



UENR

University of Energy
and Natural Resources

VICE-CHANCELLOR'S REPORT

TO THE 6TH CONGREGATION

DECEMBER 2021

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REPORT
TO THE
6th
Congregation

DECEMBER 2021

Designed and Published by:

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PROFESSOR ELVIS ASARE-BEDIAKO
VICE-CHANCELLOR

FORWARD

This report covers the activities of the University over the 2020/2021 Academic Year. It provides information on all major constituents of the University, namely, the offices of the Vice-Chancellor, Registrar, Schools, Directorates, Departments, Centres, Library and other related areas within the University. Unfortunately, due to the outbreak of the COVID-19 pandemic and its accompanying effects on universities worldwide, for a greater part of the period under consideration, there was less academic activity as captured in this report. At any rate, the report adequately accounts for all salient activities undertaken during the year under review.

Despite the pandemic, the University continued with its mandate of Teaching, Research, and Community Service. Efforts were also made in the direction of establishing, building, and maintaining collaborative relationships and partnerships with stakeholders both locally and internationally. We continue to engage all Stakeholders and solicit support from beneficiaries to support the realization of the vision of the University.

Despite challenges such as limited resources among others, the University made some gains in the area of teaching and research. In the coming academic year, the University would religiously continue to pursue its mandate of providing leadership and management of energy and natural resources and be a centre of excellence in these critical areas.

OFFICE OF THE VICE-CHANCELLOR

OFFICE OF THE VICE-CHANCELLOR

1.0 Introduction

The University has taken enormous steps in the pursuit of academic excellence, staff development and infrastructural progress. The Vice-Chancellor is the Chief Executive Officer of the University and he is responsible for the overall planning, direction, organization, management and discipline of the University. As the Chief Academic Officer, the Vice-Chancellor provides leadership to all members of the University. He is accountable to the University Council. This report is the compilation of detailed information by Deans and Directors, highlighting the achievements and challenges over the years. The office of the Vice-Chancellor is staffed as indicated in the table below:

2.0 STAFF

1. Prof. Elvis Asare-Bediako	Vice Chancellor
2. Prof. Adebayo Felix Adekoya	Acting Pro Vice-Chancellor
3. Mr. Robert Abraham Quainoo	Chief Administrative Assistant
4. Kate Mensah	Senior Administrative Assistant
5. Sylvester Debrah	Senior Administrative Assistant
6. Samuel Kyere	Senior Administrative Assistant

3.0 Major Activities over the Past Year

3.1 Completed Activities

Over the past year, the office undertook the following activities;

Memorandum of Understanding (MoU)

- » During the academic year, a Memorandum of Understanding (MOUs) was developed and signed with the Association of Commonwealth Universities to facilitate Partnership for Enhanced and Blended Learning (PEBL) West Africa Project.

3.2 Ongoing Activities

- i. Engagement of Ghana Education Service Sunyani West Municipal - An ongoing agreement is being develop between the Ghana Education Service Sunyani West Municipal and UENR to forge a closer collaboration with the view of improving academic performance of learners at the pre-tertiary level and, to improve the competences and skills of teachers in Mathematics, Science, ICT and Technology Education.
- ii. Engagement of TABCON Energy LTD – An ongoing agreement is being develop between TABCON Energy LTD and UENR to facilitate Tain Hybrid

Hydro-Solar Energy Project.

3.3 Other Activities

Workshops/Conferences/Public Lectures

- » Convener, Digital Ghana: Smart Systems Symposium 2021 on Friday 13th September 2021. The theme for the 2021 edition of the symposium was “The Use of Smart Technologies to Control Illegal Mining and Logging in Ghana” at the University Auditorium.
- » Organizer and Facilitator, One-Day Workshop on “Understanding the core issues of the appointments and promotions criteria. Wednesday, October 2021 at the University Auditorium.
- » DIES 2021 Web Seminar Series. The theme: “University Leadership in Challenging Times: Institutional Governance and Participation”
- » DIES 20th Anniversary Conference on Tuesday, 9th November 2021. Theme: „Higher Education Management for Sustainable Universities – 20 Years of Dialogue on Innovative Higher Education Strategies (DIES)”

4.0 Challenges

Inadequate Office space

5.0 Future Plans of the Office

- » Organize a Pre-Examination Orientation Workshop for invigilators
- » Organize Digital Training and Learning Series: Professional Development for 21st Century Academics.

QUALITY ASSURANCE AND ACADEMIC PLANNING DIRECTORATE

QUALITY ASSURANCE AND ACADEMIC PLANNING DIRECTORATE

1. Introduction

One major goal of Higher Education Institutions (HEIs) across the world has been to offer quality programmes in order to contribute meaningfully to national and global development. It is imperative that providers of higher education develop and implement internationally and nationally acceptable quality standards that meet the needs and aspirations of today's dynamic and competitive world. Hence, quality assurance in higher education is crucial in propelling the development agenda of every nation.

The University of Energy and Natural Resources is mandated to train graduates with the requisite skills to solve the numerous energy and natural resources challenges confronting Ghana and other parts of the world. In achieving this, Quality Assurance is crucial. Therefore, the University has a well-constituted framework for assuring and maintaining quality standards in its operations. Central to this framework is the Quality Assurance and Academic Planning Directorate (QAAPD), set up by Statute 51 of the University Statutes. The Directorate is charged with a core mandate to systematically and continuously design mechanisms to improve the quality of teaching, learning, research and service delivery in the University.

2. Staff

1. Dr. Alex Akwasi Opoku	Ag. Director
2. Ms. Lydia Oteng Fening	Assistant Registrar
3. Mr. Cosmas Rai Amenorvi	Research Fellow
4. Mr. Bright Karim-Abdallah	Assistant Research Fellow
5. Ms. Rita Adjei	Senior Administrative Assistant
6. Mr. Benjamin Bagangma Abugri	Senior Administrative Assistant

3. Completed Activities

- » 5-year Cyclical Institutional Review
- » Review of outstanding programme documents
- » Facilitated accreditation of academic programmes
- » Verification of lecturers' teaching loads (credit hours)
- » Constitution of Quality Assurance Sub-Committees in collaboration with the Registrar

4. On-going Activities

- » Facilitating accreditation of academic programmes
- » Student assessment of lecturers and courses
- » Student exit survey

5. Challenges

- » Insufficient office space
- » Inadequate logistics to facilitate the activities of the Directorate

6. Future Plans

- » Undertake tracer survey for both alumni and industries
- » Facilitate re-accreditation and accreditation of existing and new programmes respectively
- » Implement electronic assessment of lecturers and courses

PROCUREMENT DIRECTORATE

PROCUREMENT DIRECTORATE

1.0 Introduction

The Procurement Directorate 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 procurement related activities. The Directorate's main philosophy is to ensure that, the procurement of goods, works and services are done in a more transparent and efficient manner to ensure value for money and judicious use of national resources.

The Directorate started with one (1) member of staff who is currently the Ag. Director in 2012 but currently has a staffing strength of seven (7) qualified and seasoned professionals in procurement and one (1) administrative staff to support the administrative duties of the Directorate.

2.0 Divisions and Staff

The Procurement Directorate comprises Goods Procurement, Services Procurement, Works Procurement and Contract management. The staffs of the Procurement Directorate are:

John-Baptist Siddick	Ag. Director of Procurement
Baffour Antoa Mensah	Senior Procurement Officer
Emmanuel Kankam-Boadu	Assistant Procurement Officer
Kofi Dwomoh	Principal Procurement Assistant
Gertrude Sefa Boakye	Senior Procurement Assistant
Peter Osei	Senior Procurement Assistant
Samuel Koduah	Senior Procurement Assistant
Philomena Doku	Senior Administrative Assistant

3.0 Activities over the Past Year

The following are some selected activities the Directorate undertook within the year under review:

The Directorate initiated the processes to select a suitable Service Provider to insure all Vehicles of the University.

The Directorate facilitated the procurement of the following Goods;

- A Mini Van each for the School of Natural Resources and the Department of Entrepreneurship and Business Sciences to help with the movement of staff and students.
- Various building and construction materials to aid the Works and Physical

- Development offices undertake various renovation works on campus
- Procurement of Saloon Vehicle for the office of the Vice-Chancellor
- Procurement of Electrical items for the metering of the GETfund Hostel
- Procurement of a 100KVA generator for the University

Within the same period under review, the Directorate facilitated the procurement of the following works:

- I. Completion of 4-Storey 24-Unit classroom block with ancillary facilities for UENR basic school at Sunyani
- II. Construction of cafeteria/syndicate hall at Dormaa-Ahenkro campus and the construction of Washrooms for the Pavilions which were solely funded by the SRC
- III. Conversion of syndicate hall into hospitality block

The office also facilitated the procurement and supply of other logistics to aid teaching, learning, research and administration.

4.0 Future Plans

The Procurement Directorate 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 to meet modern trends. In addition, the office aims to reduce risk and ensure the security of supply with improved quality standards, manage relationships, pursue innovation and leverage on technology.

The Directorate plans to provide user departments, Suppliers and stakeholders' services that meet world-class standards; to assist the University meet and surpass targets of its core functions of teaching and research as well as its Strategic Objectives. The Directorate plans to be the main contributor in transforming the University into World Class Status through use and application of modern Procurement Principles and practices that will assure continuous flow of materials and services so that university operations are not interrupted. The department will also assure value for money.

The Procurement Directorate envisages attending refresher courses in Electronic Procurement, World Bank and other Development Partners procurement processes, Works and Services Procurement workshops as well as Public-Private Partnership (PPP) initiatives.

5.0 Conferences / Workshops / Seminars

Some members of staff of the Procurement Directorate attended the following Conferences / Workshops / Seminars:

1. Sustaining the Supply Chain Performance Improvement in the Public Health Sector in Ghana organized by the International Associations of Public Health Logisticians, Ghana in conjunction with The Kwame Nkrumah University of Science and Technology on November 5, 2021(Virtual).
2. Adhering to approved Procurement Procedures in a pandemic: focus on the Public Sector organized by Public Service Procurement and Supply Chain Class on October 28, 2021(Virtual).
3. The Importance of the Central Tender Review Committee in the Advancement of Procurement Compliancy organized by the Chartered Institute of Procurement and Supply (CIPS)-Ghana Branch on October 20, 2021 (Virtual).

INSTITUTIONAL ADVANCEMENT AND ALUMNI RELATIONS OFFICE (IAARO)

INSTITUTIONAL ADVANCEMENT AND ALUMNI RELATIONS OFFICE (IAARO)

1.0 INTRODUCTION

As part of the Vice-Chancellor's strategic vision towards making the University of Energy and Natural Resources (UENR), a centre of excellence, the Institutional Advancement and Alumni Relations Office (IAARO) was set up to champion the advancement activities of the University. The IAARO have four distinct units namely; Alumni Relations, Marketing Communications, Strategic Partners/stakeholders and Fund-raising.

The objective for setting up this office is to advance the mission and vision of UENR by providing leadership, expertise in the areas of alumni relations, fund-raising, marketing communications, and strategic partnerships in order to secure private and public financial resources to support the activities of the University.

The Institutional Advancement and Alumni Relations Office is directly placed under the Office of the Vice-Chancellor and its mandate includes; to establish long-lasting community relationships, enhance the corporate image of the university, promote local and global educational opportunities, and also build robust financial resources to support the institution.

2.0 STAFF

Mr. Charles Kojo Aidoo, ChPA	Ag. Head of IAARO
Mr. James Clarke Hayford	Junior Assistant Registrar
Mr. Richard Hammond	Junior Assistant Registrar
Mr. Ebenezer Amoako Paintsil	Senior Administrative Assistant

3.0 Major Activities over the Past Year

Completed Activities

1. Inauguration of the UENR Alumni Diaspora Network and Swearing in of Executives.
2. Complete database of all Alumni of the University.
3. Complete database consisting of companies inside and outside of Sunyani.
4. In collaboration with UENR Global Association, presented educational items to the Fiapre Traditional Council
5. Secured sponsorship for the Overall Best Actuarial Science Student and the Vice-Chancellor's Best Graduating Female Student.

Ongoing Activities

1. Maiden Alumni Homecoming
2. Partnering with the University Health Services and Enterprise Insurance to construct a multipurpose laboratory for the university.
3. Profiling companies within and out of Sunyani.
4. Profiling of Alumni.
5. Creating a Branding Policy
6. Establishing Customer Service Policy
7. Establishing Marketing Communications Policy
8. Conducting Tracer Studies

Other Activities

- ▶ **Workshops-**
 - Registrar's Offices Welfare Scheme workshop
 - Training programme at the University of Ghana (UG), University of Professional Studies (UPSA) and Ghana Institute of Management and Public Administration (GIMPA) to understand their Advancement and Alumni activities.
 - Training and familiarization visit to the Institutional Advancement Office at the University of Cape Coast
- ▶ **Conferences-**
 - International conference and Alumni Homecoming for University of Ghana, Economics Department.
 - Peniel Doxa Consulting: Strategy Building for Fund-raising and Endowment Funds in Tertiary Educational Institutions and Social Enterprises.
- ▶ **Seminars-**
 - Training programmes for Deans, Directors and Administrative Heads
 - Training for Assistant Registrars and Junior Assistant Registrars at the University of Energy and Natural Resources.

4.0 Challenges

1. Inadequate office equipment and staff.
2. Lack of continuous training programmes for staff.
3. Inadequate funds to properly brand the office

5.0 Future Plans of The Office

1. Properly set up all the units of the office.
2. Properly equip the fund-raising unit with staff.
3. Brand the Accra office for visibility and advocacy for UENR.
4. A vehicle to aid advancement operations (Field work, etc.)

ACCRA OFFICE

In furtherance to the mission of the university, the Accra Office continues to engage and facilitate a number of activities of its stakeholders (Directorates and Departments/Centres of UENR) in Accra. The year under review saw the Office's operations realigned with the Institutional Advancement and Alumni Relations Office.

Major Activities over the Past Year

- Serves a major platform for relationship building between the University and strategic stakeholders/partners such as the Ghana Tertiary Education Commission, Ministry of Finance, Controller and Accountant General's Department, Ghana National Petroleum Commission, Ghana Gas Company Limited, sister Tertiary institutions, Bank of Ghana, Ministry of Lands and Natural Resources, Ministry of Energy, Foreign Embassies etc.
- South-South cooperation project: The Office continues to facilitate and coordinate with the Ministry of Energy with regards to the implementation of the project in the southern zone
- Admission clinic to encourage young females to undertake STEM programmes was organized among some selected schools in Greater Accra.

Challenges

- The lack of vehicle hinders the movement of staff. This increases the turnaround time for the Office.
- Inadequate office furniture and equipment.

Future Plans of the Office.

1. The office seeks to rebrand its activities to be in line with the mandate of Institutional Advancement and Alumni Relations Office.
2. Secure a legally registered land in a strategic location in Accra for the construction of a permanent office complex and guest house to facilitate the University's official assignment in the national capital.
3. Immediately resource the temporal office with office furniture and equipment.
4. Acquisition of pick-up to facilitate the movement of staff of the university in Accra.

