume 13, Number 2
- **Benjamin Asubam Weyori**, Kwame Osei Boateng, Paul K. Yeboah, Peter N. Amponsah (2016): Design and Implementation of the Block Matching Hybrid Median Filter for Noise Removal in Color Images, International Journal of Innovative Computing, Information and Control (IJICIC), Volume 12, Number 6, pp. 1865-1879
- **Benjamin Asubam Weyori**, Kwame Osei Boateng, Peter N. Amponsah, Paul K. Yeboah, Stephen Akobre (2016): Simulating The Effect Of Noise And Distortions On The RGB Component Of Real World Color Images, International Journal of Innovative Computing, Information and Control (IJICIC), Volume 12, Number 6, pp. 1929 -1941.
- Sheng Wang, Jianfeng Lu, Xingjian Gu, **Benjamin A. Weyori**, Jing-Yu Yang (2016): Unsupervised discriminant canonical correlation analysis based on spectral clustering. Neurocomputing, 171, pp 425-433.

AUGUSTINE TAKYI

Research Activities/Interests

- Internetworking
- Information security
- Community based networks
- Internet of things (IoT)

Publication(s)

- Nerissa E.L Anku, D. Adu-Gyamfi, A. Kankam, **Takyi, A**. and Richmond Amponsah (2015) 'A Model for Photovoltaic Module Optimisation' Journal of Mechanical Engineering and Automation, 5(2): 72-79.
- Patrick Ohemeng Gyaase and **Takyi, A.** (2014) Public financing of broadband internet infrastructure in Ghana, options and challenges, International Journal of Technology Management & Innovation, Volume 3 - Issue 2.

- **Takyi, Augustine**, Melissa Densmore, and David Johnson (2016). "Collaborative Neighbour Monitoring in TV White Space Network." Proceedings Southern Africa Telecommunication Networks and Applications Conference (SATNAC 2016), George, South Africa. 2016.

Conferences/Workshops/Seminars

- SATNAC Conference 2016, George, South Africa. 2016.

OBED APPIAH

Research Activities/Interests

- Signal Processing
- Algorithm Development

Publication(s)

- **Appiah, Obed** (2015) Improved selection sort algorithm, International Journal of Computer Applications, Volume 110-No.5, January 2015
- **Appiah, Obed** (2015) Magnetic bubble sort algorithm, International Journal of Computer Applications, Volume 122-No21, July 2015
- **Appiah, Obed** (2015) Calculation of body mass index using image processing techniques. International Journal of Artificial Intelligence and Mechatronics, Volume 4, Issue 1, ISSN 2320-5121

CHRISTOPHER B. NINFAAKANG

Research Activities/Interests

- Big Data
- Computer Security
- Human Computer Interaction

Publication(s)

- **Ninfaakang C.B., (2015) Harnessing** Big Data Analytics for Sustainable and Renewable Energy Development in West Africa: A Critique of Some Big Data Projects, *Proceedings of Conference on Hydropower Energy in West Africa*,

University of Energy and Natural Resources, Sunyani, Ghana. 12-14 November 2015

APPIAHENE PETER

Research Activities/Interests

- Decision Support Systems
- Human Computer Interaction

Publication(s)

- **Appiahene Peter**, Boateng Frank Laud, Floyd-Hockman Anthony, Onworna-Agyeman Anthony Lord and Opoku Michael (2014)" Using Information and Communication Technology (ICT) to Predict Teachers Productivity". International Journal of Innovation and Scientific Research, Vol. 2, No.2, pp. 348-355, June.
- **Appiahene, Peter**, Opoku Michael and Alorwu D. K. Daniel (2014) Usage of Tonaton.Com by Buyers and Sellers: A Survey of Car Dealers in Kumasi Metropolis. International Journal of Computer Applications 96(14):6-10, June 2014.
- **Appiahene Peter,** Opoku Michael, Akweittey Emmanuel, Adoba Emmanuel, and Kwarteng Richard, (2014)" Assessing the Challenges of Teaching and Learning of Mathematics in Second Cycle Institutions in Ghana". International Journal of Innovation and Applied Studies, Vol. 6 No. 3, pp. 362-368,

DANIEL ADU-GYAMFI

Research Activities/Interests

- Mobility Data analysis and mining
- Spatio-temporal Trajectories
- Malicious modelling
- Privacy preservation in LBS

Publication(s)

- Nerissa E.L Anku, **Adu-Gyamfi, D**., Kankam, A. Takyi and R. Amponsah (2015) A Model for Photovoltaic Module Optimisation. Journal of Mechanical Engineering and Automation, Volume 5, Number 2

- **Adu-Gyamfi, D**., Yong Wang, Fengli Zhang, Kamenyi Domenic M., Imran Memon, Gustav Yankson H. (2014) A Model for Spreading Behavior of Passive Worms in Mobile Social Networks, Journal of Computational Information Systems 10: 7

- **Adu-Gyamfi D**., Fengli Zhang, Augustine Takyi, Nerissa Edem Anku and Nii Antie Mahmoud Addy (2015) "A Passive Attack Authentication Scheme for User Privacy-Preservation in LBS: A case in Opportunistic Mobile Networks" 2015 International Conference on Power Electronics and Energy Engineering (PEEE2015), CRC Press Proceedings, EI Compendex.

Conferences/Workshops/Seminars

- Participant: November 2, 2016." Network Protocol Security of BitTorrent" Organised by Prof. Wang Yong and the School of Computer Science and Engineering of UESTC, Chengdu, China.
- Participant: October 31, 2016. "Digital Communications" Organised by Prof. Li Xiaofend and the School of Communication and Engineering of UESTC, Chengdu, China.
- Participant: October 08, 2016. "How to write a research paper for IEEE Journals and Navigate the Review Process". Organised by Prof. George E. Ponchak, National Aeronautics and Space Administration, Glenn Research Center, Cleveland, Ohio, USA. and UESTC, Chengdu, China.
- Participant: May, 2016. "LABVIEW Training Workshop". Organised by National instruments and GTUC, Tesano Accra.
- Trainee. Feb., 2016. "Oracle Training on Java Programming". Organised by Oracle University and University of Ghana, Legon.

- Participant. 2014/2015 & 2015/2016. "Inter Schools Academic Seminar". Organised by University of Energy and Natural Resources, Sunyani.

DEPARTMENTS OF MATHEMATICS AND STATISTICS

INTRODUCTION

The Department of Mathematics and Statistics offers 4-year degree programmes leading to the award of BSc degrees in Mathematics, Statistics and Actuarial Science. The programmes aim at producing graduates capable of using mathematical tools to solve industrial, societal and environmental problems. The Department aims at collaborating with the Schools of Engineering and Natural Resources to provide sustainable solutions to the energy, environmental and natural resources challenges of Ghana.

The Department is about to start Postgraduate programmes in Mathematics and Statistics leading to the award of Master of Science (MSc), Master of Philosophy (MPhil) and Doctor of Philosophy (PhD) degrees. The durations of the Masters' programmes are two years (full time) and three years (part time) and that of the PhD programmes would be three years on full time basis and five year for part time candidates.

STUDENT STATISTICS/POPULATION

The first batch of fifty-four (54) students were matriculated and admitted into the Department in October, 2013. The second batch of hundred and thirty (130) students were admitted and brought to the Department in October, 2014. In October 2015 another batch of eighty-one (81) were admitted into the Department. A total of forty-four (44) students were admitted to the department in 2016. Currently the student population at the Departments stands at 309. The table below provides detailed information on the number of male and female students at the Department.

Level	Male	Female	Total
100	34	10	44
200	65	16	81
300	118	12	130
400	45	9	54
Total	**262**	**47**	**309**

ACTIVITIES OVER THE PAST YEAR

Apart from the three bachelor programmes offered by the Department, the Department is responsible for servicing all the Mathematics courses offered by other bachelor degrees at the University. The Department has profited immensely from the University's pragmatic staff development policy. Almost all the Assistant Lecturers who are Masters' degree holders at the Department have enrolled in PhD programmes in Ghanaian and other foreign Universities. Last year, one of our staff members completed his PhD in Statistics at the University of Development Studies, Navrongo, Ghana.

The Department partnered the Mathematical Sciences Students Association (MaSSA) to organize Mathematics quizzes for Senior High Schools in the Brong-Ahafo Region. Students of the Department also embarked on a week-long outreach programme at the following Senior High Schools (SHS) in the Brong-Ahafo Region:

- Gokati Senior High School
- Nsawkaw State Senior High School
- Nafana Senior High School

A team of five (5) students were sent to each of the above-mentioned schools. The visit was to afford our students the opportunity to share their experiences with the students at those schools. This was to help allay the fear students have for the study of Mathematics.

FUTURE PLANS

Plans are underway to start postgraduate programmes in Mathematics and Statistics. The Statistics programme has already been sent to the National Accreditation Board (NAB) for accreditation. The Mathematics programme is also ready for onward submission to the National Council for Tertiary Education and NAB. The Department is set to admit its first batch of students to weekend undergraduate programmes in Statistics, Mathematics and Actuarial Science. Furthermore, the Department, in partnership with MaSSA plans to intensify its outreach programme to Senior High and Junior High Schools to promote the study of Mathematics in the Brong-Ahafo Region.

TEACHING STAFF

There is one adjunct full Professor, seven Lecturers and four Assistant Lecturer in the Department. Their names and qualifications are given in the Table below.