INTERNATIONAL RELATIONS OFFICE (IRO)

INTERNATIONAL RELATIONS OFFICE (IRO)

1.0 Introduction

The International Relations Office (IRO) is an outreach arm of the Vice Chancellor's Office with the mandate to facilitate, promote and coordinate all University's external relations with regard to visiting scholars, international students, research collaboration and funding and other external staff training programmes. The establishment of the IRO fits perfectly in the 10-Year Strategic Plan of the University that recognizes the need to promote excellence and internationalization of UENR. The IRO envisions to "making UENR the most visible and internationally recognised university through our collaborations, partnerships, research and faculty and students' exchanges".

2.0 Staff

- | | |
|---------------------------------|---------------------------------|
| 1. Ing. Prof. Amos T. Kabo-bah | Dean |
| 2. Ms. Akpene Ame Kwadzo | Junior Assistant Registrar |
| 3. Ms. Priscilla Asiedu Konabea | Senior Administrative Assistant |

3.0 Major Activities over the Past Year

Over the past year, the office undertook the following activities;

a) Memorandum of Understanding (MoU)

During the academic year, a number of Memorandum of Understanding (MOUs) were developed and signed with various institutions to facilitate student, staff and faculty exchanges, joint research and joint programme development. These institutions are:

1. African Institute Mathematical Sciences (AIMS) Ghana
2. Université Alassane Ouattara
3. University of Missouri-Kansas City
4. Digital Earth Africa
5. Nanjing University of Information Science
6. Kampala International University.
7. Ghana National Fire Service
8. National Disaster Management Organisation
9. University of New South Wales
10. Global Wings Travel and Tours Limited
11. Best Education Services Ltd.

Revitalising existing MoUs with;

1. ATLAS Space Operation
2. SPIRE

3. New Mexico Institute of Mining and Technology

b) Meeting with International students: During the academic year, IRO met with the International Students' Association executives to discuss issues concerning their wellbeing.

Following the meeting with the executives, the Vice-Chancellor met with the international students to discuss matters concerning their academic and social lives.

c) Welcome Dinner: IRO collaborated with the International Students Association to organise a welcome dinner dubbed "Akwaaba Dinner" on 21st March, 2021 for the newly admitted international students.

d) Excursion: During the year, the international students embarked on an excursion to Cape Coast from 2nd– 4th July, 2021.

e) Understudy: Staff of the office embarked on a study tour to the Kwame Nkrumah University of Science and Technology (26th – 29th July, 2021), University of Ghana (9th -11th August, 2021), University of Cape Coast (22nd - 24th September, 2021) and Eberswalde University of Sustainable Development, Germany (27th September – 10th October, 2021) to understudy how the various international offices operate.

f) International Visit: The Office received Professor Kwamena Panford (Carnegie Fellow) from North Eastern University from 23rd June – 23rd August, 2021.

The International Office received Professor Diji Deputy Vice-Chancellor of the Kampala International University. His visit was to explore avenues for establishing a mutually beneficial relationship with UENR. His visit was from 30th August - 2nd September, 2021.

Ongoing Activities

Development of IRO website – The website is almost complete and would be put up soon.

Development of Policies – Policies are important to guide and streamline activities of any office or institution. In the light of this, IRO developed some policies which are yet to be approved.

These are;

1. International Students Mentoring Policy
2. Staff and Student exchange Policy

3. Collaboration and Partnership Policy
4. Travel Policy
5. Accommodation Policy.

Engagement of Ghana Immigration service - An agreement is reached between the Ghana Immigration Service and UENR for the Ghana Immigration Service to set up an office in UENR to facilitate all immigration issues for students and staff of the University.

Engagement of a travel and tour agency for staff and student to ease international travels - An internationally recognised Travel Agency, Global Wings Ltd, is being engaged to handle the travelling Unit of the IRO for the University. Their involvement shall ease travel for staff and students, and enable international students get some special waivers for travel to Ghana and abroad.

Other Activities

Workshops/Conferences/Seminars

1. ROWS Workshop on the University Statutes in perspective, becoming a world class University Administrator etc. – 7th August and 10th August, 2021.
2. Workshop on GIS - 27th September -1st October, 2021
3. The office organised a Digital Earth Africa Training Workshop for some staff – 7th October, 2021
4. Public Lecture on theme: Triple threats on Ghana's Economic Horizon; Policy implications and roles of UENR. This was organised in collaboration with the School of Management Science and Law – 5th Aug, 2021 at UENR Auditorium.
5. The Ag. Dean took part in the 5th Digital Belt and Road (DEBAR) Conference where he was a speaker - 6th -7th September, 2021 DEBAR Conference.
6. The Ag. Dean took part in the roundtable on big data use for environment-related SDGs organized by the United Nations Environment Programme and the Chinese Academy of Sciences - International Regional Centre of Big Data for Sustainable Development Goals - 8th September, 2021.
7. The Ag. Dean took part in the Side-event on Leveraging digital technologies and innovation for climate change adaption: climate information system, early warning system: 13th September, 2021, Sal, Cabo Verde.
8. The office facilitated for the VC to participate in the Celebration of the international day for disaster Risk Reduction on the theme: Only together we can save the planet - 13th October, 2021 via zoom.
9. The Ag. Dean took part in the organisation for GEO Plenary 2021 to be held

virtually.

10. The Ag. Dean took part in the organisation for GEO Symposium 2021 to be held virtually.
11. The Ag. Dean was the Lead panelist for AFRIGEO programme -17th -19th November, 2021.
12. The office is leading the hosting of the UN conference scheduled for May, 2022 on behalf of the Ministry of Education.
13. The Ag. Dean served as Co-Chair of GEOLDN initiative, facilitating a support fund for the postgraduate programme on Sustainable Land Management to be hosted by School of Geosciences from 2022.

Funds/Centres

- g) The Ag. Dean sought for support for a workshop on Land Degradation Neutrality (LDN) scheduled for December which is in the pipeline.
- h) A proposal was submitted to Digital Belt and Road (DBAR) program to establish an International Centre of Excellence (ICoE) for big data at UENR to support SDG's. The proposal has been approved and preparations are underway for the setting up of the Centre.

4.0 Challenges

- Inadequate Office space and logistics

5.0 Future Plans of the Office

- Organisation of Study Abroad Fairs.
- Recruitment of more international students.
- Receiving and sending of exchange students and staff.
- Hosting of a 5th UNOOSA Conference on Space Technologies for Water Management from the 10th -13th May 2021.

**UENR ENTERPRISE
AND CONSULTANCY
LIMITED**

UENR ENTERPRISE AND CONSULTANCY LIMITED

1.0 Introduction

The UENR Enterprise and Consultancy Limited, also called U-PRISE is part of the newly created offices of the university. The office was inaugurated in August 2021. The mission of the enterprise is to create special purpose vehicles (SPVs) for UENR in achieving both financial and infrastructural sustainability. Thus, the vision is to develop a well-structured revenue generating portfolios through venture partnerships between UENR and the world. The enterprise strongly believes in collaboration, innovation, trust, teamwork and accountability in creating value sources. The enterprise, which is a limited liability company, has two (2) main mandates:

- **Infrastructural Development Concept**

This concept seeks to maintain the progress of Free SHS policy in Ghana by minimizing the infrastructural deficit gap of UENR through various financing arrangements between UPRISE and its partners. This concept would give birth to critical projects of the university such as construction of students' hostels, staff housing and other capital-intensive projects of the university.

- **Financial Sustainability Concept**

Many public universities in Ghana are facing challenges that are putting their financial strength under pressure. The story of UENR is not different. Meanwhile, students expect a significant improvement on their payment of tuition and other related fees in respect to academic quality and facilities. So, the question now is; while applying U-PRISE Infrastructural Development concept that focuses more on long-term, what short term ventures can UENR enter or create to be financially sound?

2.0 Office and Staff

The office is made up of nine (9) member Board of Directors spearheading the control and direction of the enterprise. Currently, there is only one (1) Junior Assistant Registrar running the office and serving as the secretary to the UPRISE board.

Internal Board Members

Emmanuel Opoku Marfo (PhD)	Board Chairman
Nicholas Oppong Mensah (PhD)	Member
Mr. Augustine Opoku Mensah	Member
Mr. Emmanuel Kankam Boadu	Member
Mr. Paul Hammond	Member
Mr. Richard Andoh	Board Secretary

External Board Members

Mr. Rockson Kwesi Dogbegah	Member
Mr. Samuel Kwame Ntim-Adu	Member

Staff

Mr. Richard Andoh

3.0 Major Activities over the Past Year

The officer in charge assumed office in 1st June, 2021. Therefore, both completed and ongoing activities are considered within six (6) months.

a) Completed Activities

- » A brief working-document for the office has been drafted which spells out the office logo, motto, office mail, website design and U-PRISE as the short name for UENR Enterprise Limited.
- » A presentation on the working-document has been made to the School management for review.
- » The enterprise has been registered as a limited liability company, awaiting a certificate from the Registrar General's Department.

b) Ongoing Activities

I. Ongoing Partnerships Activities

Generally, there are numerous partnership proposals on the table and, management and board are taking critical review on the entire proposal. Some of these proposals are:

- Production of mineral water by CHRYSTAL Management Company
- Fuel Station by Ghana Oil Company
- Piggery production by Attaché
- Printing House by DonDee Limited
- Other many construction partnerships

II. Ongoing Administrative Activities

- Development of policy/agreement document for both internal & external partnerships.
- Proposed meeting with schools, departments, directorate, centres & units.
- Consideration of board functions and functions of the Junior Assistant Registrar under the office.
- Proposed Under-Study in other public universities.
- Design of pull up banners as part of enterprise awareness and branding (done).

- Creation of the enterprise's website

4.0 Challenges

- » No office
- » Only one staff (JAR)
- » No office equipment/materials

5.0 FUTURE PLANS OF THE OFFICE

Short Term (less than 2 years)

Apart from furnishing and stocking our new office as an enterprise, at least, from next year, the office would want to see the below partnership arrangements working and serving the entire university community:

- » Production of mineral water by CHRYSTAL Management Company
- » Fuel Station by Ghana Oil Company
- » Piggery production by Attaché
- » Printing House by DonDee Limited

Medium Term (1-5 years)

The office would want to uplift the face of UENR by turning the university's reserve land from where the nursery is into commercial area where banks, supermarkets, stationary shops, shopping Mall and other offices will be available to feed the university community and its environs.

Long-Term (1-15 years)

- » A well-structured revenue generation and a growth SPVs where even staff of UENR will become shareholders of the UENR Enterprise and Consultancy Limited.
- » Students and staff infrastructural deficits will be completely solved.

**CENTRE FOR
GRANTS, RESEARCH
AND INNOVATION
(CeGRI)**

CENTRE FOR GRANTS, RESEARCH AND INNOVATION (CeGRI)

1.0 Introduction

The Centre for Grants, Research and Innovation (CeGRI) is one of the new centres established and launched in the 2020/2021 academic in accordance with the mandate of the University, the Strategic Plan and the Vice-Chancellor's vision. Its establishment is backed by the Statutes of the University (Statute 59) and its main objective is broadly defined to promote research and scholarly work in the University including supervising the efficient administration of various research grants, awards and fellowships. The mandate of the Centre is to set up a structured, coordinated and efficient system to develop and implement the University research policy, promote innovation and technology transfer, ensure that research is of high quality and meets international standards and increase the University's research output and performance. CeGRI is also tasked with the responsibility of ensuring that consultancies, intellectual property and related activities are streamlined and protected in the University for the benefit of researchers.

1.1 Vision, Mission and Strategic Objectives

The vision of CeGRI is to become a strong and efficient support system for planning, coordinating and managing research activities to drive accelerated institutional development.

To achieve this vision, the CeGRI shall coordinate research activities in the university through the provision of various technical, administrative and financial management support services that enhances delivery of high-quality research and innovation that meets international standards.

1.2 Directorate/Division and Staff

- | | |
|------------------------------|---------------------------------|
| 1. Dr. Peter O. Sanful | Acting Director |
| 2. Rev. Kwaku Karikari Amoah | Administrator |
| 3. Mr. Bright Adarkwah | Senior Administrative Assistant |

1.3 Core Functional Areas of CeGRI

- i. Research Development
- ii. Project Administration
- iii. Research Performances
- iv. Innovation, Technology Transfer and Intellectual Property
- v. Research Ethics

2.0 Major Activities over the Past Year

2.1 Completed Activities

2.1.1 Preparation of Internal Administrative Manual

A draft internal administrative manual for the effective administration and management of the centre has been developed. The manual highlights the vision, mission, strategic objectives, services and functions of the centre and the definition of duties and responsibilities of all staff. The manual also provides details on the various units and their functions, staffing, organogram, and income generation ventures and revenue mobilization for the Centre. The internal working manual is hinged on the mandate of the Centre and is informed by the relevant policies, procedures, processes and regulations of the University.

2.1.2 Opening of Bank Accounts

Three bank accounts have been opened with the GCB Bank Limited in USD, EURO and Ghana Cedis currencies for the smooth financial administration of the Centre. The purpose is to delineate the finance and accounts activities of the CeGRI and help to streamline the financial operations of the Centre. It is also going to be the channel for fundraising to support the University Research Fund and other operational activities. This activity has been completed as planned and the bank accounts are operational.

2.1.3 Institutional Registration on Grant Awarding Platforms

In order to facilitate submission of research proposals by the university community, CeGRI has successfully registered the University on grant awarding platforms and acquired the relevant unique identification numbers. Currently, the Centre has successfully completed the institutional registration on major platforms such as;

- i. US.gov (SAMS Registration) with registration number
- ii. Grants.gov
- iii. NCAGE
- iv. Royal Society
- v. Wellcome Trust
- vi. EU- ECAS
- vii. EDCTP
- viii. Je-S
- ix. Era Commons

2.1.4 Support services for the submission of research proposals

The Centre renders support to the University community in the processing of all documents needed to accompany the submission of research proposals such

as research agreements, letters of award and letters of institutional support. We provide expedited services to staff (both teaching and non-teaching) to ensure that all documentation needed by the University community to submit a proposal for research grant, consultancy, fund raising and all research related activities are secured within the shortest possible time. So far, CeGRI has supported the submission of three grant applications.

2.2 Ongoing Activities

2.2.1 Development of the University Research Policy

The University Research Policy is being drafted to streamline the effective and efficient planning, coordination, regulation and management of research activities in the University, and also to harmonize research activities across academic units. The draft policy would be presented to the Academic Board for approval and implementation. The following sub-policies, which are at various stages in their development, some initiated and completed by other administrative units, will accompany the main research policy;

- i. Research Ethics Policy (initiated and completed by School of Science)
- ii. Consultancy Policy
- iii. Innovation and Technology Transfer Policy
- iv. Intellectual Property Policy (ongoing at QAAPD)
- v. Plagiarism Policy (Exists at QAAPD)
- vi. Publication Policy (Exists at QAAPD)
- vii. Policy on Data Protection, Ownership, Access and Rights

The policy sets out the legal framework for the conduct of research in the university based on the University mandate, Statutes and the Vice Chancellor's vision. The draft research policy is 60 % ready. The deadline for the completion of the draft is set for the first quarter of 2022.

2.2.2 Grant Administration Guidelines

Guidelines for administration of research grants in the University is also being developed. The guidelines will support the implementation of the research policy. When approved, the document will offer clear directives on how research funds are to be administered for sponsored projects. The guidelines will comprise the following;

- i. Guidelines on research project administration
- ii. Guidelines on how research should align with the University Research Agenda and national development priorities, policies and programmes
- iii. Guidelines on how research should meet international standards
- iv. Financial management guidelines - Accounting Manual

- v. Guidelines on administration of fellowships, travel grants, conference grants etc.
- vi. Guidelines on publication

A first draft is expected to be completed by the end of December 2021.

2.2.3 Financial Operations and Procedures Manual for Research Projects

The financial operations and procedures manual for research projects developed by the Finance Directorate will be adopted and used as the main policy document for the financial administration of research projects.

2.2.4 Development of Database of Existing Projects

A compilation of all past and ongoing projects and the respective Principal Researchers/Project Coordinators in the university have been done.

2.2.5 Research Performance Monitoring and Evaluation

As part of measures to ensure the effective evaluation of institutional research output, CeGRI is facilitating the registration of all staff on ORCID, SCOPUS and Researcher ID platforms. So far, the response has been encouraging, although more staff are yet to register. The acquisition of these persistent researcher identifier IDs will enable CeGRI to effectively track publications of staff in the scientific database domain and to generate accurate metrics on individual staff, department, school and University research performance for each academic year. In this regard, a compilation of the research publications of staff of the University is underway, and mechanisms to quantify research output have been identified and evaluated. Additionally, it will help rank the performance of individual staff, Departments and Schools to generate the research performance report of the UENR on research. Currently, the data on staff research performance are being collated for analysis and reporting during the first quarter of 2022.

2.2.6 University Research Agenda (URA)

As part of the process to develop a framework for the direction of research in the University, an agenda for research is being developed for the University of Energy and Natural Resources. The process for the formulation of a University Research Agenda (URA) began in August 2021. Consultations with all Deans and School Boards have been completed, leading to the adoption of the Strategic Research Development Plan Guidelines for the formulation of School, Departmental and Centre research agenda. These research agenda would form the basis for the overall university research agenda which will be formulated after all School, Department and Centres research agenda have been submitted.

By the strategic research development plan, each School agenda would represent a specific thematic area of the URA. The draft URA would be presented to the

Academic Board for approval and subsequent implementation.

2.2.7 University Research Fund (URF)

To operationalize the URA, CeGRI is setting up the University Research Fund (URF), with sustainable financing from various internal and external sources currently being explored. The URF is the foremost mechanism and internal strategy to provide a stable, reliable and guaranteed support for actualizing research ideas and innovations, supplemented by externally funds from sponsored projects. Guidelines for the administration of the URF are being developed and will be presented to the Academic Board for approval.

In terms of fundraising from external sources, CeGRI has launched an ambitious campaign targeting over 85 organisations across the country to solicit for support to the URF. These donors and sponsors include but not limited to government agencies, Ministries, Industries, International Development Partners, and International NGOs.

The launch of the URF is scheduled for first quarter of 2022.

3.0 Other Activities

3.1 Meetings and Workshops

During the period under review, CeGRI engaged all the six (6) School Boards at separate meetings to discuss the URA and solicit their inputs, buy-in and support.

4.0 Challenges

- a. The Centre is acutely under staffed, with only three out of the required full complement of eight staff to fill the core functional areas
- b. The office space allocated to CeGRI is still under renovation, and also as a consequence, lacks appropriate office resources and logistics to effectively perform its functions.

5.0 Future Plans of the Office/Directorate/Division/

1. Recruitment of more staff
2. Capacity building and training services for staff
3. Centre research and capacity building proposals
4. Fundraising events
5. Launching of the University Research Agenda
6. Launching of the University Research Fund

6.0 Conclusion

Irrespective of the above challenges, the first six (6) months of operation has been very smooth, successful and promising. The CeGRI is immensely grateful to the University Management, Deans, Heads of Department and Research Centres, Administrative and Finance Units and all staff for their support, cooperation, encouragement and constructive criticisms.

CENTRE FOR DISTANCE EDUCATION AND E-LEARNING

CENTRE FOR DISTANCE EDUCATION AND E-LEARNING

1.0 Introduction

In accordance with statute 60, the Vice-Chancellor established the Centre for Distance Education and E-Learning (CeDEEL) in August 2021. The Centre was established with the mandate to expand access to undergraduate and postgraduate education in Ghana. The Center for Distance Education and E-learning supports the University's mission and its strategic plan by enhancing students' learning and success through the following mediums;

- Distance
- Sandwich
- Short Courses
- Professional Vocational/Technical Certificate Courses
- Evening Programmes

The Centre perform the following functions:

1. Formulate distance learning policy for the University subject to approval by Academic Board
2. Advise the Academic Board on the programmes to be run through distance learning
3. Advise and recommend the infrastructure and equipment required for the effective and efficient operation of distance learning education in the University
4. Ensure smooth running of the academic programmes

Vision: To bring tertiary Education to the doorstep of potential learners across the country and beyond through a blended approach of teaching and learning.

Mission: To maximize students' access to courses through the use of a web-based delivery system.

Objectives/Goals

1. Promote success through curriculum and instruction that address student learning needs through distance learning.
2. Provide student support services and programs that complement distance learning and address student needs.
3. Provide distance learning support services to faculty, staff, and administrators.

Academic Programmes

The Centre currently run the following undergraduate programmes on the Sunyani Campus:

BSc. Computer Science

BSc. Information Technology

BSc. Hospitality Management

BSc. Natural Resources Management with Options in:

- Fisheries and Aquaculture
- Land Reclamation and Restoration
- Social Forestry
- Forest Resources Management
- Ecotourism

BSc. Resource Enterprise and Entrepreneurship

BSc. Agriculture with options in:

- Animal production
- Crop Production

BSc. Agribusiness

BSc. Electrical and Electronic Engineering

BSc. Mechanical Engineering

2.0 Administration of the Centre

The following personnel constitute the Centre's Administration:

Dr. Benjamin Asubam Weyori

Acting Director

Mr. Alfred Ohenenana Appiah

Centre Registrar

Ms. Ellen Adoma Boateng

Junior Assistant Registrar

Ms. Marian Owusuah Damoah

Senior Administrative Assistant

Students Statistics

Below is the enrolment statistics for the 2020/2021 Academic Year:

PROGRAMME	NUMBER OF STUDENTS		
	MALE	FEMALE	TOTAL
BSc. Agriculture	143	12	155
BSc. Agribusiness	22	7	29
BSc. Resources Enterprise and Entrepreneurship	42	36	78
BSc. Electrical and Electronic Engineering (Top Up)	68	1	69
BSc. Mechanical Engineering (Top Up)	32	3	35
BSc. Mechanical Engineering	16	1	17
BSc. Hospitality management	3	33	36
BSc. Fire and Disaster Management	32	4	36

BSc. Natural Resources Management	43	17	60
BSc. Computer Science	15	0	15
BSc. Information Technology	52	6	58
BSc. Mathematics	5	0	5
BSc. Statistics	1	0	1
TOTAL NUMBER	468	113	559

3.0 Future Plans of the Centre

There is ongoing discussion with Stakeholders to establish study Centres in Kumasi, Accra, Tamale, Kenyase, Dorma Ahenkro, Akuse and other places.

In the near future the following programmes would be mounted and run at various Centres across the country:

- o BSc. Chemistry
- o BSc. Biochemistry
- o BSc. Mathematics
- o BSc. Statistics
- o BSc. Actuarial Science
- o BSc. Nursing
- o BSc. Medical Laboratory Science
- o BSc. Fire, Safety and Disaster Management
- o BSc. Resource Enterprise and Entrepreneurship
- o BSc. Economics
- o Diploma Resource Enterprise and Entrepreneurship
- o Diploma General Agriculture
- o Diploma Insurance
- o Diploma Statistics
- o Diploma Computer Science
- o Diploma Information Technology
- o Diploma Hospitality Management
- o Diploma Fire, Safety and Disaster Management

CENTRE FOR PROFESSIONAL DEVELOPMENT (CePDev)

CENTRE FOR PROFESSIONAL DEVELOPMENT (CePDev)

1.0 Introduction

The Centre for Professional Development (CePDeV) is one of the centres established by the Vice-Chancellor and management in June 2021 with backing from the University Council. Professionalism is key to workplace success; a solid professional reputation and a high level of work ethics and excellence are needed to meet the dynamic demands of today's society. The mission of CePDev is to provide high quality, timely and cost-effective professional development events and resources to the university employees and external clients. CePDev achieves its mission by delivering in-person and online programs facilitated by internal and external partners and by seeking continual feedback from subject matter experts and internal stakeholders. The Vision is to be recognized as the Centre of excellence at UENR for providing professional development opportunities and resources that meet the evolving needs of employees and graduate students throughout the University and beyond. The core functions of the Centre are

- » Provide academic orientation services to all newly appointed faculty, administrators, and staff in partnership with HR
- » Generate income through short courses, customized training, consultancy and projects
- » Conduct environmental scans and needs assessments to determine any gaps and develop professional programmes to fill these gaps
- » Liaise with Deans/Heads/Directors in the development and implementation of professional development activities and plans in the University
- » Develop training policies and associated policy guidelines for the University
- » Maintain a network of external and internal contacts so that knowledge of trends in employee development remains up-to-date and informs University practice
- » Work collaboratively with the HR Division to identify and satisfy development requirements that emerge from their activities.

2.0 Staff

Dr (Mrs.) Mercy Afua Adutwumwaa Derkyi
Ms Abigail Codjoe
Ms Martha Bayuo

Acting Director
Junior Assistant Registrar
Senior Administrative
Assistant

3.0 Major Activities over the Past Year

a) Completed Activities

1. Over the past few months, the Centre has had its Director, Registrar and Administrative staff.
2. Submitted Expression of Interest (EOI) to Association of Commonwealth Universities for staff and students' capacity development partnership
3. Submitted grant to ACU on Early Career Capacity building for faculty and administrative staff
4. Received grants of Euro 5,005 from Wageningen Environmental Research to train field enumerators and undertake field data collection in Bono East Region.
5. Acquired essential office needs such as projector stand; flip stands, camera, camera stands
6. Collated database of UENR Professionals

b) Ongoing Activities

1. Management has allocated an office space but yet to be furnished for the staff to move into it.
2. Despite the office challenge, the staff are working on professional skills needs and expertise assessment forms for the different professions at the University.
3. Developing the Professional Development Policy and Plan for the Centre for staff and external professions training.

Other Activities

- » Workshops: Supported the University Human Resource Division in providing training for newly recruited faculty members in September 2021

4.0 Challenges

- » Slow Completion of the office space and furnishing posing a challenge for the staff to work efficiently
- » Absent of office table and chairs, projector, computers and printers and all office basic logistics

5.0 Future Plans of CePDev (November 2021-November 2022)

1. Follow up on the office Space completion and furnishing
2. The Team will design and conduct Staff skills gaps needs and expertise assessment –Nov-Dec 2021
3. Liaise with the University Relations Office and Information Technology Directorate to develop CePDev content for the website – Nov-Dec 2021

4. Identify potential partners and collaborators
5. Develop and Organize training programme for teaching staff and non-teaching staff: December – Nov 2022
6. Explore grants to build the capacity of staff -Nov 2021 -Nov 2022
7. Develop and organize short courses for external professionals: Jan -November 2022
8. Develop bi-annual professional development reports – June & November 2022

OFFICE OF THE REGISTRAR

OFFICE OF THE REGISTRAR

1.0 Introduction

The Office of the Registrar is the apex coordinating administrative wing of the University, and therefore sees to the adherence of administrative procedures of all the offices under the Registrar's Office and the entire University.

The Registrar being responsible for the day-to-day administration and management of the University, the Registrar's Office handles basically, all Secretarial, advisory as well as administrative management responsibilities in the University.

2.0 Staff

1. Solomon Panford, Esq, APR.	Registrar
2. Ms. Bernice Kyei-Mensah	Junior Assistant Registrar
3. Ms. Iris Ashorkor Akrong	Senior Administrative Assistant

3.0 Deliverables

The Registrar's Office continued to provide the overall backstopping to the entire administrative machinery of the University through the following Divisions under the Registrar's Offices:

- Human Resources Division
- General Administration Division
- Academic and Students' Affairs Division
- University Relations Office
- University Legal Office
- Etc.

Essentially, therefore the detailed account of the various deliverables within the year under review are as provided beneath under the divisional reports.

HUMAN RESOURCES DIVISION

HUMAN RESOURCES DIVISION

1.0 Introduction

The Human Resources Division is an office, which renders pivotal services to both staff and the entire University. It is an office under the Registrar's Offices mandated to undertake functions relating to the management of the Human Resources of University such as Appointments and Promotions, Training and Development, Performance Management, Employee Welfare and Motivation, Industrial harmony etc.

2.0 Staff of The Division

1. Ms. Yvonne Claire Dumenu	Assistant Registrar/Ag. Head
2. Mr. John Kwasi Annan	Junior Assistant Registrar
3. Ms. Juliet Assumeng Benewaa	Junior Assistant Registrar
4. Ms. Cecilia Kubio	Junior Assistant Registrar
5. Ms. Elsie Mark-Anthony	Principal Admin. Assistant
6. Mr. Bismark Osei	Senior Admin. Assistant
7. Mr. Clifford Asomah Kyere	Senior Admin. Assistant
8. Ms. Francisca Gyanwah Forson	Senior Admin. Assistant

3.0 Major Activities Under the Period of Review

3.1 Appointments

The University was granted financial clearance on September 07, 2020. The division coordinated mass recruitment for employment into the various categories of staff provided in data below:

Senior Members	110
Teaching	81
Non-Teaching	29
Senior Staff	133
Junior Staff	35
Staff placed on payroll/Non Subvented Staff	59
TOTAL	337

3.2 Promotions

Under the period of review, a remarkable number of staff qualified and the division duly processed their documents for promotion to the various ranks. The data below provides additional information:

PROMOTION/UPGRADE/APPOINTMENT ON PROMOTION

Promotion to the rank of Associate Professor	7
Promotion to the rank of Deputy Registrar	1
Promotion to the rank of Senior Lecturer	15
Upgrade to the rank of a Lecturer	23
Appointment on Promotion (Senior Staff to Senior Membership)	6

3.2 Training and Development

The Division embarked on several trainings to ensure continuous professional development of staff in the various categories. These include;

COMPLETED

- a. Orientation for newly recruited Senior Staff (26th March, 2021).
- b. Orientation for newly recruited Senior Members (6th to 7th May, 2021)
- c. Training for Junior Staff at the Grounds, Garden and Beautification Section (17th to 28th May 2021)
- d. Training for Janitorial Staff at the Estate Organization (21st June to 2nd July 2021)
- e. Training for newly appointed Senior Members-Teaching and Research (10th September 2021).
- f. Training for Junior Assistant & Assistant Registrars (7th -8th October, 2021)
- g. Training for Principal, Senior /Administrative Assistants (28th October, 2021)
- h. Training for Security Personnel, Junior and Senior Staff Category (15th to 18th November 2021)

PENDING

- a. Orientation for National Service Persons (Provisional date: December 01, 2021)
- b. Orientation for Staff who assumed duty between September and December (Provisional date: January 25, 2022)

3.3 Performance Management

COMPLETED

- A. Measures have been taken to re-strengthen the annual performance appraisal of staff, especially Administrative/Professional by training staff on the existing Performance Management System.
- B. Designing a Statistical system to enable the implementation of the evaluation of Human Relations for Administrative/Professional.