Name	Qualification	Designation	Area of Specialization
Kaku Sagary Nokoe	PhD, UBC, Canada	Adjunct Professor	Biometry
Frank Badu Osei	PhD (Twente)	Lecturer	Spatial Statistics
Alex Akwasi Opoku	PhD (Groningen)	Lecturer/HoD	Mathematical Physics Probability Theory
Dominic Otoo	Ph.D, MSc, BSc (KNUST)	Lecturer	Mathematical Modeling, Operations Research
Elvis Kobina Donkoh	Ph.D, MSc, BSc (KNUST)	Lecturer	Operations Research, Telecom Systems, Fluid Dynamics

Johnson De-Graft Ankamah	M.Phil(E'dhoven)	Lecturer	Industrial and Applied Mathematics
Baaba Abassawah Ghansah	M.Phil, BSc (KNUST)	Lecturer	Mathematical Modeling of Diseases
Sylvia Ankamah	M.Phil, (UCC)	Assistant Lecturer	Statistics and Modeling
Wahab Abdul Iddrisu	M.Phil (KNUST)	Assistant Lecturer	Statistics and Modeling
Kwame Frimpong Piesie	M.Phil (KNUST)	Assistant Lecturer	Pure Mathematics
Isaac Akoto	M.Phil (Legon)	Assistant Lecturer	Actuarial Science
Richard Ansah	M.Phil (KNUST)	Assistant Lecturer	Pure Mathematics
Charles Kwofie	M.Phil. (Legon)	Assistant Lecturer	Actuarial Science
Iddrisu Abdul-Karim	MSc.(Kwazulu)	Assistant Lecturer	Medical/Biostatistics

DR. ALEX AKWASI OPOKU

Research Interests:

- Probability Theory, Stochastic Processes, Mathematical Physics.

Publication(s)

- E. Bolthausen, F. den Hollander and **A.A. Opoku** (2015) *A copolymer near a selective interface: variational characterization of the free energy.* Annals of Probability, Vol. 43, Number 2, 875-933
- **A.A. Opoku** and Frank Redig (2015) *Coupling and Hydrodynamic Limit for the Inclusion Process.* Journal of Statistical Physics, Vol. 160, Issue 3, 532-547,
- Donkoh E. K., **Opoku A. A**, Davies R. and Buabeng I. (2015),"An SEIR Model to study the Trend of Dog Rabies Without Vaccination. Case Study: Bongo District, Ghana". *International Journal of Applied Mathematical*, Vol. 30, Issue. 1, Pp. 1358- 1365,
- Donkoh E. K., Amponsah S. K., **Opoku A. A**and Buabeng, I. (2015) "Hexagonal Tessellation Model For Masting GSM Antenna: Case Study of MTN Kumasi East- Ghana". *International Journal of Applied Mathematics*, Vol. 30, Issue.1
- Donkoh E. K. and **Opoku A. A.** (2016),"Optimal Geometric Disks Covering using Tessellable Regular Polygons. *Journal of Mathematics Research,* CanadianCenter of Science and Education, Vol. 8, pp. 25- 36.
- Donkoh E. K, Amponsah S. K, and **Opoku A. A.** (2015),"Optimal Disks Overlap For Cell Planning in Telecommunication Network Design". *International Journal of Mathematical Sciences*, Vol. 35, Iss.1.
- Donkoh E. K, Amponsah S. K. and **Opoku A. A.** (2015) "Overlap Dimensions in Cyclic Tessellable Regular Polygons". *Research Journal of Mathematics and Statistics* Vol.7, Issue 2, pp. 11 – 16.

Conferences/ Seminars/Workshop

- School and Workshop on Random Polymers and Related Topics, National University of Singapore, Singapore. 14-25 May, 2012
- School and Workshop on Random Polymers, Eurandom, Eindhoven, The Netherlands. 8-18 January, 2013:
- *Workshop on Probability Theory and Disordered Systems, Nantes, France. May 24, 2013:*
- Workshop on Transformations in Statistical Mechanics, Pathologies and Remedies, Lorentz Center, University of Leiden10-14 October, 2016:

Outreach Programmes/Extension Services:

- Chairman, Security Committee, Holy Spirit School, Fiapre, Brong-Ahafo Region.
- Reviewer for Mathematical Reviews of American Mathematical Society, September 2009 to date
- Referee for Electronic Journal of Probability.
- Referee for Science and Development- the o Journal of Basic and Applied Sciences. December 2016 to date:
- Referee for Journal of Mathematics and Statistics
- Speaker at National Service Personnel Association's Capacity Building Seminar, Odumase, Sunyani, April 7, 2017:

DR. ELVIS KOBINA DONKOH

Research Activities/Interests

- Operations Research& Telecommunication System Modelling
  -Signals & Systems
  - Control Theory
  - Linear and Network Optimization
  - Non-Linear Optimization
- Fluid (Gas, Solids) Dynamics with Analysis
  - Partial Diff. Equations
  - Functional & Fourier Analysis
  - Dynamical Systems
  - Fluid Mechanics with Hydrodynamics
  - Mathematical Models in Biology

Publication(s)

- **Donkoh E. K.**, Opoku A. A, Davies R. and Buabeng I. (2015),"An SEIR Model to study the Trend of Dog Rabies Without Vaccination. Case Study: Bongo District, Ghana". *International Journal of Applied Mathematical*, Vol. 30, Issue. 1, Pp. 1358- 1365,

- **Donkoh E. K.**, Amponsah S. K., Opoku A. Aand Buabeng, I. (2015) "Hexagonal Tessellation Model For Masting GSM Antenna: Case Study of MTN Kumasi East- Ghana". *International Journal of Applied Mathematics*, Vol. 30, Issue.1

- **Donkoh E. K**. and Opoku A. A. (2016),"Optimal Geometric Disks Covering using Tessellable Regular Polygons. *Journal of Mathematics Research,* CanadianCenter of Science and Education, Vol. 8, pp. 25- 36.

- **Donkoh E. K**, Amponsah S. K, and Opoku A. A. (2015),"Optimal Disks Overlap For Cell Planning in Telecommunication Network Design". *International Journal of Mathematical Sciences*, Vol. 35, Iss.1.
- **Donkoh E. K**, Amponsah S. K. and Opoku A. A. (2015) "Overlap Dimensions in Cyclic Tessellable Regular Polygons". *Research Journal of Mathematics and Statistics* Vol.7, Issue 2, pp. 11 – 16.

- Minimum Cardinality for Geometric Disks Covering; Applications To GSM Masts In Telecommunication Network Design. (2017). ISBN: 978-3-659-82089-2, Lambert Academic Publishers. Germany,

Conferences/Workshops/Seminars

- 16th Regional College on Modelling, Simulation & Optimization, Institute of Mathematical Sciences (IMS), University of Cape Coast, Ghana, 28th April-3rd May, 2014.
- 20thAbdus Salam/ Edward Bouchet Regional. College on Functional Analysis, Differential Equations & Applications. Institute of Mathematical Sciences (IMS), University of Ghana-Legon. 30th June - 4th July, 2014.

Outreach Programmes/Extension Services

- Reviewer: Journal Of Mathematics Research, Canadian Journal of Science and Education, Toronto, ON., M3J 3H7, Canada,.

- *Reviewer: International Journal of Theoretical and Applied Mathematics, Science Publishing Group*
- Moderator: OWSD Africa Regional Conference 2013 Quiz. "Female Science Students Have Important Role(s) In Climate Change Mitigation Than Men" October 2013

SYLVIA ANKAMAH (MS.)

Research Activities/Interests:

- Climate Change and Community Health (Application of Statistics)
- Epidemiology
- General Statistics
- Operations Research

Conferences/Workshops/Seminars

- Organizer: Maiden Female Scientist Career Advancing Summit (Organization for Women in Science for the Developing World (OWSD- Ghana Chapter)) held at UENR held on the 3rd November, 2015.
- Participant: Teaching and Learning workshop in Higher Education held at KCCR, KNUST from 16th to 18th November, 2015.

Outreach Programmes/Extension Services

- Facilitators: Math is Fun Project for Primary and Junior High Schools in Sunyani Municipality, June 2015.

BAABA A. DANQUAH (MRS.)

Research Activities/Interests

- Mathematical Biology - Population Dynamics
- Disease modeling

Conferences/Workshops/Seminars

- Presenter: University of KwaZulu Natal Departmental Seminar.30th March, 2016.
- Participant: 3rd Joint UNISA-UP Workshop on Theoretical and Mathematical Epidemiology. Pretoria, 22-26 February, 2016.
- Participant: 58th Annual Congress of the South African Mathematical Society (SAMS). University of Witwatersrand, 4-6 November, 2015.
- Participant: Analysis and Differential Equations with Applications to Natural Sciences. Salt Rock, KwaZulu-Natal, 12-16 July, 2015.
- Participant: Workshop on Methods of Teaching and Assessing Students in Ghana. UENR, 2nd-6th December 2013.
- Organization of Women in Science for the developing World – 2nd Africa Regional Conference in Ghana. UENR, 15th-18th October 2013. Local Organizing Committee Member.
- Africa Rising Training course: Experimental design and data analysis for young female research scientists in Ghana. Shai Hills, Accra, 2nd-12th June 2013. Participant.

Outreach Programmes/Extension Services

- Facilitators: Math is Fun Project for Primary and Junior High Schools in Sunyani Municipality. Collaboration with GES Sunyani Regional, June 2015.
- Patron - National Union of Baptist Student- U.E.N.R Branch, December 2013.