PENDING

Issuing notice to commence the annual performance appraisal for this academic year.

3.4 Staff Statistics

The Division is effectively updating staff records and statistics. The table below shows the statistics of staff distribution as at November 01, 2021.

3.4.1 Existing Staff Statistics

	Male	Female	Total
Senior Members (T)	207	55	262
Senior Members (NT)	55	26	81
Senior Members (Post-Ret)	5	-	5
Total			348
Senior Staff (Permanent)	159	97	256
Senior Staff (Contract)	5	4	9
Total			265
Junior Staff (Permanent)	99	56	155
Junior Staff (Contract)	4	16	20
Total			175
Casual Staff (All Junior Staff)	14	33	47
Grand Total			835

3.4.2 Staff no longer with UENR

Mode	Number
Retirement	5
Resignation	9
End of Contract	15
Vacation of Post	1
Dismissal	2
Death	1
Total	33

4.0 Other Activities

4.1 Records Management

The Division has taken the effort to improve the manual files of staff by ensuring

that their records are up-to-date and are in good shape. The Division has created database in various areas to augment the manual records. We have also embarked on the use of google tools to back-up and secure the electronic files.

4.2 Intensified the use of electronic mail

The Division is gradually replacing the manual dispatching of letters with electronic mails. This has been more efficient and timelier.

5.0 Challenges

The Division faces some pertinent challenges that affect the effectiveness of its operations including the following;

- a. Inadequate Office Equipment
Basic Devices & Equipment like Computers, Stabilizers, Scanners, and Printers, files, cabinets, desks are inadequate.
- b. Lack of Human Resource Information Management System/software.
Currently there is no HR software available. Therefore, all kinds of data needed for the operations of the Division is compiled manually and affects the efficiency of the Division.
- c. Lack of Office Space
The Division does not have an office space of its own but shared office with other staff. This undermines the confidentiality aspect of the HR's work. Some HR staff do not have a sitting place.
- d. No imprest allocated to the Division
The Division does not have access to imprest, which makes it very difficult to cater for minor expenses incurred in operations of the Division.

6.0 Future Plans of The Division

Digitization of the Operations of the Division

As the University strives to digitize most of its activities, the Human Resources Division is in collaboration with the IT directorate to have a Human Resources Management software. This will enable the Division to offer online services.

Operationalization of the organogram of the Division

The HR Division is structured to have five subsections, however only three are in operation. It is part of the Division's plans to activate the remaining two sections.

Office Accommodation for the Division

With the support of the Vice-Chancellor, the Division will soon have adequate office space.

GENERAL ADMINISTRATION DIVISION

GENERAL ADMINISTRATION DIVISION

1.0 Introduction

The General Administration Division is an arm of the Registrar's Office and provides day-to-day administrative support to the Registrar's Office.

The Division is primarily responsible for the coordination of the University's Security Services, Cafeteria Services, providing Municipal and General Services as well as the management of University vehicles.

The Division also provides secretariat services to committees such as Welfare Services Board, Finance Committee, Budgetary Committee and other sub-committees under the Welfare Services board.

2.0 STAFF

1. Mr. David Twumasi-Ankrah	Assistant Registrar
2. Ms. Phillipa Mensah	Junior Assistant registrar
3. Ms. Gifty Adede Mensah	Senior Administrative Assistant
4. Ms. Mary Ampomaah Twum	Senior Administrative Assistant

Transport Unit

1. Mr. Ebenezer Tetteh Larnor	Ag. Head of Transport Unit
2. Mr. Daniel Otabil Koosom	Assistant Transport Officer

Safety and Security Services

1. Mr. Zakaria Abulai	Head of Security
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Cafeteria Services

1. Mr. Michael Amoah	Cafeteria Manager
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3.0 Major Activities over the Past Year

1. Food handlers certificate for all staff of the cafeteria
2. Routine check-up for staff of the cafeteria, university drivers and security officers
3. Training program for staff of the Security and Safety Services
4. 15-Seater Toyota Hiace procured for School of Management Sciences
5. Transport and Security Policies drafted and submitted to management

4.0 Future Plans of the Office

- c) Request for a well refurbished and modernized reception
- d) Request for additional vehicles for the University
- e) Request for Maintenance workshop
- f) Build stronger linkages with affiliate institutions (3BN, Road Safety Commission, DVLA, FDA, etc).

ACADEMIC AND STUDENTS' AFFAIRS DIVISION

ACADEMIC AND STUDENTS' AFFAIRS DIVISION (ASAD)

1.0 Introduction

The Academic and Students' Affairs Division (ASAD) is part of the Registrar's Offices. The overall objective of the ASAD is to ensure prospective and current students receive prompt services in relation to academic and students' affairs services. The Division is structured into units namely, Admissions, Examinations, Students' Records, and Affiliations. The various units collaborate to undertake functions delegated by the Registrar. Specifically, the Division undertakes functions such as:

- i. Advertising admissions
- ii. Receiving and processing of applications
- iii. Issuing admission letters to successful applicants.
- iv. Organising freshman orientation
- v. Coordinating university functions such as Matriculation and Congregations.
- vi. Coordinating examinations
- vii. Issuing transcripts, introductory letters, and certification.

1.1 Division and Staff

a) Senior members

- i. George Kwadwo Anane, Senior Assistant Registrar (Acting Head)
- ii. Elijah Ofori-Badu, Assistant Registrar (Examinations Unit)
- iii. David Abeam Takyi, Assistant Registrar (Admissions Unit)

b) Senior Staff

- i. Akwasi Hinneh Boateng
- ii. Edward Yaw Nyameche
- iii. Emmanuel Kombiok
- iv. Millicent Mensah
- v. Nancy Appiah Tuah

2.0 Major Activities over the Past Year

2.1 Completed Activities

- i. Processed applications leading to the admission of over 3000 students for the 2020/2021 Academic Year.
- ii. Organised Orientation programme for freshmen in the 2020/2021 Academic Year
- iii. Verified results of students who enrolled in the 2020/2021 Academic Year.

- iv. Coordinated Matriculation ceremony for freshmen of the 2020/2021 Academic Year.
- iv. Enrolled final year students for the 2021/2022 National Service Year.

2.2 Ongoing Activities

The following activities are ongoing:

- i. Receiving and processing of applications for the 2021/2022 Academic Year.
- ii. Coordinating planning activities for the 6th Congregation
- iii. Outreach activities for admissions

3.0 Other Activities

As part of continuous professional development programmes, the Division organised the following:

- i. A 1-day Seminar for Staff Involved in Students' Affairs Practice at UENR
- ii. A 1-day Seminar for Newly appointed Heads of Departments
- iii. In-house training for staff at the Academic and Students' Affairs Division on the effective use of the Google Workstation.

Staff of the Division also participated in the following programmes:

- i. A 1-day training programme for Chief, Principal, Senior and Administrative Assistants on Tools for Effective Workflow.
- ii. A 2-day Programme for Staff in the Registrar's Offices on how to become a World Class Administrator.

The Division held a seminar on Career Guidance and Counselling for final year students of the Odumasekan Senior High School to help the students to make informed decisions on selection of programmes, career opportunities and options available to them.

4.0 Challenges

The Division currently faces acute challenges relating to appropriate and adequate office space for staff to operate at optimum levels. This is growing worse as student numbers keep increasing without a corresponding expansion in office space for staff. The Division lacks appropriate technologies/software for managing admissions, examination results, and students' records.

5.0 Future Plans of the Division

The Acting Head of the Division has presented a proposal to the Academic Board for the restructuring of the Academic and Students' Affairs Division into the Academic Affairs Division with various units to ensure efficiency in service delivery.

The Division is planning to introduce technologies/software that improve academic affairs service delivery.

UNIVERSITY RELATIONS OFFICE (URO)

UNIVERSITY RELATIONS OFFICE (URO)

1.0 Introduction

The University Relations Office (URO), as an offshoot of the Registrar's Offices, is the bellwether of the University in its internal and external communication. The office provides strategies with respect to stakeholder engagements, policy options on public relations matters and protocol services, as well as coordinates all events, ceremonies and programmes of the University. The vision of the URO is to create a global visibility for the University through stakeholder relationship.

The University Relations Office has three units namely: Public Relations and Protocol; Publication and Documentation; and Media Relations. These sections work together to achieve the common goal of projecting the University in a positive light to all stakeholders.

Over the period, the various sections have embarked on a series of activities making the office function efficiently and effectively. Some of the activities are highlighted under the following units.

2.0. Staff

1. Mr. Hayford Asare	Senior Assistant Registrar (Ag. Head)
2. Miss Martina Asantewaa Anane	Junior Assistant Registrar
3. Ms. Abigail Yeboah-Kyereh	Junior Assistant Registrar
4. Mr. Benjamin Gyamera	Junior Assistant Registrar
5. Mr. Charles Obrako Sarpong	Principal Administrative Assistant
6. Miss Jennifer Naa Jaaga	Senior Administrative Assistant
7. Mr. Theophilus Essiam	Senior Administrative Assistant
8. Mr. Kenneth A. Quayson	Senior Administrative Assistant
9. Mr. Emmanuel Appiah	Senior Administrative Assistant
10. Mr. Harry Hope Korda	Senior Administrative Assistant
11. Mr. Patrick Nkansa-Kyerematen	Senior Administrative Assistant

GREENA FM

1. Mr. James Kofi Agyei-Bohyen Boatin	Senior Administrative Assistant
2. Ms. Rhoda K. Boateng	Radio Presenter
3. Mr. Raymond Mensah	Senior Technician
4. Mr. Samuel Apraku	Tradesman Grade I
5. Mr. Enock Ofori Larbi	Senior Administrative Assistant

3.0 Major Activities over the Past Year

a) Completed Activities

PUBLIC RELATIONS AND PROTOCOL

1. Orientation for newly recruited staff of the University Relations Office.
2. Participated and coordinated university events such as the
 - a. Investiture of the Vice-Chancellor in November 2020
 - b. 8th Congregation held in November 2020
 - c. Online orientation for first years in collaboration with Academic and Students' Affairs for the 2020/2021 academic year.
 - d. Launch of the Green Ghana project in Bono Region
 - e. Assisted in the organization and execution of the STEM festival 2021.

PUBLICATIONS AND DOCUMENTATION

3. Present at special events such as signing of MoUs, management meetings, and stakeholders' engagements.
4. Publication of university events on the University website
5. Publication of policies such as the Criteria for Appointment and Promotion of Senior Members and the University Statutes.
6. Alumni engagement
7. The UENR This Week Bulletin
8. Publishing of staff list in the Chronicle
9. Printing of university souvenirs (Diaries, Calendars, Notepads, etc)
10. Designed University letterhead for all Directorates, Schools, and Departments.
11. Designed other communicative documents for the University.

MEDIA RELATIONS

- Re-designing of the University Website and designing sub-domain websites for all Schools of the University.
- Effective management of the University's social media handles
- Placed advertisements on print media (Daily Graphic).

The above activities undertaken by the office have purposefully achieved the goals and objectives set by the office.

b) Ongoing Activities

- I. Procurement of Diaries, Calendars and Notepads
- II. Procurement of office equipment
- III. Construction of an office for staff
- IV. Preparation for the 6th Congregation (Virtual)
- V. Publication and arrangement for a Public Lecture prior to congregation

VI. Publicity and coverage of the 10th Anniversary Ceremony

4.0 Challenges

- I. Inadequate office space for staff
- II. Inadequate equipment for effective operation
- III. Unstable internet connection at the office

6.0. Future Plans of The Office

- I. To upgrade and increase audience patronage of the Greena FM through diversified and socially impactful programmes.
- II. To help establish and optimize patronage of UENR online TV.
- III. To ensure a bimonthly or quarterly publication of the Chronicler to disseminate the major decisions of Council, Academic Board and Management.

LEGAL OFFICE DIVISION

LEGAL OFFICE DIVISION

1.0 Introduction

The Legal Office Division under the Registrar's Office was established to provide legal services to the University. Statute 77(4) outlines the functions of the Legal Office:

- a) Provide legal advice and guidance;
- b) Developing and implementing mechanisms for internal dispute resolution;
- c) Prosecution of cases in courts and litigation management;
- d) Documentation, preparation and drafting of legal documents;
- e) Ensuring compliance with established Acts of Parliament, statutes, general rules and regulations and relevant laws of the Republic of Ghana;
- f) Other related matters as shall be determined by the Council and or the Vice-Chancellor.

2.0 Division and Staff

- | | |
|---------------------------|---------------------------------|
| 1. Jonathan Odartey, Esq | Assistant Registrar (Ag. Head) |
| 2. Joy Sarkodie-Addo, Esq | Junior Assistant Registrar |
| 3. Ms. Linda Boadu | Senior Administrative Assistant |

3.0 Major Activities over the Past Year

c) Completed Activities

The office has reviewed a number of MoUs and Agreements to ensure they are conformed to national laws and policies and also are in the interest of UENR. Same have been executed between the parties, for example, Innomodstel and Asanduff Agreements for the building of hostels to ease accommodation challenges of students. The office has also drafted MoUs and Agreements.

The office has submitted legal opinions to management such as the Appointment of Senior Members to the effect that it is the University Council which should appoint Senior Members and gave legal advice on motion for interlocutory injunction also to the effect that the University halts the process for appointing a new Pro Vice Chancellor till the determination of the motion.

The Ag. Head of the Division was a member of the Ebizframe, Examination Malpractice, Auditorium Investigative and other committees.

d) Ongoing Activities

The office has teamed up with the external solicitors to defend the University's legal issue ongoing at the court.

The Ag. Head of the Division is a member of the Disciplinary Committee for Senior Members and gives guidance to it as and when necessary.

The office reviews MOUs and Agreements as and when they are submitted for review.

c) Other Activities

- » **Workshops:** The office provided legal education for members of staff at the ROWS workshop held in September, 2021 and the ongoing Training Workshop for Security Personnel.
- » **Seminars:** The Ag. Head, Junior Assistant Registrar and Senior Administrative Assistant attended seminars organized by the Human Resources Division of the University.