DR. DOMINIC OTOO

Research Activities/Interests

- Mathematical Modelling
- Operations Research

Publication(s)

- Amponsah S. K., **Otoo, D.** and Sebil C. (2016). An improved ant colony Optimisation Algorithm to a real world application in solid waste collection; a case of TafoPankrono Kumasi, Ghana, International

Journal of Mathematical Trends and Technology, Vol. 29 (2) pp 96-104

- **Otoo, D.,** Amponsah S. K. and Ankamah J. D. (2016). Enhanced vehicle routing problem with time windows, a real case of solid waste collection in TafoPankrono Kumasi, Ghana. International Journal of Mathematical Trends and TechnologyVol. 29 (2) pp 87-95

- **Otoo, D.,** Amponsah S. K., Peprah A. K. and Ampofo S. D. (2015). Modeling the feed mix of poultry production, the case of Adama Musa Farms in Ghana. International Journal of Applied Mathematics, Vol. 4 (2) (2014) pp 404-410
- **Otoo, D.,** Amponsah S. K. and Todoko C. A. K. (2015). Time series Analysis of water consumption in the Hohoe municipality of the Volta region, Ghana. International Journal of Applied Mathematics Vol. 3 (4) (2014) pp 107-118
-

Outreach Programmes and Extension Services

- Chairman, Sports Management Committee
- Chairman, University Welfare Management Committee
- Member, Hostel Management Committee

MR. CHARLES KWOFIE

Research Activities/Interests

- Heavy tail distributions
- Stochastic calculus and its applications in insurance and finance
- Econometric time series models

Publication(s)

•Nyarko, E., Owusu-Ansah and C., Kwofie, C. (2015), Modelling Commuter Preferences for a Bus. *European Scientific Journal, vol. 11, pp. 420-429.*

•Kwofie, C., Owusu-Ansah and C., Boadi, C. (2015). Predicting the Probability of Loan- Default: An application Of Binary Logistic Regression. *Research Journal of Mathematics and Statistics, vol. 7(4), pp. 46-52.*

MR. RICHARD KWAME ANSAH

Research Activities/Interests

- Algebra
- Number theory

Publication(s)

- W. Obeng-Denteh, Odum Kodua-Nana, S. Owusu Ansah,R. Kwame Ansah and Alex QuashieNyamadu (2012)Modelling Students Affinity for Lecture Attendance Using Differential Equations: The Case of Students of Kwame Nkrumah University of Science and Technology in British Journal of Education, Society and Behavioural Science 2(4): 389-401, 2012.

IDDRISU ABDUL-KARIM

Research Activities/Interests

- Bayesian Statistics
- Spatial and spatio-temporal Statistics
- Biostatistics/Medical Statistics
- Longitudinal and clinical trials designs, linear mixed-effect and generalized linear models, nonlinear mixed effect models, multi-level modeling and sensitivity analyses to missing data.

Publication(s)

- **Iddrisu, Abdul-Karim** (2013), Bayesian Hierarchical Disease Modelling and Mapping of Tuberculosis, Theory of Probability, Stochastic, Mathematical Statistics, **ISBN-10:** 3659463442, LAP LAMBERT Academic Publishing.
- **Iddrisu, Abdul-Karim** and Amoako, Yaw (2016), Spatial modelling and mapping of tuberculosis using Bayesian methods, *Open Journal of Statistics,* Vol 6 (3), pp. 32.

Conferences/Workshops/Seminars

- Presenter: Annual research meeting at the Centre for Epidemiological Modeling and Analysis (SACEMA), Stellenbosch University, South Africa (11^{th}-14^{th}April, 2016).
- Short course in missing data, organized by SACEMA and London School of Hygiene and Tropical Medicine (LSHTM), UK. (15^{th}-18^{th} September, 2015):
- Annual research meeting at the Stellenbosch University, Centre for Epidemiological Modeling and Analysis (SACEMA), South Africa. (24^{th}-25^{th}March, 2015):
- Annual research meeting at the University of Stellenbosch, Centre for Epidemiological Modeling and Analysis (SACEMA), South Africa. (19^{th}-20^{th} March, 2014):

DEPARTMENT OF CHEMICAL SCIENCES

INTRODUCTION

The Department of Chemical Science offers a 4-year degree programme leading to the award of BSc degree in Chemistry. The programme aims at preparing students for future careers in the various fields in which a core understanding of the chemical processes is important. Examples include scientific disciplines such as chemistry, biochemistry, chemical engineering, petroleum engineering, medicinal chemistry, biomedical sciences, biotechnology, environmental sciences, as well as the various health-related disciplines such as medicine, dentistry, pharmacy, and veterinary medicine.

The programme has been designed to employ practical and theoretical knowledge to meet the requisite demands of research institutes, academic institutions, pharmaceutical industries, material science and technology-based industries in Ghana and beyond.

The Bachelor of Science in Chemistry has been designed in response to, and anticipates the demand for university graduates trained in chemistry to support the start-up oil and petrochemical industry, chemical, agrochemical, pharmaceutical industries, as well as the medical and herbal research institutions, and food industries. The establishment of Bachelor of Science in Chemistry will help to produce motivated, and highly educated chemists with analytical and problem-solving skills needed for the development of science and technology in Ghana, as well as produce graduates well equipped to pursue careers both in chemical sciences and more broadly in industry and the public sector as a whole.

STUDENT STATISTICS

PROGRAMME	Year/Level	Male	Female	Total
BSc Chemistry	100	14		14
	200	27	3	30
	300	38	9	47
	Total	**79**	**12**	**91**

ACTIVITIES OVER THE PAST YEAR FOR THE SCHOOL

- During the year under review, Students' Chemical Society (UENR Chapter) was inaugurated. The Society demonstrated the preparation of soap (through the process of saponification). Some of the soap was sold at the function to raise fundsfor the Society.

- Our first batch of Level 300 Students were placed in their compulsory Industrial attachment to improve their theoretical knowledge of chemistry and enhance their practical skills.

FUTURE PLANS

The Department of Chemical Science also intends to mount these new Programmes in the near future.

- BSc. Laboratory Technician
- Mphil Natural Product Chemistry
- Mphil Medicinal Chemistry

TEACHING STAFF

The following constitute the staff of the Department. The table below indicates their names and qualifications:

Name	Qualification	Designation	Area of Specialization
Dr. Robert Akuamoah	PhD(Newcastle) Msc, BSc (Ghana)	Lecturer	Organic Chemistry
Dr. Michael Lartey	PhD,(Massachusetts) MSc. (Wittenberg)	Lecturer	Organic Chemistry
Dr. David Adu-Opoku	PhD(UK) MA(UK),BSc. (KNUST)	Lecturer	Physical Chemistry
Mr. Benjamin		Assistant	Synthetic Inorganic

Darko Asamoah	MSc. (Finland)	Lecturer	Chemistry
Mr. Edward Annoh	HND	Laboratory Technician	
Mr. Augustine Boakye	BSc. (KNUST)	Laboratory Technician	

BENJAMIN DARKO ASAMOAH

Research Activities/Interest

- Organometallic Compound Synthesis
- Coordination Chemistry
- Physical Chemistry
- Material Chemistry
- Medicinal Chemistry
- Organic Synthesis

Publication(s)

- Dau, T, M., **Asamoah, B. D.,**Belyaev A., Chakkaradhari, G., Hirva, P., JanneJänis, Elena V. G., Tunik, S. P., Koshevoy, I. O. (2016). Adjustable Coordination of a Hybrid Phosphine-Phosphine Oxide Ligand in Luminescent Cu, Ag and Au Complexes. Dalton Trans. 45, 14160–14173.

Conferences/Workshops/Seminars

- Participant in 'Scientific Writing Skills' (2 - 4th July, 2014) at the University of Eastern Finland.
- Student Panel in 'University Study Skills Course (September, 2014) organized for newly admitted students of the University of Eastern Finland.

DR. DAVID ADU-OPKU
Research Activities/ Interest

- Surface Science Encompassing Studies
- Thermodynamic
- Kinetic studies.
- Synthesis of catalysts
-

Publication(s)

- **Adu-Poku, D**., and Agbenorhevi, K. J., *Kinetics of potassium diffusion as influenced by the microstructure of potato.* American Journal of Food Science and Technology; Vol. 5, No. 2, 2017, pp 31-37

Conferences/Workshops/Seminars

- Achieving Sustainable Agriculture & Food Security: The Role of Science and Technology' 6th Ghana Science Association (GSA) Research Seminar & Poster Presentation, College of Science Allotey Auditorium, KNUST, 12th April, 2017.

- 'Agri Innovation 2015: emerging Science and Technologies in Crop Research, SCI, London, 22 April, 2015

- 'Physical Principles of Lipids in Food Products and Health', SCI, Weetwood Conference centre, Leeds, UK, September 2013.

DR MICHAEL LARTEY

Research Activities and Interests

- Organic chemistry
- Polymer, Material and Supramolecular Chemistry
- Bio analytical Chemistry

Publication(s)

- Surendar, R., Venna, **Michael Lartey**, Tao Li, Alex Spore, Santosh Kumar, Hunaid B. Nulwala, David R. Luebke, Nathaniel L. Rosi, Erik Albenze.(2015) Fabrication of MMMs with improved gas separation properties using externally functionalized MOF particles. J. Mater. Chem. A, 3, 5014 – 5022.
- John D. Watkins, Elliot A. Roth, **Michael Lartey**, Erik Albenze, Mingjiang Zhong, David Luebke and Hunaid B. Nulwala.(2015) Ionic Liquid Regioisomers: Structure Effect on the thermal and physical properties. New J. Chem. 39, 1563 – 1566.

Conference/Workshop/ Seminars

- Senior Academic Leadership Training, Training for Heads of Department, University of Ghana, Legon, Accra, August 2016

Outreach Programs and Extension Services

- Staff Scientist on SATTIFS project at the Centre for Innovation and Technology Dissemination
- Member, Local Organizing Committee for International Conference on Climate Change and Sustainable Development in Africa.