4.0 Challenges

Lack of office space and the necessary logistics.

5.0 Future Plans of the Division

1. To get a suitable office fully equipped to enable the Division to perform its functions effectively.
2. Training of staff of the Division to provide further skills and knowledge which will improve upon work output.

SECURITY SERVICES UNIT

SECURITY SERVICES UNIT

1.0 Introduction

The Security Services Unit was established as part of the University of Energy and Natural Resources (UENR) by an Act of Parliament, Act 830, (2011) on December 31, 2011. The initial staffing was made up of a security officer who served as the supervisor of the Unit and eighteen security guards on the Sunyani Main Campus. The University of Energy and Natural Resources like any other Public funded University, places much emphasis on security within the campus premises. The University has security personnel stationed at the main entrance and various vantage points within the main campus and its external campuses. The security personnel were assigned the responsibility of protecting UENR's staff, students and property.

Security personnel in the University of Energy and Natural Resources also perform such functions as interacting positively with university community members daily and assist members in identifying potential safety threats and or criminals, conduct. Initial investigations of reported crimes and incidents occurring on campus, constantly patrol the campus and other university-owned properties, investigate traffic incidents within the boundaries of the university campus, keep in constant evaluation and implementation of effective access control systems and respond to and manage all emergencies and disasters on campus.

The University has grown considerably extending its borders across the Bono region with campuses at Dormaa Ahenkro, Kenyasi and Nsoatre (yet to be operational) since it was established, but the Security Services Unit has not kept pace with the growth of the University. Security personnel in the various campuses have been operating independently with some amount of challenges of reporting to the main campus. Command and Control has never been centralized. Currently the University is not taking advantage of modern trends in security operations, such as the use of technology to compensate the declining numbers in personnel and the use of mobility to dominate space rather than large numbers of personnel.

The appointment of a Head of Security, the rank of Senior Assistant Registrar (SAR) and a Junior Assistant Registrar (JAR) in the security services unit in September 2021 should pave the way for the upgrading of the Security services unit to a Directorate of Security Services. This will allow the various units that is expected to be operational to provide the needed support services to ensure the effective delivery of security services.

2.0 Staff

The following are the staff in the Security Services Unit;

Senior Members

Mr. Abdulai Zakaria	Head of Security
Mr. Osei Owusu-Ansah	Jnr. Assistant Registrar

Campus	Senior Staff	Junior staff
Sunyani	12	46
Dormaa	0	8
Kenyasi	0	1
Total	12	55

3.0 Major Activities Over the Past Year

The services provided by the unit include night patrol and escort to reduce the rate of armed robbery and attacks on staff and students, providing security support services for students and staff, as well as ensuring complete safety and security for all members of the university and UENR'S property.

With the help and support of Management and SRC, a police post was completed and handed over in April 2021 to beef up security on campus. The security in collaboration with the Odomase District Police Command conducted night patrols with a dedication pick-up released by the university and a salon police patrol vehicle of the Odomase headquarters to curtail the rising crime incidents in and around the university community.

All student-related programs including SRC week celebration, akwaaba night, SRC elections, annual students employability camp, public speaking and debate competition that brought students from all public universities in Ghana, students matriculation, virtual orientation programs and the 5th virtual congregation were all supported successfully with no adverse incidents even though some of them, especially the SRC elections were not without tensions.

4.0 Ongoing Activities

Preparation and planning for the 6th virtual congregation, the tenth-year anniversary celebration and training programs for the security personnel on all campuses are ongoing. Preparation of the security policy document is also being considered by the security and safety committee.

WORKSHOPS/CONFERENCES

A member of the security services unit attended the following workshop/conference

- » A-three-day ultimate conference held via zoom in August 2021
- » Training workshop for newly appointed registrars and heads of administrative Divisions/Units/Departments

5.0 Challenges

Challenges of the unit includes inadequate logistics and security infrastructure, nonexistence of a formal organogram for the security services, absence of security policy guidelines, inadequate staff and lack of appropriate security orientation for both students and staff.

6.0 Future Plans

A proposal would be drafted to propose an appropriate organogram for the Security Services. A proposal to improve the security infrastructure of UENR which includes perimeter fencing, installation of closed circuit television systems (CCTV), improvement in the security communication systems, adopting new working strategies to avert shortages of personnel deployment issues by modifying the shift system of the security, and work towards improving the staff numbers to respond to demand for security services. The unit plans to organize training workshops for both staff and students.

GROUNDS, GARDENS AND BEAUTIFICATION SECTION

GROUNDS, GARDENS AND BEAUTIFICATION SECTION

1.0 Introduction

The University campus landscape influences the first impression one gets of the culture and quality of the Institution. It is also one of the most influencing factors a prospective student considers in selecting where to attend a university. Additionally, the quality of the landscape contributes to fostering lasting relationships between our students and the university. It invariably contributes immensely to a student's academic experience by providing places to learn, live, work, and recreate. The open spaces on campus provide a sense of direction by integrating and organizing different places and elements thereby creating visual surprises. Many creative and innovative ideas occur in outdoor environments, away from formal classes and discussions.

The natural scenery and a relaxing atmosphere in open spaces encourage impromptu meetings and discussions, and provide fresh air for both stressed scholars and administrators. Students are collaborating more and more and outdoor spaces provide yet another area on campus to do so. The landscape of the university, together with the buildings and other facilities are challenged daily with creating a safe, healthy, green and aesthetically pleasing environment for the university community. This should be an experience that is impactful and rich in memories. The Grounds, Gardens and Beautification Section (GGBS) is committed to this experience. The creation of the GGBS could not have come at any other time than now as UENR embarks a historic transformation in its infrastructural development under the leadership of the Vice-Chancellor, Prof. Elvis Asare-Bediako. GGBS supports this vision and wishes to contribute our quota to the realization of the broader vision of UENR.

Vision

A world-class green University campus, visually aesthetic, functionally interactive and naturally sustainable.

Mission

To develop and sustainably maintain the campus landscape so as to provide the requisite ambience for an interactive teaching, learning and research, whilst enhancing the wellbeing of the students, staff and clients.

2.0 Section and Staff

Grounds, gardens and beautification section

Management staff- 3

Permanent Junior Staff- 12

Casuals- 14

3.0 Major Activities over the Past year

a) Completed Activities

- » Training workshop for junior staff
- » Organized Greening Ghana and collaboration with school of natural resources and regional forestry department
- » Development of new landscape around the old auditorium.

b) Ongoing Activities

- » Landscape development of the Eye of God entrance
- » Development of Greening UNER fraternity to embark of campus beautification programme and the Green Bono project
- » Development of plant nursery to increase the plant stock for internal landscape projects and sales to the public as part of Internally Generated Fund (IGF)
- » Development of UNER integrated Eco-Park
- » Development of Energy maze
- » Development of Campus directional map

Other Activities

- » Workshop
- » Conferences
- » Seminars

4.0 Challenges

- » Inadequate staff and equipments
- » Vehicle to convey materials from site to site

5.0 Future Plans of the Office/Directorate/Division

- » Completion of the Eye of God Landscaping
- » Creation of more relaxation areas on campus for students and staff
- » Development of landscape for the ongoing project
- » Development of the Eco-Park
- » Training of staff

SPORTS AND RECREATIONAL DIRECTORATE

SPORTS AND RECREATION DIRECTORATE

1.0 Introduction

The Directorate was established in accordance with Statute 33 of the Statute of the University of Energy and Natural Resources, Sunyani. Currently, the Sports and Recreation Directorate has a staff strength of five coaches and a secretary. The Sports and Recreation Directorate serve as the main body with direct responsibility for overseeing the overall development and management of sports and recreation within the University. The Directorate is responsible for:

- a) Development of sports and related activities;
- b) Organization of sporting events;
- c) Liaison with external sports organizations;
- d) Advising the Academic Board on matters relating to the award of academic credit for student participation in sports;
- e) Holding sporting clinics for the members of the University;
- f) Representing the University on external sporting bodies;
- g) Preparation of teams for sporting events

2.0 Staff

- | | |
|-----------------------|-----------------------------------|
| 1. Ebenezer K. Armoh | Ag. Director |
| 2. Bosomtwe Simon | Coach Football/ Basic School |
| 3. Asare Abene Alfred | Coach Basketball |
| 4. Adofo Mireku Enoch | Coach Athletics |
| 5. David Aryeteey | Coach, in charge of Dormaa Campus |
| 6. Kate Afram | Secretary |

3.0 Major Activities over the Past Year

- i. Sent proposal to National Sports Authority to construct sports complex at UENR
- ii. Procured equipment for training e.g. landing foam, starting blocks, jerseys, table tennis board etc.,
- iii. Scouted twenty-one (21) athletes in various sports disciplines for admission
- iv. Participated in Main GUSA Games at UG and placed 6th out of 11 institutions
- v. Recruitment of three (3) new staff to support Sunyani and Dormaa campuses
- vi. Participated in Bono Region Cross Country and placed 5th 7th 13th, 14th 15th and 32nd out of 90 competitors.

4. Ongoing Activities of the Directorate

- i. Proposal to National Sports Authority to construction AstroTurf
- ii. Proposal to University Management to clear and fence site meant for sports complex

- iii. Preparation to participation in 2021/2022 GUSA Cross Country to be held at UHAS
- iv. Preparation to participation in 2022 Main GUSA Games to be held at KNUST in April- May, 2022.
- v. Advising Management on Scholarship package for scouted and continuous students' athletes

5. Other Activities of the Directorate

1. Attended workshop organised by Registrar's office on:
 - Becoming World Class University Administrator
 - Understanding University Statute
 - Financial Management by University Administrator
2. Athletics Coach to attend World Athletics Level 1 Coaching Course slated for 22nd Nov. to 3rd Dec., 2021 in Kumasi

6. Challenges of the Directorate

1. Office space to accommodate staff
2. Training facilities for various sports disciplines e.g. basketball court, volleyball court, handball court etc.
3. How to compensate athlete who do sports in terms of GPA
4. Athletes' Retention
5. Funding for internal sports programmes such as Inter Hall (inter-schools) athletics and games and staff games, etc.

7. Future Plans of the Directorate

1. Infrastructure development e.g. football field, athletic oval, basketball court, volleyball court, gym etc.
2. Recruiting at least 10 talented athletes to help win medals and trophies for UENR
3. Entering into partnership agreement with sister universities abroad for visibility
4. Participating in external sports competitions such as WAUG, FASU, Africa Olympics
5. Organize workshop on First aid, Aging and Exercise for athletes, staff in the University
6. Assist coaches to attend workshop on coaching in football, athletics, etc.
7. Seek sponsorship for gymnasium construction to improve the health of staff and students

UNIVERSITY HEALTH SERVICES DIRECTORATE

UNIVERSITY HEALTH SERVICES DIRECTORATE

1.0 Introduction

The University Health Services Directorate has the prime mandate to provide health care to students, staff and their relatives as well as provide regular health extension services to the surrounding communities, in the area of curative i.e. general medicine, minor surgical procedures, Child health, Obstetrics/Gynecology and preventive i.e. Health promotion and Family planning/ Immunization.

2.0 Staff

The University Health Services Directorate has the under listed Units;

- » The Administration
- » Pharmacy
- » Nursing
- » O.P.D
- » Laboratory
- » 24hours Male/Female Ward
- » Record Unit

The Directorate has a staff trend of 38 out of which 25 are nurses on secondment from Ghana Health Service;

Dr. Solomon Fofie	Ag. Director/Snr Medical Officer
Ms. Augusta Adjei-Mensah	Pharmacist
Ms. Dorothy Agyenim Boateng	Clinic Administrator
Ms. Lois Azupwah	Principal Nursing Officer
Ms. Dorcas Afriyie-Takyi	Senior Physician Assistant
Ms. Jessica Awuah-Poku	Snr Biostatistician
Mr. Wiafe Prince	Pharmacy Technician
Ms. Ophelia Kissiwaa	Senior Administrative Assistant
Ms. Eshun Kwao Betty	Senior Health Superintendent

3.0 Major Activities over the Past Year

1. Completed Activities

- » Medical Examination for fresh students has been successfully carried out
- » Medical examination for new staff has also been done
- » Covid-19 vaccination for staff and students
- » Operationalization of the ward
- » Covid-19 response plan for the University
- » Covid-19 preventive protocol i.e. pre-triaging at the Clinic

- » HeFRA accreditation
- » QUASI registration
- » Registration with Bono Regional Medical Stores (GHS) for drugs supplied

2. Ongoing Activities

- ⊗ Medical Examination for new employees on-going
- ⊗ Health Insurance Accreditation
- ⊗ Providing home visits

3. Other Activities

Workshops

- ⊗ Infections prevention and control
- ⊗ Health promotion
- ⊗ Training on Suturing techniques
- ⊗ Health talk on breast Cancer on world breast cancer day

Conferences

- ⊗ Report writing
- ⊗ Ghana Health Service Code of Conduct and Disciplinary Procedures

4.0 Challenges

- ⊗ Withdrawal of Nurses by the Ghana Health Service
- ⊗ Lack of effective Laboratory Services at the Clinic
- ⊗ Lack of data on students, staff and their relatives
- ⊗ Intermittent power outages at the clinic
- ⊗ Challenges in identifying Student from other clients who come from outside to seek medical care at the school Clinic
- ⊗ Working space is also a challenge

5.0 Future Plans of the Office/Directorate/Division/

- ⊗ Processes are underway for the registration of the clinic with the National Health Insurance Agency.
- ⊗ Ensure quality assurance in the management of clients
- ⊗ Providing Maternal Health Care services
- ⊗ Expansion of services to include specialist care (Obstetrics/Gynecology, Child Health Surgery and Internal Medicine

INFORMATION TECHNOLOGY DIRECTORATE (ITD)

INFORMATION TECHNOLOGY DIRECTORATE (ITD)

INTRODUCTION

The IT Directorate (ITD) is mandated to provide various ICT related services to the University community. This report will highlight the services being undertaken and others yet to be rolled out from 2022.

DIRECTORATE AND STAFF

The Directorate has three Departments or Divisions; Software Application Development, Network Administration, Systems Administration and Maintenance. There are currently 18 permanent staff and 3 staff on secondment to other Directorates/Departments.

MAJOR ACTIVITIES OVER THE PAST YEAR (2021)

Completed and On-going Projects

A. POLICIES

At the beginning of the second quarter of the year, the ITD presented to the newly constituted IT Committee of the University, a set of policies on the usage of various IT services for their review and eventual approval by Academic Board/University Council. The review exercise is yet to be completed.

Once the draft policies are reviewed and approved, a series of training sessions will be undertaken to expose various stakeholders of the University community on the “dos” and “don’ts” on the usage of various IT devices, appliances and services at the University. The stakeholders will include faculty, staff and students.