DR ROBERT AKUAMOAH

Research Activities/Interests

- Natural Products
- Organic Synthesis
- Environmental & Pollution Studies

Publication(s)

- Y. Serfor-Armah, A. Chatt, D. Carboo and **R. K. Akuamoah**.(2008) "Simultaneous Cloud Point Extraction of low levels of Cd, Cr and Hg in Seaweed Species prior to Neutron Activation Analysis" Journal of Applied Science and Technology (JAST), Vol. 13, Nos. 1 & 2 , 48 – 54

- Y. Serfor-Armah, D. Carboo, **R. K. Akuamoah** and A. Chatt, (2006) "Determination of selected elements in red, brown and green seaweed species for monitoring pollution in the coastal environment of Ghana" Journal of Radioanalytical and Nuclear Chemistry, Vol. 269, No. 3, 711-718

- L. K. N. Okine, **R. K. Akuamoah**, W. S. K. Gbewonyo, K. A. Eli and E. Aidoo, (2004) "Antimicrobial activity and chemical constituent profile of neem seed oil on storage: Effects of Vitamin E and Lecithin" Journal of the Ghana Science Association, Vol. 6, Number 2, 15-29

Conferences/Workshops/Seminars

- The Sixth International Chemistry Conference in Africa, Accra, Ghana, 31 July to 4 August 1995

- First National Neem Conference (Organised by the Goethe Institut and the University of Ghana) at Dodowa near Accra, in October, 1998

- First National Agricultural Research System Workshop, Accra, Ghana, 16-20 November 1998

- 21st Biennial Conference of the Ghana Science Association (GSA) Accra, Ghana 8- 13 August 1999.

Outreach Programmes/Extension Services

- Consultancy services for Millennium Development Authority, MiDA
- Consultancy Services for Ghana Commercial Agriculture Project
- Chief Examiner (Chemistry) West African Examinations Council



SCHOOL OF AGRICULTURE AND TECHNOLOGY (SOAT)

INTRODUCTION

The School of Agriculture and Technology was established in the 2014/2015 academic year at the Dormaa Ahenkro. The School of Agriculture and Technology of the University seeks to bring a paradigm shift in teaching, research and outreach in agriculture to promote performance, modernization, efficiency and competitiveness of the agricultural sector.

The strategy is to bring science, technology, economics and human values to the social, economic and technical processes involved in the production and transformation of raw materials originating through agriculture, livestock and forestry to adapt them for consumption and the markets. To feed the nation and promote the inherent strengths of agriculture in a national economy requires more efficient operating systems, new technologies, and increased levels of partnership to meet household, national and global food security.

The School of Agriculture and Technology seeks to contribute to this through its academic and research programmes. Areas of specializations in our Bachelor of Science in agriculture programme are as follows:

- Agribusiness
- Animal production
- Crop production and
- Horticulture

The programmes provide graduates with a working knowledge of a broad span of agriculture and introduce them to the critical relationships between agricultural activities and the environment. The programmes also seeks to assist students in developing the core skills in job creation and employment-related experiences that are valued by employers, professional organizations and academic institutions.

DEPARTMENTS

Currently, the School has the following Departments:

- Department of Animal Production and Health
- Department of Agricultural Economics, Agribusiness and Extension
- Department of Horticulture and Crop Production

The proposed School of Geosciences, is currently runing under the School of Agriculture as a Department.

STUDENTS STATISTICS/POPULATION IN THE SCHOOL OF AGRICULTURE AND TECHNOLOGY

YEAR/LEVEL	MALE	FEMALE	TOTAL
LEVEL 100	24	2	26
LEVEL 200	24	-	24
LEVEL 300	28	3	31
TOP-UP			
LEVEL 200	10	3	13
LEVEL 300	36	5	41

TOTAL	**122**	**13**	**135**

ACTIVITIES OF SOAT OVER THE PAST YEAR

Model Farm

University Farm: The School has established a model farm to be used for training of students and farmers within and outside the Dormaa Ahenkro Traditional Area. The farm is also envisaged to serve as the demonstration farm for the planting for food and jobs program initiated by the current Government of Ghana. The about twenty acre maize Demonstration/Model farm also includes, about two acres of land, currently being used for the cultivation of green pepper, cabbage, carrots and lettuce.

The School of Agriculture and Technology (SOAT) through the Demonstration Farm seeks to bring practical realities into modern agricultural teaching, research and outreach in order to promote performance, modernization, efficiency and competitiveness of the agricultural sector thereby increasing food security in Ghana. The strategy is to combine science, technology, business, economics and human values as an integrated tool for improving farming processes to meet market and consumption needs. The model farm will focus on the following:

1. Begin with the cultivation of perennial crops e.g. cocoa, citrus, cashew and oil palm. At this stage also, effort will be devoted to seeds and seedling production for market.
2. Begin the production of poultry farm which focuses on egg production and establishment of Feed mill will be done.
3. The model farm will be expanded to include longer term capital intensive production activities such a pigs, grasscutter, small ruminants, foreign security dogs for sale, slaughter house and meat processing and Agriculture Technology and Dissemination Centre will also be established.

The model farm will be self-sustaining. A five (5) member Farm Management Committee will be drawn from the School and private entrepreneurs will be

appointed and mandated to ensure that the rational and core objectives of the farm concept are achieved in terms of both environmental and economic sustainability.

The School has also won Alexander von Humboldt Foundation, award from Germany within the Research Group Linkage Programme, Research cooperation with the Humboldt-Universitätzu Berlin with funding in the amount of **54,990 EUR**), starting August 2017-2020. Part of the funding will be used for the construction of a functional beneficial insect rearing laboratory at the School of Agriculture and Technology, Dormaa Ahenkro Campus of the University of Energy and Natural Resources, Ghana. The building will be used as a preservation capacity and serve as database of beneficial insects of stored product pests in the different agro-ecological zones of Ghana where grains are produced and stored.

Top-Up programme

The School started a Degree Top-Up programme for Diploma students in the 2015/2016 academic year to enable them fulfil their academic ambitions of obtaining the B.Sc. in Agriculture degree. The students admitted are workers and professionals in nature.

FUTURE PLANS

The School intends to rear small ruminant including pigs, cows, goats, poultry and foreign security dogs very soon. The school intends to expand its current 20 acre maize farm and two acres vegetable production at the School's demonstration farms to a substantial size.

DEPARTMENT OF ANIMAL PRODUCTION AND HEALTH

Introduction

The Department of Animal Production and Health was established as one of the Agriculture majors' options in the 2014/2015 academic year. The aim was to educate students in becoming well-trained, skilled and critical thinking professionals who are able to work in multidisciplinary teams all over the world.

The Department offers a 4-year Bachelor of Science undergraduate degree in Animal Production and Health. The programmes have been designed to produce competent professionals who are versatile with the needed knowledge and skill to provide crucial solutions to the ever evolving and expanding livestock industry in Ghana, Africa and the world.

- The Department's current areas of specialization are within (1) Animal nutritional science (2) Genetics and Breeding (3) Animal Health and (4) Animal biotechnology

ACTIVITIES OVER THE PAST YEAR

- The pioneers of the BSc. Animal Production and Health programme are currently in level 300 with the next batch of students at level 200 and level 100 respectively.
- There are plans of signing MoUs with livestock farms within the Schools' catchment area for accelerated, innovation, generation and dissemination of knowledge as a win-win situation between the department and industry practitioners.

FUTURE PLANS

- The Department in the near future intends to mount short courses (certificate and Diploma) which are intended to be practical and interactive in scope.
- Additionally it is the target of the Department in the not too distant future to mount post graduate programmes

DEPARTMENT OF AGRIC. ECONOMICS, AGRIBUSINESS AND EXTENSION

The Department of Agricultural Economics, Agribusiness and Extension currently offers a 4-year programme and top-up programmes leading to the award of BSc degree in Agribusiness. The B.Sc. Agribusiness is meant for individuals seeking managerial-level careers in agribusiness and allied sectors. The programme seeks to equip students with better understanding of the industrial and business world and its needs by providing them with competencies relevant to their careers. The programme seek to equip students to be able to use fundamental knowledge and skills gained practically to solve the nation's problems pertaining to the management of agribusinesses and allied sectors.

ACTIVITIES OVER THE PAST YEAR

During the period under review, the Department undertook the following activities:

- Consultancy works for Agricultural Development and Value Chain Enhancement (ADVANCE) and Agribusiness Systems International
- Lecturers undertook short courses on monitoring and evaluation of Food security programmes at the Wageningen Centre for Development Innovation from June to July 2017 in Wageningen, Netherlands.
- During the period under review, the Department undertook a collaborative Research with scientists from University of Applied Forest Sciences Rottenburg on Value Chain analysis of Cashew nuts in Ghana.
- Revision of the B.Sc. Agribusiness Programme to meet industrial needs.
- Developed a new programme in Master of Agribusiness Management with specialisation in Agribusiness Management and Marketing, Monitoring and Evaluation and Rural Financing and Banking.
- Developed Diploma in Agriculture with specialisation in Agribusiness Management

FUTURE PLANS

- Maiden Departmental Biannual Newsletter titled '*The Agripreneur*' will be launched by next academic year.
- The Department will develop a course in B.Sc. Agricultural Economics and Extension.
- International Exchange Programme between students of the Department and Universities in Africa, Europe, America and Asia.
- Finally the Department is to create a centre for bridging the gap between academic and industry (Practical Mentorship) which will be called Centre for Agribusiness Consultancy and Micro-Enterprise Research (CACMER).

DEPARTMENT OF HORTICULTURE AND CROP PRODUCTION

The Department of Horticulture and Crop Production was established in 2013/2014 academic year with the aim of offering agricultural education to students for future career as professional crop scientist or agronomist.

The Department offers a 4 year Bachelor of Science undergraduate degree in Agriculture, with coverage on a curriculum that will promote the versatility of our graduates in the production, protection and processing of crops with excellent skills in scientific applications for the market and graduate studies programmes locally and globally.

FUTURE PLANS

The Department of Horticulture and Crop Production has recently developed a Diploma in Agricultural Sciences and MSc/MPhil/PhD. in Crop Science with the following specialization in Agronomy, Plant Pathology, Crop Physiology, Postharvest Technology and Crop Protection.

The duration of the proposed and diploma and postgraduate programs will be two years (full time). This, the Department plan to establish its first biocontrol laboratory for rearing natural enemies for biological control of insect pests in agriculture and intend to use selected insect as food for human and animals in Ghana. The Department has an MoU with the CSIR, CRIG, COCOBOD,

University of Poland, Humboldt University of Berlin, Berlin, Germany, Biological Control Ltd., Berlin Germany.

The Department is also collaborating with partner Universities across Germany and Africa on the African European collaborative research on Sustainable Agriculture and Aquaculture and on Food and Nutrition Security between UENR, Humboldt Universitätzu Berlin, Germany and other institution in Kenya, The total finances available for this collaborative research amounts to € 27 000 000.

The Department plans to also establish African Research Center of Excellence for Innovative Technology and Development (ARCEITD) The main goal the planned African Research Center of Excellence for Innovative Technology and Development (ARCEITD) will serve as a center for implementing current new ideas and bringing them to agriculture to ensure food security for the increasing population of Africa especially Ghana.

TEACHING STAFF

The details of the teaching staff are indicated in the Table below:

Name	Qualification	Designation	Area of Specialization
Dr. Charles Adarkwah	PhD, MSc. (Humboldt), BSc. (UCC)	Senior Lecturer/ Ag. Dean	Crop Science/Postharvest Entomology
Dr. Richard KwasiBannor	PhD (SKRAU), MAA(UG); BSc. UCC	Lecturer, (Ag. HoD DAEAE)	Agribusiness and Marketing
Dr. Samuel Asomaning	PhD (UG); MPhil (UG); BSc (UG)	Lecturer	Soil fertility management and Plant nutrition
Dr. Leslie Danquah	PhD, MA, BA (KNUST)	Lecturer	Biometeorology of Child and Env'tall Health

Helena Oppong-Kyeremeh	MPhil (KNUST), BSc. (UCC)	Assistant Lecturer	Agricultural Economics
Mr. Ernest DarkwahYeboah	MA (JAU) China, BSc. (UG)	Assistant Lecturer	Animal Nutrition & Feed Science
Mr. Caleb Mensah	Mphil (KNUST), BSc. (KNUST)	Assistant Lecturer	Meteorology and Climatology
Kamila J. Kabo-bah	MSc (Nicolaus Copernicus)	Lecturer	Remote sensing, Cartography and GIS,
Mr. Anthony Donkor	MSc. (KNUST), BSc. KNUST	Adjunct Lecturer	Mathematics
Mr. Benfield Osei	MSc. (KNUST), BSc (UDS)	Assistant Lecturer (Part-Time)	Agriculture and Environmental Science

DR. CHARLES ADARKWAH

Research Activities/Interests

Research interests are in integrated pest management and biological control of arthropod pests. Specifically my research interests are centered on investigating the biology, behaviour, and population dynamics of stored-product arthropod pests and their natural enemies and to use the information acquired to optimize pest management strategies.

- Morphological and molecular identification of storage pests and their beneficial antagonists by the use of PCR.

- Insecticidal effects of the powdery formulation based pawpaw seeds for the management of the cosmopolitan army worm in maize production in the Brong Ahafo Region
- The genetic population structures of bruchine bean beetles and their parasitoids from Ghana
- Establishment of photodynamic and photosensitization control strategies of malaria vector for improvement of health security systems in Ghana.
- Predator-parasitoid-host interaction: Biological control of *Sitophilus oryzae* and *Rhyzoperthadominica* by the combined action of *Xylocorisflavipes* and *Theocolaxelegans* in stored wheat and rice
- Establishment of a rearing facility for beneficial insects for stored product pest management to improve food security in the Dormaa-Ahenkro Municipality of Ghana

Publication(s)

- **Adarkwah, C**., Obeng-Ofori, D., Ulrichs C., Schöller, M. (2017): Insecticidal efficacy of botanical food by-products against selected stored grain beetles by the combined action with modified diatomaceous earth , Journal of Plant Diseases and Protection, 124:255-267, doi 10.1007/s41348-016-0068-2

- **Adarkwah, C.,** Nyarko, G., Opoku, N. Badii, BK., Addai IK., Prozell, S., Ulrichs C., Schöller, M. (2016): Effectiveness of the egg parasitoid*Trichogrammaevanescens* preventing rice moth from infesting stored bagged commodities. Journal of Stored Products Research, 61, 102–107.

- Obeng-Ofori D., **Adarkwah C.,**Ulrichs C. (2016): Chemical, physical and organic hermetic storage technology for stored-product protection in African countries. Bulletin of the International Organization for Biological Control, 111: 3-27.

- Yeboah Darkwah E., Zhen Yu-G and **Adarkwah C**. (2017): The Immuno-Nutritional Effects of Dietary Astragalus Polysaccharides on Weaned Pigs under Smallholder Conditions, "Future Agriculture: Social-ecological transitions and bio-cultural shifts" Tropentag, Bonn, Germany.

- **Adarkwah C**., Darkwah Y. E; Aomaning K.S., Obeng-Ofori D. (2017): Climate change implications on biological control and hermetic storage technology for grain protection to improve food security in Ghana, Proceedings of the International Conference on Climate Change and Sustainable Development in Africa, 25-28thJuly, 2017 at University of Energy and Natural Resources, Sunyani.

- **Adarkwah C.,** Obeng-Ofori D., UlrichsC., Schöller M. (2017): Climate Smart and its effects on stored food grains in Ghana. Proceedings of the International Conference on Climate Change and Sustainable Development in Africa, 25-28thJuly, 2017 at University of Energy and Natural Resources, Sunyani.

Conferences/Workshops/Seminars:

- Facilitator at a stakeholder symposium on Research-practitioner on climate change adaptation of agrarian communities in the transitional zone organized by the Centre for Climate Change and Gender Studies (3CGS) as part of the CIRCLE research uptake project, UENR-Sunyani, 27th February 2017.
- Participant in the International DAAD Alumni Seminar with the theme "Smart and Adapted Technologies in Agriculture for Productive and Sustainable Land Use Systems in Developing Countries" scheduled to take place on November 6th - 13th, 2017 at Witzenhausen, Germany

Outreach Programmes/Extension Services

- Leader/Founder: UENR-IAESTE (UENR-International Association of Exchange of Students for Technical Experience), sponsored by German Academic Exchange Service – DAAD-October, 2016.
- Investigator: Research and education on the establishment of a rearing facility for beneficial insects for stored product pest management to improve food security in Ghana (sponsored by the Alexander von Humboldt Foundation, Germany within the Research Group Linkage Programme, Research cooperation between University of Energy and Natural Resources and Humboldt-Universitätzu Berlin, approved for funding in the amount of 54,990 EUR), 2016-2019
- Consultancy Services training on biological entomology to theSalesians of Don Bosco Anglophone West Africa Province project, Odumase in

BrongAhafo Region (EU sponsored Project), Don Bosco Technical Institute, Odumase, 17th , 18th , 24th, 25th , March 2017.

- German Academic Exchange Service (DAAD) Research Fellowship Scholar programme, Research Stays for University Academics and Scientists, 15/09/15- 14/11/15, Institution, Humboldt-Universität Berlin, Germany.
- Leader in preparation of proposal for LEAP AGRI-Call 2017 on African European collaborative research on Sustainable Agriculture and Aquaculture and on Food and Nutrition Security between UENR, Humboldt Universitätzu Berlin, Germany and Kenya, The total finances available for this call for proposals amount to € 27 000 000
- European Molecular Biology Organization (EMBO) Short-Term Research Fellowship programme award, 1st June to 31st August 2016, hostInstitution, Humboldt-Universität Berlin, Germany.
- Guest Speaker of the 19th Graduation Ceremony of Don Bosco Technical Institute on Friday, 25th November, 2016 at Odumasi
- Reviewer: International journal of pest management, Journal of Biocontrol and technology, Journal of Botanicals and Essential oils, Journal of Stored Products Research.

Dr. RICHARD KWASI BANNOR

Research Activity / Interests

- Value chain analysis
- Price analysis and forecasting,
- International and domestic commodity marketing
- Food security
- Women empowerment
- Poverty, rural development and sustainable development issues

Publication(s)

- **Bannor, R.K.** and Oppong-Kyeremeh, H. and Addo-Adjei, E. (2017). Improving the income of small scale rice producers through outgrower

scheme in the Volta Region of Ghana. *Indian Journal of Economics and Development,* 13(2a), 584-590.

- **Bannor, R.K.** and Madhu, S. (2017). Determinants of the choice of marketing outlet among kinnow farmers in Rajasthan.*Indian Journal of Economics and Development, 13(1), 11-22.*

- **Bannor, R.K.** and Sharma, M. (2016). Modelling and forecasting wholesale groundnut prices in Bikaner district of Rajasthan for marketing intelligence. *Applied Research Journal* 1(4), 1-20.

- **Bannor, R.K.** (2016).Effect of futures trading on the volatility of cluster beans prices in Rajasthan. *Indian Journal of Economics and Development,* 12(3), 421- 430.

- **Bannor, R.K**., Sharma, M. and Dhaka, S. (2016). Integration of cumin markets in Rajasthan. *International Journal of Agriculture Sciences,* 8(52), 2516-2520.

- **Bannor, R.K.** and Melkamu, M. (2016) ARFIMA, ARIMA and ECM Models forecasting of wholesale price of mustard in Sri Ganganagar District of Rajasthan of India. *Journal of Business Management and Social Science Research,* 5(1), 1-13.