B. SOFTWARE APPLICATIONS

A new student management application is being developed to replace the existing application. This new application will have modules for admission, registration, assessment (continuous and terminal), mounting of courses, selection of courses, uploading of results, checking of results, transcripts preparation and certificates generation, fees payments among others. This new application will be more robust, tighter (with fewer human interventions) and secured. It is the expectation that, the new application will be deployed together with its complete set of documentation by the first week of December 2021.

DOCUMENTS MANAGEMENT SYSTEM DUBBED “THE OFFICE”

A new system is being developed for the administration of office Memos and Letters. This application will take care of all internal correspondences of the offices focusing on the inbound and outbound Memos, cabinet/ file management, quick and easy retrieval of stored memos , a search engine customized to suit a particular office, a module for calendar or diary management and meeting management among others. The application will be linked to the University’s SMS gateway system for instant prompts on smart phones for all memos sent to individual officers.

The credentials for the application will be the official email addresses and the purpose is to enable officer’s work anywhere and anytime. It is expected that, a successful deployment of this application will lead to a considerable reduction in the budget for the University’s stationery and printing costs. Alpha testing has been done for some selected administrative staff.

Subject to the provision of extra storage and security facilities (request for their provision have been made), the new application will be rolled out by the end of the year. In the meantime, continuous testing is being done in order to make it user-friendly.

STUDENTS MANAGEMENT SYSTEM FOR THE BASIC SCHOOL

This new application to assist in the management of the Basic School is ready to be deployed as soon as testing is completed. It is expected that, this will be completed by the end of November 2021.

AUTOMATION OF PAYSLIPS

The current pay slips are being automated. After the exercise which is expected to be completed by the end of November, staff will get their monthly pay slips directly from their corporate email addresses.

INTEGRATED HUMAN RESOURCES AND FINANCIAL MANAGEMENT SYSTEMS

Management has directed the Directorate to develop and deploy an in-house integrated HR and Financial Management system. Preparatory works are underway to commence this work from the beginning of 2022.

C NETWORK ADMINISTRATION, SYSTEMS ADMINISTRATION AND MAINTENANCE

All the aforementioned services can only be successfully implemented if there is the availability of adequate and regular supply of internet bandwidth and Power. To this end, one of our primary ISP (Vodafone) has increased its present supply of bandwidth from 2 STM1 (about 310 Mbps) to 4 STM (about 620 Mbps) for the same price. An agreement to this effect, has been signed between the University and the ISP. Additional 2 STM1 bandwidth of Internet data are being arranged with another ISP to serve as a backup to what we already have.

The voice and data communication generation from Vodafone (our main supplier of Internet bandwidth), is being changed from the current 3G to 4G. A mast to host the necessary antennae has been mounted.

Management has also procured a 100KVA generator set to serve as a power backup for the Directorate is computing facilities. Installation works are yet to commence. Our systems and network infrastructure were re-engineered and reconfigured after two staff were dismissed, this is to help mitigate and sustain any cyber-attack and intrusion.

Other items that need to be put in place for the successful implementation of the aforementioned software applications, includes the provision of anti-virus tools (this is being procured) and deployment of back up facilities (arrangement is underway to get the computing facilities at the KNUST to serve as a Disaster Recovery site). All staff have also been directed to do a regular back up (every Friday). A memo to this effect has been sent to all staff.

OTHER ACTIVITIES

- **Workshops**

None of the staff at the Directorate attended any workshop in the review year

- **Conferences**

Three of the staff including the Director attended the GARNET annual conference at the University of Cape Coast during the year.

- **Seminars**

None of the staff at the Directorate attended any seminar in the review year

CHALLENGES

1. Inadequate staffing especially in the areas of Network and Systems Administrators (need 4 additional staff); 2 to replace the 2 staff who were dismissed earlier on in the year and another two for the yet to be opened Kenyasi campus).
2. The Directorate also requires the services of two (2) Web Designers and two (2) Web Developers for secondment to the URO, IRO and the Quality Assurance Directorate.
3. Lack of device redundancy as a result, some devices are malfunctioning in the midst of some difficulties in procuring their replacement (example, is the difficulties in getting a Layer3 Switch to fully restore internet connectivity (LAN and WiFi) on campus).
4. Single point of failure for Internet services, there is only one fiber line that provide the whole university community with internet and if there is an issue with the fiber cable there is no alternative backup for internet connection.
5. Finally, the Directorate requires the services of two (2) software developers whose main task will be to write systems and user documentation for the various in-house applications that are being developed and yet to be developed.

FUTURE PLANS OF THE DIRECTORATE

A. OFFICE BUILDING FACILITY

The current building housing the offices and equipment for the Directorate is NOT FIT FOR PURPOSE.

To address this in the medium term, a request has been made to the Works Directorate for the provision of appropriate architectural drawings including a costed BoQ.

Management's approval will soon be sought for the construction of same with the assistance of industry players through sponsorship after the appropriate arrangement has been done.

Again, with the surge in students population coupled with the increase in the number of courses, the University needs to migrate its present computing facilities from a basic Server system to at least a Tier-2 Data Center.

B. The World Bank, through the eTransform Project of the Ministry of Communications and Digitalization has engaged a consultant to assist the University replace its entire IT network infrastructure as part of the 'Campus Network' Project. A new architectural design for the network has been completed and approved.

Subject to the receipt of a 'no objection' clause from the World Bank, the Consultant will prepare various documentation including bidding documents for the selection of a Contractor to execute the project.

It is envisaged that, the entire implementation of this project, including the training of the relevant IT Staff of the University will be completed by September 2022.

The provision of the building complex plus the deployment of the Data Center is a sine-quo- non for any modern and emerging university and will be pursued vigorously.

FINANCE DIRECTORATE

FINANCE DIRECTORATE

1.0 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.

2.0 STAFF

Departments and Staff

The Directorate fulfills the above responsibilities through the Treasury Division, Payroll, Budget & Management Accounting Division and the Financial Accounting Division.

The Directorate has Eight (8) Senior Members, Twenty-five (25) Senior Staff and One (1) Junior Staff.

The Senior Members are:

Albert Banan Abdulai, FCCA, ICA (GH)	Director of Finance
Paul Nana-Nketiah: ACCA, ICA (GH)	Deputy Director of Finance
Augustine Opoku-Mensah: ICA (GH),	Senior Accountant
Stephen Yaw Ntiamoah, CA, CPFA: ICA (GH)	Senior Accountant
Emmanuel Asare: CIFIA (GH), ICA (GH),	Accountant
Victor Kojo Bosea: ICA (GH),	Accountant
Patrick Kwame Basuah ICA (GH),	Assistant Accountant
Enoch Kyeremeh	Assistant Accountant

3.0 Major Activities over the Past Year

a) Completed Activities

The Directorate completed the 2019 and 2020 financial statements of the University and academic projects and got them audited.

The Directorate in conjunction with the Internal Audit Directorate developed a Risk Management Framework for the Audit Committee, which recommended it to Council, and it was approved.

b) Ongoing Activities

The Directorate is developing its own Financial Regulations within the national financial regulatory framework for financial management of the University.

4.0 Conferences/Workshops/Seminars

During the period from December 2020 to November 2021, staff of the Directorate attended the following Conferences/Workshops/Seminars:

1. International Public Sector Accounting Standards (IPSAS), 18th – 22nd January, 2021 organized by GTEC
2. ACE Impact Capacity Building Workshop, February 23rd -26th 2021
3. Anti-Monetary Laundering Governance, Risk and Compliance, organized by Bank of Ghana, 14th April, 2021
4. Workshop on IFRS organized by Association of Rural Banks, 23rd – 24th April, 2021
5. The Company's Act for Rural Banks organized by Millennium Financial Centre, 15th May, 2021
6. 5th World Bank ACE Impact Project Regional Workshop, 24th-28th May 2021
7. ICAG Annual Conference and AGM, 2020 Accountants' Conference, 23rd - 29th May, 2021
8. Training Workshop for Suppliers, Contractors, Technical Service Providers and Consultants on tenders on Wednesday, July 7, 2021
9. ACE Impact Project Capacity Building Workshop, September 20th – 25th September, 2021
10. Orientation Training for Audit Committee Members, 29-30 September 2021
11. Enhancing Public Sector Accountability in Africa through Accrual Reporting, 30th September, 2021
12. 2022-2025 Medium -Term Budget Hearing organized by GTEC, 4th October, 2021
13. Induction Ceremony into ICAG Membership, 7th – 8th October, 2021,
14. Anti-Monetary Laundering and Combating Financial Terrorism, organized by Association of Rural Banks, 24th October, 2021
15. 6th World Bank ACE Impact Project Regional Workshop, 6th – 10th November 2021
16. Training workshop for the University Security Personnel, 15th -18th November, 2021

17. Training Workshop for newly appointed Senior Members on GUSSS
18. Workshop for newly appointed Heads of Departments, Basic Financial Procedures in UENR

5.0 Challenges

One of the challenges of the Directorate is inadequate office space for staff. The Directorate also faces the challenge of inadequate staff to manage the finances of the Schools and Self-Accounting Units.

Another challenge of the Directorate is the manual transaction-processing regime, which was occasioned by the crash of the server on which the Ebizframe ERP software run, coupled with other causes.

Future plans

The Directorate plans:

- To decentralize the Financial Administration of the University by recruiting finance staff (when there is financial clearance) for Schools and Self Accounting Units (Basic Schools, University Health Services, etc.) to be responsible for budget preparation, preparation of financial statements and treasury management.
- To have the Ebizframe ERP software (with modules for finance, budgeting & forecasting, fixed assets, materials management, and human capital

Management) re-activated to ensure automation of financial transaction processing and timely fiduciary reporting.

The Directorate intends to migrate the financial transactions of the University onto the Government Accounting Software, the Government Integrated Financial & Management Information System (GIFMIS). This will be executed in parallel with the Ebizframe ERP.

Plans are also in the offing to train the newly recruited staff of the Directorate on various aspects of financial management.

The Directorate will organize annual training programmes for its staff to always be abreast with contemporary issues in financial management.

The Directorate also plans to develop Risk Registers within the guidelines of the University Risk Management Framework for managing risks within the Finance Directorate.

INTERNAL AUDIT DIRECTORATE

INTERNAL AUDIT DIRECTORATE

1.0 Introduction

The Internal Audit Agency Act of 2003 (Act 658) section 16(i) mandates every public institution to set up their own internal audit units. The University of Energy and Natural Resources Act 830 of 2011 Section 30(1) and (2) also makes it compulsory for the establishment of an Internal Audit Unit (IAU).

The IAU is responsible to the Vice - Chancellor and the University Governing Council and acts to help in the effectiveness of systems put in place to mitigate risk, control and governance processes and arrangements to promote value for money, i.e., economy, efficiency and effectiveness in the university's operations.

To be able to function effectively, the IAU has been organized into four (4) main areas; Financial Audit Unit, Performance Audit and Investigations Unit, Compliance Audits Unit and Information Technology Audits Unit

2.0 Staff

1. Kodwo Boakye Egyin	Ag. Director, CA (Gh)
2. Rosina Addo Asamoah	Internal Auditor, CA (Gh)
3. Richard Twum Barimah	Assistant Internal Auditor, CA (Gh)
4. Bridget Agyemang	Senior Auditing Assistant, ACCA,
5. Vera Doyo Fafa Setsoafia	Principal Auditing Assistant
6. Kelvin Kubi Appiah	Senior Auditing Assistant
7. Evans Sakyi Ampah	Senior Auditing Assistant
8. Lydia Obiri	Senior Auditing Assistant
9. Wisdom Adusei	Senior Auditing Assistant, CA (Gh)
10. Wonder Dzidzormenu Kweku	Senior Auditing Assistant, ACCA,
11. Ruth Dufie Amoah	Senior Administrative Assistant

3.0 Activities over the Past Year included but not limited to the following:

- » Development of Internal Audit Charter and Internal Audit Policies and Procedures Manual
- » Examination of transactions for accuracy and compliance with institutional policies.
- » Evaluation of financial and operational procedures for adequate and effective internal controls and safeguarding of assets.
- » Evaluation of the economical and efficient use of resources.
- » Liaison with external auditors.

Conference/Workshops/Seminars

- » Some members of staff of the Internal Audit Directorate attended the following Conferences, Workshops and Seminars during the year under review; A three-day training programme on Procurement in Practice organized by Ghana Supply Company Limited at Coconut Grove Hotel Ridge, Accra, Ghana.
- » A two-day Accountants' Conference dubbed "Business Continuity and Sustainable Development: the Role of Technology" organized by Institute of Chartered Accountants, Ghana at Calvary Charismatic Centre, Kumasi.
- » A five-day training course on International Public Sector Accounting Standards (IPSAS) organized by Ghana Tertiary Education Commission (GTEC) and
- » Price waterhouse coppers, (PwC) Business School at Mensvic Hotel, Accra, Ghana.
- » A two-day training in Public Financial Management Act and Regulations organized by Scholarship Secretariat and Redric Consulting at Sunset Hotel, Kumasi, Ghana.

4.0 Challenges

The major challenge that the Internal Audit Directorate is facing now is office space to enable the directorate facilitate effectively its working activities.

5.0 Future Plans

- » Evaluation and monitoring of the Information Technology Directorate's system of internal control to ensure adequate security and controls related to hardware, software, data and operating personnel; and to ensure retrieval of necessary data for audit purposes.
- » Determination of the level of compliance with required internal policies and procedures, and government regulations; and appraisal of the effectiveness and appropriateness of internal policies and procedures under current conditions.
- » Program performance evaluation.
- » Continue to liaise with external auditors in matters related to the audit of the University.
- » Full implementation of Risk Based Internal Auditing

WORKS AND PHYSICAL DEVELOPMENT DIRECTORATE

WORKS AND PHYSICAL DEVELOPMENT DIRECTORATE

Introduction

The Works and Physical Development Directorate is in charge of the development and maintenance of the physical infrastructure of the University and the provision of essential services for the benefit of the University Community. This mandate is fulfilled through the collective effort and shared responsibilities of a team of professionals in the built environment, technical staff and junior staff.

Departments and Staff

The Directorate is made up of the following departments:

1. Works and Physical Development
2. Maintenance Unit and
3. Estate Organization

The Estate Organization is primarily responsible for the Management of the University's landed properties with major operations including space allocation, facilities Management, environmental, sanitation Management and property evaluation.

Staff

The mandate of the Directorate is fulfilled through a team of professionals in the built environment, technical staff and Junior Staff.