- **Bannor, R.K.** and Mathur, S. (2016).Integration of mustard markets in Rajasthan State of India**.** *Agricultural Research Journal,* 53(4), 571-579.

- **Bannor, R.K**., Sharma, R., and Madhu, S. (2015). Long memory analysis for marketing intelligence; the case of coriander seed prices in Kota District of Rajasthan. *Indian Journal of Agricultural Marketing*, 29(2), 184.

- **Bannor, R. K.** (2015). Long run and short run causality of rice consumption by urbanization and income growth in Ghana. *ACADEMICIA*, 5(2), 173-189.

- Takyi-Mensah, R. and **Bannor, R.K.** (2015). Determinants of demand of locally processed poultry meat in Greater Accra Region of Ghana. *International Research Journal of Marketing and Economics,* 2(2), 1-17.

Conferences/Workshops/Seminar

- Presenter: Off Farm Job as Climate Change Adaptation Strategy for Small Scale Rice Producers in the Volta Region of Ghana. In 1st International Conference on Climate Change and Sustainable Development: Strengthening Africa's Adaptive Capacity (held on July 25-28, 2017), University of Energy and Natural Resources, Sunyani-Ghana.

- Participant: Monitoring, evaluation and impact assessment of food and nutrition security programmes, at the Wageningen Centre for Development Innovation. 05/06/2017 - 23/06/2017, Wageningen, Netherlands.

- Participant: 4th National Conference on Doubling Indian Farmers' Income by 2022 : Opportunities and Challenges by Society of Economics and Development (held on April 7, 2017), Punjab Agricultural University, Ludhiana- India.

- Participant: Ghana Poultry Project Benchmarking Seminar on Competitiveness in the Ghanaian Poultry Industry- 01-03/02/17, Accra-Ghana.

- Participant: Agriculture Development and Value Chain Enhancement (ADVANCE) Project 6th Annual Pre-harvest Agribusiness Event- 20/10/16, Sunyani-Ghana.

- Participant: 29th National Conference on Agriculture Marketing by Indian Society of Agricultural Marketing (held on October 28-30, 2015), Rajasthan College of Agriculture, MPUAT, Udaipur-313001, Rajasthan-India.

Outreach Programmes and Extension Services

- Editorial Board Member: Indian Journal of Economics and Development published by Society of Economics and Development, Punjab-India.

- Reviewer: BIONFO Business Economics Journal/ International Journal of Agriculture Sciences published by BIONFO Publications.

- Reviewer: Food Security: The Science, Sociology and Economics of Food Production and Access to Food published by Springer.

- Lead Consultant: Development of five case studies report on Ghana Commercialisation of Rice Project (GCORP) for Alliance for Green Revolution (AGRA) through Agribusiness Systems International (ASI) – January to February, 2016

- Lead Consultant: End of Ghana Commercialisation of Rice Project (GCORP) Survey for Agribusiness Systems International (ASI) – April to June, 2016

- Supervisor: Postgraduate and Undergraduate students at Zenith University College, Accra, 08/16- Date.

- Team Member: "Tree Farm Project" run by UENR, RUDEYA and University of Amsterdam.

- Speaker: UENR Festival of Science, 08/02/2017.

- Admissions Outreach to Senior High Schools in BrongAhafo Regions on UENR programmes.

- Coordinator for B.Sc. Agriculture and B.Sc. Agribusiness Top-Up Programme of the School of Agriculture and Technology, University of Energy and Natural Resources(UENR), 10/16- Date

- Postgraduate Coordinator for Department of Agricultural Economics, Agribusiness and Extension, UENR- 10/16- Date

- UENR Academic Board Member, 10/16- Date

- School of Agriculture Technology Board Member, UENR, 08/16- Date

- School of Graduate Studies Board Member- UENR, 09/16- Date

- Undergraduate Admissions Committee Member, UENR, 10/16- Date

- Academic Planning Committee Member, UENR, 03/17- Date

Dr. SAMUEL KWESI ASOMANING

Research Activity / Interests

- Soil fertility management and plant nutrition with respect to Phosphorus availability.
- Soil phosphorus sorption studies.
- Ground water quality assessment.

Publication(s)

- **Asomaning S.K.**, M.K Abekoe and E. Owusu-Bennoah (2006). *Phosphate rock dissolution and availability in some soils of semi-deciduous rainforest zone of Ghana*. West African Journal of Applied Ecology, 10: 209-220.
- **S. K. Asomaning**, M. K. Abekoe, G. N. N. Dowuona, O. K. Borggard, J. A. Kristensen and H. Breuning-Madsen. 2015. *Sustainable long-term intensive application of manure to sandy soils without phosphorus leaching: a case study from Ghana. Soil and Plant Science*, DOI: 10.1080/09064710.2015.1058413

Conferences/Workshops/Seminar

- Participant; Sustainable food production through irrigated intensive farming systems in
  West Africa. At the University of Ghana, Legon.

- Participant; The harmattan dust: Any Agricultural or environmental impact on soils and Watercourses in Ghana? At the University of Ghana, Legon.

- Participant; 16th Annual General Meeting of Soil Science Society of Ghana. Managing soils for sustainable production of food, cash and Industrial crops At Cocoa Research Institute of Ghana (CRIG), New Tafo.

Outreach programmes / Extension Services

- Admissions Outreach to Senior High Schools in BrongAhafo Region on UENR programmes. for 2017/2018
- Coordinator for Students Industrial Attachment of the School of Agriculture and Technology, and for the Department of Horticulture and Crop Production. University of Energy and Natural Resources(UENR),
- UENR Academic Board Member
- School of Agriculture and Technology Board Member, UENR,

DR. LESLIE DANQUAH

Research Activities/Interests

- Biometeorology of child health
- Child environmental health
- Domestic water use
- Domestic water quality assessment and monitoring

Publication(s)

- **Danquah, L.**, Awuah, E., Agyemang, S. & Mensah, C.M. (2015). Investigating the Predictors of Domestic Water Consumption in Urban Households with Children Under-Five Years: A Panel Study in the AtwimaNwabiagya District, Ghana. Journal of Sustainable development. Vol 8(8). 1 – 17.

Conferences/Workshops/Seminars

- Participant: Climate Impact Research Leadership and Capacity Enhancement (CIRCLE)'s Researcher-Practitioner symposium. *'Sharing and co-creation of knowledge on climate change adaptation among agrarian communities in the Transitional and Savannah vegetation zones of Ghana.' 22nd February, 2017.*

- Participant: 2nd academic and professional career development seminar. **'***Developing Your Purpose Road Map*'. Center for Climate Change and Gender Studies. 3rd October 2016.

Ms HELENA OPPONG-KYEREMEH

Research Activity / Interests

- Value Chain Analysis
- Marketing of Agricultural Produce
- Food Security
- Women Empowerment
- Poverty Research
- Rural Development and Sustainable Development Issues
- Climate Change

Publication(s)

- Bannor, R.K.and **Oppong-Kyeremeh, H.** and Addo-Adjei, E. (2017). Improving the income of small scale rice producers through outgrower scheme in the Volta Region of Ghana.*Indian Journal of Economics and Development,* 13(2a), 584-590.

Conferences/Workshops/Seminar

- Presenter: Off Farm Job as Climate Change Adaptation Strategy for Small Scale Rice Producers in the Volta Region of Ghana. In 1st International Conference on Climate Change and Sustainable Development: Strengthening Africa's Adaptive Capacity (held on July 25-28, 2017), University of Energy and Natural Resources, Sunyani-Ghana.

- Participant: Monitoring, evaluation and impact assessment of food and nutrition security programmes, at the Wageningen Centre for Development Innovation. 05/06/2017 - 23/06/2017, Wageningen, Netherlands.

- Participant: 4th National Conference on Doubling Indian Farmers' Income by 2022: Opportunities and Challenges by Society of Economics and Development, April 7, 2017, Punjab Agricultural University, Ludhiana-India.

- Participant: AWARD Leadership Program for Agricultural Research and Development (LEPARD) Course, 27th-31st March, 2017, Accra, Ghana.

- Participant: Ghana Poultry Project's Training Programme for Poultry Producers, MoFA Technical Staff and Other Stakeholders in Ghana, 21st November, 2016, Sunyani, Ghana

- Agriculture Development and Value Chain Enhancement (ADVANCE) Project 6th Annual Pre-harvest Agribusiness Event, 20th October, 2016, Sunyani-Ghana

- Participant: Maiden Female Scientist Career Advancing Summit. Organization for Women in Science for Developing World (OWSD), (Brong-Ahafo Regional Chapter), UENR, October, 2015, Sunyani, Ghana.

- Participant: Strengthening Innovations and Technology Dissemination for Sustainable Development in Cereals, Cocoa and Coffee Value Chains in Western and Eastern Africa (SATTIFS), 29th September, 2015. Centre for Innovation and Technology Dissemination, UENR –Sunyani, Ghana.

Outreach Programmes and Extension Services

- Speaker UENR Festival of Science, 08/02/2017.

- School of Agriculture Top-Up programme Cordinator.

- Senior High Schools in Brong Ahafo Regions on UENR programmes.

- Agriculture Development and Value Chain Enhancement (ADVANCE) Project 6th Annual Pre-harvest Agribusiness Event- 20/10/16, Sunyani-Ghana.

- Industrial Attachment Coordinator for Department of Agricultural Economics, Agribusiness and Extension, UENR- 10/16- Date.

MR. ERNEST DARKWAH YEBOAH

Research Activity / Interests

- Monogastric Nutrition
- Ruminant Nutrition
- Nutritional Physiology of Monogastric farm animals
- Feed Science Technology
- Assessment of the use of Asaha leaves for the feeding of farm animals in Dormaa municipality.