Ing. Christian Yeboah Nuako	Director
Arc. C. Papa Nii Tetteh Achamfuo-Yeboah	Senior Architect
Arc. Lawrence Puntanah Tibiru,	Senior. Architect
Surv. Margaret Atta-Poku	Snr. Quantity Surveyor
Surv. Matthew Arhin	Quantity Surveyor
Ing. John Awotwi	Structural Engineer
Surv. Kwaku Obeng Mireku, Esq.	Head, Estate Organization
Engr. Adjoa Agyinba Tetteh-Gyamera	Asst. Project Manager
Arc. Kwaku Safroadu Amankwah	Architect
Surv. Maxwell Ofori, FMP	Estate Officer
Millicent Daghar	Junior Assistant Registrar

Major Activities over the Past Year

a. Completed Projects

For the past year, only three (3) projects funded with Internally Generated Funds (IGF) were completed. They are the 2 No. (2-in-1) Pavilion structures, which were constructed to ease the Lecture Rooms deficits and the Police Post co-funded by the 2019/2020 UENR SRC.

During the year under review, other key activities were undertaken including the following:

- i. The additional 3.2-acre land acquired adjacent to the Sunyani campus has been registered
- ii. Registration of the lands at the Sunyani and Nsoatre Campuses are on-going

b. Ongoing Projects

- There are eight (8) GETFund ongoing projects at various stages of completion.
- An Auditorium project of about 3000 seating capacity which is currently being funded by the Bank of Ghana is expected to be completed by the last quarter of 2022.
- It is anticipated that the Syndicate Hall I will be completed and handed over before the next academic year commences to ease the Lecture Room deficits.
- GNPC funded project, the construction of Applications Laboratory Phase II is expected to be completed before the first quarter of 2022.

Other Activities

During the period under review, the staff of the directorate attended the following conferences/workshops/seminars:

- Certificate training for Cleaners and Labourers
- Fire prevention training for Hall Assistants
- Sensitization Workshop for Suppliers, Contractors, Service Providers and Consultants held on July 7th, 2021 at Tyco City Hotel, Sunyani.
- Infrastructure Forum for Tertiary Education held on November 23, 2021 at the Great Hall, KNUST-Kumasi by Ghana Tertiary Education Commission (GTEC).

Infrastructural Challenges

The dwindling GETFund allocation to the University for funding infrastructural projects coupled with the delays in honouring certified Interim Payment Certificates have been the major setback for progressive infrastructural development of UENR.

Future Plans of the Directorate

- In view of the infrastructural deficit and delay of payments by GETFund which has led to stalled projects, the Directorate is exploring other initiatives to generate income in order to support some of these activities. It is anticipated that when these strategies are finalized, Management would give it the necessary push to ensure its smooth implementation.
- To make portable water supply readily available to the University Community, it has been included in the procurement plan for 2022 to execute a project to improve upon the University's water distribution network.
- One major challenge is the high demand for on-campus hostel

accommodation for the student body to ease the accommodation problem. A number of investors are in discussions with Management on the issue and the Directorate is providing the needed technical support to Management to facilitate discussions and negotiations.

HOSTEL UNIT

Introduction

Providing and managing students' accommodation is one of the essential chores of tertiary institutions as it enhances students' lives and academic pursuit. The Hostel Unit of the University of Energy and Natural Resources is therefore mandated to provide a secured and serene environment to fresh students who live in on-campus halls/hostels.

The University of Energy and Natural Resources currently has two (2) residential facilities namely GETFund Hostel (Main) and GETFund Hostel Annex (New Hostel). The GETFund Hostel has study rooms, hall(s) for religious and other activities, supermarket and beauty salon(s) as well as a multi-purpose playing ground which serves as basketball court, volleyball court and tennis court for sporting activities.

The two Hostels have a combined capacity of two Hundred and Fifty-Six (256) rooms comprising One Hundred and Sixty-Eight (168) rooms and Eighty-Eight (88) rooms for the Main GETFund and GETFund Annex (New Hostel) respectively. Both Hostels are able to accommodate 992 students made up of Six hundred and seventy-two (672) students at the GETFund Hostel and Three Hundred and Twenty (320) at the GETFund Annex.

Staff

The staff of the Hostel Unit consist of the Hostel Managers, Hall Assistants, Accounting/Auditing Staff, Cleaners and Laborers. The Hostel Unit also has 19 Hall Assistants, 9 Labourers and Cleaners and 13 Casual Staff - Labourers and Cleaners. In all, about 48 people work at the Hostels.

- | | |
|------------------------|----------------------------|
| 1. Abena A. Ahenkorah | Assistant Registrar |
| 2. Abigail Amo Boatema | Junior Assistant Registrar |

Major Activities Over the Past Year

The 2020/2021 academic year was a busy year for the Hostel Unit as school resumed in the wake of the Covid-19 pandemic and this caused a bit of anxiety among staff and the residents of the Hostel.

Completed Activities

(a) Admission of fresh students to the Hostels and organizing orientation for them

The Hostel Unit admitted fresh students to the hostels through an online registration system after which they were taken through an orientation. The orientation helped the fresh students to among other things know the rules and regulations governing their stay at Hostels.

b) Successfully controlling the impact of Covid-19 among the resident students

The Hostel Unit managed the Covid-19 very well and this ensured that did not escalate. This was successfully done by providing PPE's such as nose masks, gloves as well as veronica buckets, soaps, sanitizers, etc., and ensuring that staff and residents of the Hostels strictly adhered to the various protocols established by the governmental authorities.

c) Liaising with private hostels to augment the effort of the University in providing accommodation for students

The Hostel Unit in augmenting the effort of the University in providing accommodation for students liaised with other private hostels to provide accommodation for students.

Ongoing Activities

i. Routine maintenance at the Hostel

As a result of the usage of the Hostel facilities for the semester, a routine maintenance is being carried out to ensure a comfortable stay for the new fresh students.

ii. Searching for more well-furnished private hostels to accommodate students.

Due to the inadequate hostel facility to accommodate all the fresh students, the Hostel Unit is carrying out an exercise to get more well-equipped private hostels to augment the effort of the Hostel Unit.

Other Activities

There have not been workshops, conference, and seminars. However, from time to time, the members of the Unit meet to discuss matters pertaining to the well-being of the Unit.

Challenges

One of the biggest challenges of the Unit is the inability to guarantee accommodation for all students (especially continuing students). The University has a student

population of more than Eight Thousand (8,000). Out of this number, the Hostel Unit is able to accommodate only Nine Hundred and Ninety-Two (992).

Future Plans of the Unit

- i. Collaborating other well-furnished private hostels to augment the effort of the Hostel Unit in accommodating the growing student population of the University.
- ii. Liaising with the Human Resource Division to organize training workshops and seminars for the staff of the Hostel Unit especially Hall Assistants since they are the first people that students and visitors deal mostly with.

OFFICE OF THE DEAN OF STUDENTS

OFFICE OF THE DEAN OF STUDENTS

1.0 INTRODUCTION

The Dean of Students' office is an office that is enshrined in the Act of the University. A Dean who is not below the rank of a Senior Lecturer or equivalent grade heads the Office. The Vice-Chancellor must appoint him or her. The Office of the Dean of Students presides over the Centre for Students Skills Enhancement and the Guidance and Counselling Unit. The functions of the office of Dean Students include promoting the welfare of Junior Members of the University, making representation to the University about ways of enhancing quality student's life, overseeing the formation of students' associations or societies, etc.

2.0 DEPARTMENTS AND STAFF

Dean of Students' Office

- | | |
|--------------------------------|---------------------------------|
| 1. Dr. Dominic Otoo | Dean |
| 2. Dr. Samuel Kwasi Asomaning | Co-ordinator, Dormaa Campus |
| 3. Ms. Korankye Yeboah Sandrah | Senior Administrative Assistant |

Guidance and Counseling Unit

- | | |
|-------------------------------|------------------------------------|
| 1. Ms. Eva Atika Bakuri Dinye | Head, Counselling Unit/ Chaplaincy |
| 2. Mr. Prince Kwame Affum | Counsellor, Dormaa Campus |
| 3. Ms. Cindy Awuah Pokuaa | Snr. Administrative Assistant |
| 4. Ms. Priscilla Kyei | Snr. Counselling Assistant |
| 5. Ms. Afia Tutuwaah-Yeboah | Snr. Counselling Assistant |

Centre for Students Skills Enhancement

- | | |
|-----------------------------|---------------------------------|
| 1. Mr. David Sekyi Yirenkyi | Junior Assistant Registrar |
| 2. Mr. Alfred Edem Amegbe | Senior Administrative Assistant |

3.0 MAJOR ACTIVITIES OVER THE PAST YEAR

Capacity Building for Students

Some of the activities undertaken by the office to enhance the capacity of students include the following:

- Leadership seminar: All student leaders and class representatives were educated on the types of leadership and how to strengthen their leadership capabilities.
- A one-day leadership seminar was organized by the office for the newly elected student leaders to educate them on channels of communication in the University, campus life activities, and how to overcome academic challenges. The Guidance and Counselling Unit provided the needed

education to fresh students during their orientation to enable them to have a conducive atmosphere for learning.

- The Guidance and Counselling Unit also held virtual programs for the students. These programs were held to help students adjust properly to campus life, to identify themselves with the appropriate role of their respective genders on campus among others.
- The Centre for Students' Skills Enhancement (CeSSE) had a collaboration with Ashesi University to strengthen the capacity of staff and assist in the training of students.
- CeSSE had a collaboration with the National Entrepreneurship innovation program (NEIP) in training students with entrepreneurial skills and offering start-up capital.
- CeSSE organized a one-day workshop on the 6TH of AUGUST, 2021 for all final year students on the theme "Meet the players in the industry". This was successfully done by bringing in professionals in various fields to talk to students about their chosen careers.
- CeSSE organized a three-day conference dubbed "Ultimate Conference" from 9TH – 11TH AUGUST, 2021. The focus of the conference was bridging the gap between the industry and academia. The conference featured speakers from around the world.
- CeSSE organized a three-day Bootcamp for all final year students of the University from 4th – 6th October 2021. This camp aimed to inculcate soft skills into final year students, before they leave to face the job market. The Centre invited world-renowned resource persons from the industry to groom students on some basic soft skills needed in the world of life.

Students Activities

During the 2020/2021 academic year, the Students Representative Council (SRC) organized the following programs:

- | | |
|-------------------------------|-------------------------|
| • COVID 19 Awareness | 5th March, 2021 |
| • SRC Week | 2nd - 7th March |
| • Akwaaba Week | 10th - 14th March, 2021 |
| • Her Day | 27th March, 2021 |
| • MoMo Fraud & Cyber Security | 3rd April, 2021 |
| • Clean up Exercise | 10th April, 2021 |
| • Skills Fair | 13th - 19th June, 2021 |
| • PEN Talk | 26th June, 2021 |
| • State of The SRC Address | 27th June, 2021 |
| • Islamic Hour | 17th July, 2021 |
| • Gospel Rock Show | 30th July, 2021 |
| • Hackathon | 31st July, 2021 |
| • Meet the VC | 9th September, 2021 |

3.1 ONGOING ACTIVITIES

- The Guidance and Counselling Unit is in the bid of counseling students with diverse issues on relationship matters, time management, addiction cases, gender orientation crisis. Counseling is still ongoing with them and most of them are showing positive therapeutic outcomes.
- CeSSE is currently drafting an MOU with Ghana Enterprise Agency (GEA). The purpose of this MoU is to partner with GEA so that they can extend some of their services in line with the vision of the Centre to train students in craftsmanship and artisanal works.
- CeSSE is currently drafting a grant proposal to Ashesi University to fund some of the activities of the Centre.

3.2 OTHER ACTIVITIES

Workshops/conferences/seminars: Some of the workshops the Counsellors attended to build their capacity are as follows:

- Adopting a Growth Mindset as a Counsellor in Digital Work Place.
- The Child's Social Environment Vrs the Media: Role of the Counselling Psychologist.
- Public Lecture towards the Promotion of Proper Human Sexual Rights and Ghanaian Family Values: The Bill, the Therapist, and Therapy.
- Mindset as a counselor in a digital workplace
- The counselor's empathy lens in an online environment
- How to write content for CPD Accreditation
- Mental Health Day
- Working Therapeutically With LGBTQIA+ Clients: What Counsellors Need to Do
- Peer Counsellors training program

Officers of CeSSE also attended the following:

- Annual Convening by Ashesi University
- Quality Assurance Workshop by Association of African Universities
- Ultimate Conference by CeSSE- UENR

National Commission of Civic Education in collaboration with the Office organized a workshop on exposure to legal regimes on the anti-corruption and the role of the tertiary students in the fight against corruption in September 2019.

The Social Security and National Insurance Trust (SSNIT) and the National Service Secretariat in collaboration with the Office and SRC organized a program for the entire students specifically final years at the University GetFund hostel.

Electoral commission: Officers from the regional office of the Electoral Commission

were invited to organize a one-day workshop for all members of the SRC Electoral Commission on the norms of organizing elections.

- The SRC in consultation with the Dean of Students Office supported the debate team to attend a debate competition in Africa.
- The president of Ghana organized a program on entrepreneurship which was in collaboration with the office.

Projects

- Construction of cafeteria at Dormaa Campus
- Construction of washrooms at Sunyani Campus
- Installation of a digital billboard at Sunyani Campus

Scholarships

The SRC through Anidaso Nsae/ Obaasima fund support was able to partially assist one hundred and thirty-three (133) students. The breakdown was as follows: Thirty-Two (61) very needy, nineteen (50) needy, and Twenty-Two (22) fairly needy students to pay their fees.

4.0 FUTURE PLANS

- Elections should be conducted earlier so that the new executives can have ample time to understudy the old executives before they finally handover.
- The Dean of Students and stakeholders will equally have the chance to engage the students' executives on the dos and don'ts in running SRC regarding all aspects of their operations.
- Enhancing student participation in student programs: publicity of student activities will be intensified through the use of class representatives to create more awareness for the educative programs organized by both the SRC and the Office of the Dean of Students.
- CeSSE wishes to merge the Centre for Students Skills Enhancement with the Industrial Attachment Unit.
- CeSSE wishes to set up Online Library for students.

5.0 CHALLENGES

Challenges of Dean of Students Office

- Inadequate office space: The inadequate office space poses a great challenge to the work of the Dean of Students. The confidentiality of documents is greatly affected since the document cannot be kept separately.

Challenges of the Counselling Unit both Sunyani and Dormaa Campus

The Counselling Unit amid others

- The Counselling Unit is situated at an office that is a thoroughfare of both

Staff and Students on campus. This makes it very difficult for those who come with peculiar counseling issues to concentrate.

- Inadequate Staff
- The staff strength of the Office of the Counselling Unit for both the Sunyani and Dormaa campuses together is woefully inadequate to handle the number of students' issues that arise.

Challenges of the Centre for Students Skills Enhancement

- Lack of office space to accommodate staff
- Lack of funds to run the activities of the Centre

Challenges of the SRC

- Lack of accommodation of all students (especially first-year students)

- 12) an initiative dubbed “Time with the Librarian” for the University Basic School which is aimed at introducing the pupils to the concept of “libraries”, its “Resources” and “Benefits”

SCHOOL OF GRADUATE STUDIES

SCHOOL OF GRADUATE STUDIES

1.0 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 the 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 outlets, and providing extension and consultancy services to impact positively on the society. The school consequently began operation in 2014.