Publication(s)

- Lei, L., Xiao-gang, F., Ying, L., **Yeboah, E.D**., Hong-yang, D., Jin-ping, M., Wei-min. L. and Shu-bao, Y. (2014). Study on location and Distribution of Several Immunocytes in Crop of Chicken. *ActaVeterinariaetZootechnicaSinica,*45(1), 136-141.

Conferences/Workshops/Seminar

- Participant: Ghana Poultry Project's Training Programme for Poultry Producers, MoFA Technical Staff and Other Stakeholders in Ghana, 21st November, 2016, Sunyani, Ghana

- Participant: Ghana Poultry Project Benchmarking Seminar on Competitiveness in the Ghanaian Poultry Industry, 1st to 3rd February 2017, Accra-Ghana.

- Participant- 19th Ghana Society of Animal Production (GSAP), Biennial Conference, Climate change and Livestock Development, University of Cape Coast, 5th to 8th August 2015.

- Enumerator: Training of enumerators workshop on the revised and harmonized characterization, inventory and monitoring of Animal genetic resources tools' guidelines, Naivasha, Kenya, 4th to 7th November, 2015.

- Participant: 3rd International Symposium on Dairy and Meat Science, Beijing, 2013.

Outreach Programmes and Extension Services

- School's Examinations Officer: –15th November 2016 –Date

- Board Member: School of Agriculture Technology, UENR, August 16- Date

- Coordinator: Industrial attachment, Department of Animal Production and Health,

- Data Manager: piloting of the revised characterisation, inventory and monitoring tools in Ghana. AU-IBAR Project. 25th April – 25th May, 2015

- Member: Ghana-Iranian bilateral agreement committee (2015)

- Member: Joint Ministry of Food and Agriculture and Ministry of Tourism, Culture and Creative Arts (MoFA-MoTCCA) committee on broiler revitalization project (2015).

MR.CALEB MENSAH

Research Activities/Interests

- Tropical Meteorology/Climatology

- Numerical Modeling and Extreme weather conditions forecasting

- Analysis of Eddy covariance and meteorological data from a Carbon Monitoring Tower to be mounted at Bia Tano Forest Reserve at Mim. Collaboration between the Czech Globe and EORIC-UENR (August 2017-2021)

- COSMIC- 2 Numerical Weather Forecasting Project. Collaboration with National Oceanic Atmospheric Administration (NOAA) and the National Space Program Organization (NSPO) of Taiwan and EORIC-UENR (June 2016-)

- Research Assistant: Enhancing Resilience to Climate and Ecosystem Change in Semi-Arid Africa: An integrated Approach: CECAR Africa Project on Numerical Weather Prediction using the Weather Research and Forecasting (WRF) Model, by JICA and the Ghana Meteorological Agency, Accra, Ghana (September 2015- July 2016)

Publication(s)

- **Mensah, C.**, Amekudzi, L.K., Klutse, N.A.B., Aryee, J.N.A., Asare, K. Comparison of Rainy Season Onset, Cessation and Duration for Ghana from RegCM4 and GMet Datasets. Atmospheric and Climate Sciences, 2016, 6, 300-309; Scientific Research Publishing.

Conferences/Workshops/Seminars

- LOC Member: AfriGEOSS Symposium at Tyco City Hotel, EORIC-UENR (13th - 15th June, 2017)

- Facilitator: Seminar on Climate Data Management and Modeling Tools at UENR (22nd- 24th March, 2017)

- Facilitator: Flood and Drought Modeling Using Earth Observation, UENR-EORIC, 22nd- 24th August, 2016

- Facilitator: Climate Change with Space Science, UENR- EORIC (15th - 17th August, 2016)

- Participant: Launch of the Ghana Meteorological Agency's new Climate datasets and Climate Information Products at Legon, Accra (19th December, 2016).

- Participant: Launching of Accra Flash flooding App at NADMO Headquarters, Accra (8th September, 2016).

- Participant: MESA Continental Training: PUMA 2015 Application (Use of the PUMA Meteorological System at the Institute of Meteorological Training and Research (IMTR), Nairobi, Kenya (16th-20th May, 2016)

- Participant and Presenter: Training on Operational Use of Weather Prediction (Data Assimiliation in WRF Modeling System (WRFDA) at the Kyoto University, Kyoto, Japan (15th Jan- 14th Feb, 2016)

- Participant and Presenter: Severe Weather Forecasting Demonstration Project (SWFDP) on Services of Alert and Extreme Weather Conditions forecast in West Africa and Central Africa at Dakar, Senegal (2nd - 6th November, 2015)

- Participant and Presenter: Risk Assessment, early Warning Systems and Disaster Database Management for Ghana, UNDP project in Community Resilience Through early warning System, Koforidua, Ghana (12th - 16th October, 2015)

- Participant: Marine Meteorology and Physical Oceanography at the IMTR, Nairobi, Kenya (March to June, 2015)

Outreach Programmes/Extension Services

- Coordinating team member for the Maiden UENR Science Festival, UENR, Sunyani (8th-11th February, 2017)

- Developing of one Diploma in Geo-Information Science, two BSc. programmes in Planning and Sustainability, Climate Change and Sustainable Development, with other two postgraduate programmes in Climate Science and Environmental Planning and Development respectively for the School of Geosciences, Dormaa Campus.

- Assisting with EORIC's radio interview sessions and preparation of daily weather forecast from the centre on Grena FM.

- UENR Representative, 2nd Ghana-South Africa Bilateral Symposia at the MJ Grand Hotel, Accra with Dr. Amos T. Kabo-bah and Dr. Mark AmoBoateng (20th -21st September, 2016 and 29th- 30th September, 2016)

- Visit to the Volta River Authority to present on EORIC- UENR for possible partnership on the Advanced Fire Information System with Dr. Amos Kabobah- Head of EORIC. (21st - 22nd July, 2016)

- Visit to the Ministry of Food and Agriculture, Accra, Ghana Roads and Highways Authority, and the Energy Commission of Ghana with Dr. Amos Kabobah- Head of EORIC. (21st - 22nd July, 2016)

MRS. KAMILA J. KABO-BAH

Research Activities/Interests

- spatial planning, cartography, remote sensing, photointerpretation, GIS, anthropological geomorphology, mathematical modelling in geography;

- statistical modeling, fuzzy logic, theory of dynamical systems, theory of fractal geometry, theory of chaos

Publication(s)

- Donkoh, E., **Kabo-Bah, K.**, & Asiedu, S. (2014). The trend of dog rabies with vaccination using seir model case study: Bolgatanga district, Ghana. *International Journal of Applied Mathematical Research*, *3*(4), 380-389.

- CaiLingyan, Tang Guo'an, XiongLiyang, Lis, **Kabo-Bah Kamila. J**., Xie Ting, & Li Yaping. (2014). DEM - based Study on Fractal Features of Typical Topography in Loess Plateau of Northern Shaanxi Province. Soil and Water Conservation Bulletin, 34 (003), 141-144.

- CAI, L. Y., TANG, G. A., XIONG, L. Y**., Kabo-Bah Kamila, J**. Lis, XIE, T., & Li, Y. P. (2014). An Analysis on Fractal Characeeristics of Typical Landform Patterns in Northern Shaanxi Loess Plateau Based on DEM. *Bulletin of Soil and Water Conservation*, *3*, 027.

Conferences/Workshops/Seminars

- Participant: Airborne remote sensing for monitoring essential biodiversity variables in forest ecosystems; Bavarian Forest National Park (2017).
- Participant: NOAA Satellite Conference 2017, New York City.
- Participant: Launching of Accra Flash flooding App at NADMO Headquarters, Accra (8th September, 2016).

Outreach Programmes/Extension Services

- Science Festival Lead Coordinator
- Project manager of Museum of Geology at UENR.
- Member of LOC for AfriGEOSS Symposium 2017, Sunyani, Ghana
- Member of Preparation Team of SEACRIFOG Stakeholder Consultation Workshop, 16th June 2017, Sunyani - jointly with Czech Globe.
- Member, Scientific Committee for Cosmic 2 / FORMOSAT-7 Ground Station in Ghana and GNSS Receiver for UENR – Coordination process of locating GNSS Receiver.
- Member, Scientific Committee, Establishment of Carbon Monitoring Flux Tower Jointly with Czech Globe.



SCHOOL OF GRADUATE STUDIES

INTRODUCTION

The University Council at its 10th Regular Meeting held on 6th December, 2013 approved the establishment of the School of Graduate Studies (SGS). The approval was in respect of the University's Act 830, subsections 2(1) f, g, h, and i which requires that that University of Energy and Natural Resources (UENR)shall undertake research in areas within its mandate of providing sound higher education and research skills, disseminating research results through publications in journals, books and other outlet, and providing extension and consultancy services to impact positively on the society. The school consequently began operation in 2014.

The Graduate School places emphasis on interdisciplinary teaching and research, incorporates sufficient flexibility for its students to have diverse course options, allows for internationalisation and intercultural learning are consistent with our diverse natural resources and mandate of UENR. With several schools in the applied sciences, UENR, by its location, shall make higher post-graduate education

readily accessible to a large body of personnel that must have further qualification in view of the elevation of several institutions in the mandate area to tertiary status.

The School seeks to provide excellence in postgraduate education in Energy and Natural Resources. The vision of the Graduate School is to be an internationally recognized centre for advanced studies in natural resource conservation and efficient energy conservation and use.

PHILOSOPHY/OBJECTIVES

The school seeks to provide excellence in postgraduate education in Energy and Natural Resources, in recruiting and maintaining a diverse student population and to foster opportunities in research, creative achievements and professional development.

GRADUATE PROGRAMMES OFFERED

The School offers the following Master's and Doctoral degrees in various fields of discipline:

- Master of Science
- Master of Philosophy
- Doctor of Philosophy

The School of Graduate Studies currently run three (3) courses in the various Schools in the University, through regular but weekend modes namely:

- MSc/PhD Sustainable Energy Management
- MSc/PhD Environmental Engineering Management
- MPhil/PhD Social Forestry and Environmental Governance

STUDENT ENROLMENT

The School has a student population of about Ninety-Five (95). The School is expected to graduate its first batch of students in June 2017/18 Academic Year.

BREAKDOWN OF STUDENTS ENROLMENT & PROGRAMMES

2015/2016 ACADEMIC YEAR

PROGRAMME	NUMBER OF STUDENTS		
	MALE	FEMALE	TOTAL
MSc Sustainable Energy Management	9	1	10
MSc Environmental Engineering Management	8	3	11
PhD Sustainable Energy Management	5	0	5
PhD Environmental Engineering Management	8	0	8
TOTAL NUMBER	**30**	**4**	**34**

2016/2017 ACADEMIC YEAR

PROGRAMME	NUMBER OF STUDENTS		
	MALE	FEMALE	TOTAL
MSc Sustainable Energy Management	3	0	3
MSc Environmental Engineering Management	10	1	11
PhD Sustainable Energy Management	0	0	0
PhD Environmental Engineering Management	4	1	5
MPhil Social Forestry and Environmental Governance	29	4	33
PhD Social Forestry and Environmental Governance	9	1	10
TOTAL NUMBER	**55**	**7**	**62**

Out of the total postgraduate students' population of Sixty-Two (62) during the 2016/17 Academic Year, Ghanaian nationals were Sixty-One (61) representing 98.4% and One (1) foreign national representing 1.6%.

INTERNATIONAL AFFILIATIONS/MoU'S

The establishment of links with international institutions for postgraduate studies does not only encourage both students and staff but place the University on the global map of academic institutions. In the course of the year, the School entered into some collaborations with the institutions like University of Applied Forest Sciences, Rottenburg a.N., Germany and University of South Africa where two of our postgraduate students, Genevieve Kwarteng and Martin Kyereh Bonfeh are on thesis research exchange respectively. The School, also signed an MoU with the West African Rice Development Association based in the Republic of Benin.

STAFFING

The current Senior Members strength of the School is as follows:

S/N	NAME	QUALIFICATIONS	POSITION
1.	Prof. Adebayo Felix Adekoya	B.Sc.(Ogun), M.Sc.(Abeokuta), PhD(Abeokuta) PgDE(LASU), MBA(Ogun)	Dean
2.	Mr. David Twumasi-Ankrah	B.A. (KNUST),MPA (KNUST)	School Secretary

SCHOOL OF POSTGRADUATE CO-ORDINATORS

In order to make the postgraduate programme effective, the Schools have coordinators who see to the day to day running of the programmes at their various Schools.

S/N	Postgraduate Coordinators	Qualification	School
1.	Dr. M. Amo-Boateng	B.Sc., M.Sc., PhD	Engineering
2.	Dr. Simon Abugre	B.Sc., M.Sc., PhD	Natural Resources
3	Dr. Michael Lartey	B.Sc., M.Sc., PhD	Sciences
4	Dr. R K Bannor	B.Sc., M.Sc., PhD	Agriculture and Technology

ACTIVITIES

The SGS, which acts as a co-coordinator to all departments that run graduate programmes in the University, performs among other duties, the following:

- Co-ordinates and liaises with the Central Administration, Schools and Departments on postgraduate issues.
- Organizes seminar for students and members of staff on post graduate issues.
- Organizes and conducts oral examinations for final year postgraduate students to defend their thesis, which is one of the major activities of the school.
- Receive and approves thesis synopsis, examination results, proposals for new programmes
- Assist in the screening and appointment of External and Internal Examiners for Departments.

Workshops/Seminar/Training

During the year under review, the Dean of the Graduate School, attended the serminar listed below:

- International Deans' Course Africa 2017/18 organized by Germany Academic Exchange Services (DAAD) from 19th to 29th June, 2017 in Osnabruck and Berlin, Germany.

The School of Graduate Studies, subsequent to its mandate on research and innovation, during the year under consideration, organized a two-day seminar for its postgraduate students and lecturers. The seminar was aimed at developing postgraduate students' knowledge in scientific research. The seminar was held from the 4th to 5th February, 2017 at the Auditorium. Presentations were made on the following topics by the various resource persons.

1. Scientific Communication in Research by Prof Harrison K. Dapaah
2. Thesis Supervision/Role of Postgraduate Supervisors by Prof. R. C. Abaidoo
3. Postgraduate Thesis Examination by Prof. R. C. Abaidoo.

Outreach Programmes

The School recently embarked on an outreach programmes to promote its programmes in some selected institutions in Brong Ahafo, Ashanti and part of Eastern Region. Some of the institutions visited include:

- Forestry Commission
- Adum Post Office, Kumasi
- ECG, Kumasi A and GRIDCO, Kumasi
- Kumasi Airport and Kumasi City Mall
- Golden Bean Hotel, Kumasi and Golden Tulip Hotel, Kumasi
- Asanko Mine
- Geodril Ghana Limited
- Ghana Water Company (Kumasi and Koforidua)
- Kapital View Koforidua
- EPA, (Kumasi and Koforidua)
- Koforidua Technical University
- Newmont Ahafo
- Ecobank, Kenyasi
- Some Secondary Schools in Brong Ahafo, Ashanti and Eastern.

FUTURE PLANS

The Graduate School intends to work with all Academic Departments in the near future, to mount postgraduate programmes in every Department. As a first step, the following programmes have been submitted for accreditation and they are under review:

- MPhil/PhD in Computer Science
- MPhil in Mathematics
- MPhil in Applied Statistics
- MBA/MPhil in Agribusiness Management
- MSc/MPhil in Climate Science
- MSc/MPhil in Environmental Planning and Development

Other programmes in the pipeline include:

- MSc/MPhil/PhD. in Crop Science with the following specialization at (Department of Horticulture and Crop Production)

    a) Agronomy
    b) Plant Pathology
    c) Crop Physiology
    d) Postharvest Technology
    e) Crop Protection

- MBA in Information Technology Management
- MPhil/PhD in Information Technology

CHALLENGES

The School which is in its infantile stage has some challenges which are indicated below:

Infrastructure/Equipments

The Graduate School building houses the Resource Centre which provides internet access and other e-resources to facilitate research activities among graduate students. The Centre, is however small for the increasing number of students. The current seating capacity is eight (8). A much bigger centre should be needed to accommodate more students.

The conference room of the Graduate School which is used for meetings, also serve as proposal/thesis presentations hall. Meanwhiile, Owing to the mutiple use for the

facility, there is always pressure to find different venues for different events and this has always become a border to the School. The School also lacks adequate resources for teaching and learning, for example, projectors and projector screen for teaching sessions and presentations.

Power Supply

The School is also essential in performing various roles in the university and as such need a constant supply of electricity. The School do not have a plant and as such is affected by any power outage that occurs. The provision of a plant to substitute power supply once there is a power outage will go a long way to help the activities being run in the School.

CONCLUSION

The School of Graduate Studies shall remain the hinge in identifying and addressing the needs of graduate students and will remain steadfast in its bid to grow graduate studies.

UNIVERSITY LIBRARY

INTRODUCTION

University libraries all over the world are classified as the 'heart' of the university system. It is the main information resource centre that supports teaching, learning and research activities in the University. It is the combination of people, collections, buildings and more recently technology whose purpose is to assist users transform information to knowledge.

The role of the library in promoting academic activities is to acquire, process, organise and disseminate relevant, quality, timely and appropriate information in both print and electronic formats to enhance teaching, research and learning in the university. Therefore, the strength of libraries depends on their links to academic faculties and the strength of research and teaching depend on the quality of their libraries.

ACQUISITION

The University of Energy and Natural Resources Library has a total collection of four thousand, six hundred and seventy (4,670) volumes of books and two hundred and fifty-two Journals in the areas of Energy, Mathematics, Forestry and Natural Resources.

The books are on Engineering, Natural Resources Management, Physics, Chemistry, Computer Sciences, Mathematics, Forestry, Business Management, Hospitality Management and Entrepreneurship. New Arrival as of the end of 2016 stood at 307 Volumes books, purchased by the University.

REGISTRATION WITH LIBRARY ASSOCIATIONS

Library Associations act as major players in the Continuous Development of the profession within this rapidly changing world. UENR Library is an institutional member of the Ghana Library Association (GLA) and the Consortium of Academic and Research Libraries in Ghana (CARLIGH).

The Ghana Library Association (GLA) provides educational opportunities through conferences, workshops, publications among others to its members and institutions registered with it.

E-RESOURCES SUBSCRIPTION FOR 2016/2017

As a member of CARLIGH, UENR subscribes to the following e-resources under the CARLIGH umbrella.

- EBSCO host
- Emerald
- Wiley
- Taylor and Francis
- Sage
- Sage Research Methods
- Project Muse
- World Bank e-library
- Cambridge University Press
- Credo Reference
- Institute of Physics

TRAINING/ WORKSHOPS ATTENDED BY LIBRARY STAFF

During the the year under consideration, staff of the Library attended the following workshops, conferences among others.

- E-Resource Librarians Training, Accra on the 19th of May, 2016;
- National Library and Information Week Conference, Sunyani
- Introduction to Electronic Resources Management Workshop
- Ethical Use of Information in Academic Work
- Running an Academic Institution Library, Accra,
- Consortium of Academic and Research Libraries in Ghana (CARLIGH) Workshop, Accra,

FUTURE PLAN

The University Library will hopefully move to the new Library and ICT Complex in the next academic year to have enough space for reading and learning purposes to enhance teaching, research and learning activities in the University.