To access funding from governmental, non-governmental agencies and donors, the School of Graduate Studies collaborates with the Departments and Schools to develop relevant graduate programmes. As a result, programmes offered by the School of Graduate Studies respond to career requirements of both Ghanaian and international students, to enable them upgrade their academic and professional qualifications.

2.0 PHILOSOPHY/OBJECTIVES

The School of Graduate Studies seeks to provide excellence in post graduate 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.

3.0 GRADUATE PROGRAMMES OFFERED

The School of Graduate Studies offers the following Master's and Doctoral degrees in various fields of discipline:

- » Master of Science
- » Master of Philosophy
- » Master of Business Administration
- » Doctor of Philosophy

The School of Graduate Studies currently run Ten (10) Programmes in the various Schools in the University:

1. MSc/PhD Sustainable Energy Engineering Management
2. MSc/PhD Environmental Engineering Management
3. MPhil/PhD Social Forestry and Environmental Governance
4. MSc/MPhil/PhD Environment, Water and Sustainability
5. MSc/MPhil/PhD Crop Science
6. MPhil/PhD Computer Science

7. MPhil Applied Mathematics
8. MSc/MPhil Environmental Planning and Development
9. MBA/MPhil Agribusiness Management
10. MSc/MPhil Climate Change

4.0 STUDENT ENROLMENT

The School has a student population of about Seven Hundred and Sixty-Nine (769).

4.1 BREAKDOWN OF STUDENTS ENROLMENT & PROGRAMMES

4.1.1 2016/2017 ACADEMIC YEAR

PROGRAMME	NUMBER OF STUDENTS		
	MALE	FEMALE	TOTAL
MSc Sustainable Energy Management	10	1	11
MSc Environmental Engineering Management	17	3	20
MPhil Social Forestry and Environmental Governance	29	4	33
PhD Sustainable Energy Management	5	0	5
PhD Environmental Engineering Management	12	1	13
PhD Social Forestry and Environmental Governance	9	1	10
TOTAL	82	10	92

4.1.2 2017/2018 ACADEMIC YEAR

PROGRAMME	NUMBER OF STUDENTS		
	MALE	FEMALE	TOTAL
MSc Sustainable Energy Management	21	3	24
MSc Environmental Engineering Management	16	1	17
MPhil Computer Science	14	2	16
MPhil Crop Science	2	1	3
MPhil Applied Mathematics	12	2	14
MPhil Environmental Planning and Sustainability	8	3	11
MPhil Social Forestry and Environmental Governance	20	4	24
PhD Computer Sciences	8	0	8
PhD Crop Sciences	3	0	3
PhD Social Forestry and Environmental Governance	12	0	12
PhD Sustainable Energy Management	8	0	8
PhD Environmental Engineering Management	9	0	9
TOTAL	133	16	149

4.1.3 2018/2019 ACADEMIC YEAR

PROGRAMME	NUMBER OF STUDENTS		
	MALE	FEMALE	TOTAL
MSc Sustainable Energy Management	11	1	12
MSc Environmental Engineering Management	7	0	7
MSc/MPhil Computer Science	21	2	23
MSc/MPhil Crop Science	32	2	34
MPhil Applied Mathematics	17	1	18
MSc/MPhil Environmental Planning and Sustainability	10	4	14
MPhil Social Forestry and Environmental Governance	19	4	23
MPhil/MBA Agribusiness Management	23	4	27

MPhil Climate Change	2	0	2
PhD Computer Science	6	0	6
PhD Crop Sciences	1	0	1
PhD Social Forestry and Environmental Governance	10	1	11
PhD Sustainable Energy Management	7	0	7
PhD Environmental Engineering Management	6	0	6
TOTAL	172	19	191

4.1.4 2019/2020 ACADEMIC YEAR

PROGRAMME	NUMBER OF STUDENTS		
	MALE	FEMALE	TOTAL
MSc Sustainable Energy Management	20	3	23
MSc Environmental Engineering Management	17	11	28
MSc/MPhil Computer Science	12	1	13
MSc/MPhil Crop Science	33	1	34
MPhil Applied Mathematics	12	1	13
MSc/MPhil Environmental Planning and Sustainability	17	1	18
MPhil Social Forestry and Environmental Governance	10	1	11
MPhil/MBA Agribusiness Management	21	0	21
MPhil Climate Change	7	0	7
PhD Computer Science	4	0	4
PhD Crop Sciences	4	0	4
PhD Social Forestry and Environmental Governance	1	2	3
PhD Sustainable Energy Management	17	3	20
PhD Environmental Engineering Management	11	4	15
TOTAL	186	28	214

4.1.5 2020/2021 ACADEMIC YEAR

PROGRAMME	NUMBER OF STUDENTS		
	MALE	FEMALE	TOTAL
MSc Sustainable Energy Management	19	2	21
MSc Environmental Engineering Management	16	0	16
MSc/MPhil Computer Science	24	0	24
MSc/MPhil Crop Science	25	2	27
MPhil Applied Mathematics	11	2	13
MSc/MPhil Environmental Planning and Development	8	4	12
MPhil Social Forestry and Environmental Governance	24	2	26
MSc/MPhil Environment, Water and Sustainability	9	4	13
MPhil/MBA Agribusiness Management	26	5	31
MSc/MPhil Climate Change	12	0	12
PhD Computer Science	8	0	8
PhD Crop Sciences	8	0	8
PhD Social Forestry and Environmental Governance	-	-	
PhD Sustainable Energy Management	5	2	7
PhD Environmental Engineering Management	5	3	8
PhD Environment, Water and Sustainability	2	0	2
TOTAL	202	26	228

OVERALL TOTAL NUMBER OF STUDENTS

ACADEMIC YEAR	NUMBER OF STUDENTS		
	MALE	FEMALE	TOTAL
2016/2017	63	8	71
2017/2018	133	16	149
2018/2019	172	19	191
2019/2020	186	28	214
2020/2021	202	26	228
TOTAL	756	97	853

NUMBER OF STUDENTS GRADUATED

ITEM	NUMBER OF STUDENTS		
	MALE	FEMALE	TOTAL
Students graduated	65	14	79

NUMBER OF STUDENTS CURRENTLY ENROLLED

ITEM	NUMBER OF STUDENTS		
	MALE	FEMALE	TOTAL
Students graduated	691	83	774

The School of Graduate Studies graduates approximately One Hundred (100) students from the various programmes in the 2020/2021 Academic Year.

5.0 SCHOLASHIPS

The University continues to benefit from the Ghana National Petroleum Commission (GNPC) Scholarship for both undergraduate and postgraduate students. Currently, the scheme has awarded scholarships to nine (9) postgraduate students.

6.0 STAFFING

The current staff strength of the School is as follows:

- | | |
|-------------------------------|-----------------------------|
| 1. Prof. John K. M. Kuwornu | Dean |
| 2. Mr. Prince Awuah | School Secretary |
| 3. Ms. Martha Bayuo | Senior Administrative Staff |
| 4. Mr. Ebenezer Asare Baffour | Senior Administrative Staff |

7.0 ACTIVITIES

The Graduate School co-coordinates all departments that run graduate programmes in the University. Some of key functions of the Graduate School are as follows:

- » Administering and processing applications of applicants;
- » Maintaining records of all graduate students;
- » Assisting various Departments in the organization of interviews for applicants seeking admission into various programmes, issuing of admission letters and registration of students.
- » Liaising with the various Heads of Department and Deans on all matters relating to graduate studies in the various Departments and Schools;
- » Organizing seminars, workshops and conferences for postgraduate students;
- » Approving all faculty members teaching postgraduate programs and supervising postgraduate theses and dissertations to ensure high quality outputs of our postgraduate programmes comparable to graduate programmes of highly esteemed universities around the world;
- » Co-ordinating and approving examination of dissertations and theses of graduate students;
- » Organizing and conducting oral examinations for final year graduate students to defend their theses.
- » Facilitating postgraduate students and faculty exchange programs with well-known universities globally;
- » Assisting postgraduate students with applications for funding for research and other scholarship programs.

8.0 FUTURE PLANS

The Graduate School in the near future intends to have graduate programmes in all departments in the University. In view of this, the following programmes have been submitted for accreditation and they are under review:

- » MPhil in Applied Statistics
- » MBA in Information Technology Management
- » MPhil/PhD in Information Technology
- » MSc/MPhil Sustainable Mining
- » MSc/MPhil Geoinformation Science
- » MPhil Environmental Science
- » MBA/MPhil Entrepreneurship/Finance/Accounting/Management
- » PhD Business Science

9.0 CONCLUSION

The School of Graduate Studies shall continue to strive for excellence in extending the horizon of Graduate Studies in Ghana and beyond.

SCHOOL OF ENGINEERING

SCHOOL OF ENGINEERING

INTRODUCTION

All of the advances of the past two (2) centuries whether they are economic, political or social in nature are connected in part to the massive consumption of energy and natural resources.

The School of Engineering is one (1) of the foundation schools of the University of Energy and Natural Resources (UENR), which took off during 2012/2013 academic year at the main campus in Sunyani. The School started with one (1) Department; the Department of Energy and Environmental Engineering but has expanded and currently has Four (4) Departments and Two (2) Centres under its jurisdiction. The School of Engineering seeks to train engineers to address problems relating to energy and natural resources. It focuses on the development of human capacity to manage and solve problems of extracting, collecting, converting and utilizing energy and natural resources. Its philosophy is to provide students with competitive skills and professional leadership within the energy, natural resources and engineering sectors.

» **Our Vision**

To become a world-class school of excellence for generating, advancing and applying knowledge in energy and natural resources using engineering tools.

» **Mission Statement**

To promote the development of human resources and skills required to solve critical energy and natural resources challenges of society by training students to use active knowledge and competency-based training in Engineering to make positive impact on society's energy and natural resources needs and improve livelihoods, ensuring a cleaner environment.

» **Our Aim**

Our aim is to train and equip students to become capable of fully integrating various energy conversion technologies, energy efficiency, management techniques and environmental issues to meet the changing demands of the energy and process industries, households and commercial enterprises, particularly in Ghana and Africa as a whole.

► Core Values

- » Hard work
- » Humility
- » Dedication
- » Integrity
- » Team Work

Administration of the School

The following personnel constitute the School Administration:

- | | |
|---|------------------------------|
| » Ing. Prof. Nana Sarfo Agyemang Derkyi | Dean |
| » Ms Bernice Osei Twenewaa | Faculty Officer |
| » Ms Ivy Adwoa Yeboah | Snr Administrative Assistant |

DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING

The erstwhile Department of Energy and Environmental Engineering was split into two departments in 2018, namely the Department of Energy and Petroleum Engineering and the Department of Civil and Environmental Engineering respectively.

The Department of Civil and Environmental Engineering runs both undergraduate and postgraduate programs. The BSc in Environmental Engineering program commenced in the 2013-2014 academic year under the then Department of Energy and Environmental Engineering. However, the Civil Engineering program started in the 2017-2018 academic year. The postgraduate programs (MSc and Ph.D.) in Environmental Engineering and Management commenced in the 2015-2016 academic year.

The Civil and Environmental Engineering at UENR is focused on applying engineering and science to help find solutions to the emerging challenges of our changing world and important societal problems of the twenty-first century.

Administration of the Department

- | | |
|-------------------------------|------------------------------|
| » Ing. Prof. Francis Attiogbe | Head of Department |
| » Ms. Joyce Okrah | Snr Administrative Assistant |

Academic Programmes

The Department has Two (2) Undergraduate Programmes and Two (2) Postgraduate Programmes.

Undergraduate Programmes:

- » B.Sc. Civil Engineering
- » B.Sc. Environmental Engineering

Postgraduate Programmes

- » M.Sc. Environmental Engineering and Management
- » Ph.D. Environmental Engineering and Management

Staff and Students Statistics

Table 1.1 Students' Statistics (Civil Engineering)

Level	Current Year (2021)			Past 1Year			Past 2 Years			Past 3 years		
	M	F	T	M	F	T	M	F	T	M	F	T
Level 100	80	20	100	88	9	97	59	5	64	20	0	20
Level 200	88	9	97	59	5	64	20	0	20			
Level 300	59	5	64	20	0	20						
Level 400	20	0	20									

Table 1.2 Students' Statistics (Environmental Engineering)

Level	Current Year (2021)			Past 1Year			Past 2 Years			Past 3 years		
	M	F	T	M	F	T	M	F	T	M	F	T
Level 100	56	14	70	24	9	33	15	4	19	22	3	25
Level 200	24	9	33	15	4	19	21	3	24			

Level 300	15	4	19	20	3	23						
Level 400	20	3	23									

Table 1.3 Students' Statistics (M.Sc. Environmental Engineering and Management)

Academic Year	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
MSc	11	11	17	7	29

Table 1.4 Students' Statistics (Ph.D. Environmental Engineering and Management-Regular)

Academic Year	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
PhD	8	4	10	9	12

Staff Statistics

S/N	NAME	DESIGNATION
1	Ing. Prof. Francis Attiogbe	Associate Professor/ HoD
2	Ing. Prof. Amos T. Kabo-bah	Associate Professor
3	Ing. Prof. Eric Antwi Ofori	Associate Professor
4	Ing. Dr. Emmanuel Kwasi Nyantakyi	Senior Lecturer
5	Dr. Prince Antwi-Agyei	Lecturer
6	Dr. Mark Amo-Boateng	Lecturer
7	Dr. Augustus Ababio Donkor	Lecturer
8	Dr. Nana Ackerson	Lecturer
9	Mrs. Anna Amankwaa Minka	Assistant Lecturer
10	Mr. Nana Kwame Obeng-Ahenkora	Assistant Lecturer
11	Mr. Saeed Ibn Kofi Idris Kofi Yeboah	Senior Technician
12	Mr. Oti Boateng George	Senior Technician
13	Ms. Joyce Okrah	Snr. Administrative Assistant

Research Collaborations (Local and International)

ING. DR. PRINCE ANTWI-AGYEI

1. Co-Investigator (May 2018 – November 2021): Management of Shared Sanitation Facilities in Informal Settlements of Kisumu, Kenya and Kumasi, Ghana. A collaborative project under LIRA 2030 Africa – Advancing the implementation of the Sustainable Development Goal 11 in Africa. Project lead: African population & health research centre, Kenya. Other partners NHance Development Partners Ltd, Ghana, Kwame Nkrumah University of Science and Technology (KNUST), and Kenyatta University, Kenya. Project funded by the International Science Council and the Network of African Science Academies (NASAC).
2. Co-Investigator and Ghana team lead (November 2018 – December 2021): QUISS: Quality Indicators of Shared Sanitation Facilities in Urban Informal Settlements in Low- And Middle-Income Countries (Ghana, Kenya, and Bangladesh). Research Lead: Eawag/Sandec, Switzerland. Funding: Water and Sanitation for the Urban Poor (WSUP, UK).

ING. PROF. FRANCIS ATTIOGBE

1. Co-Investigator (March 2020- January 2021): Investigating Bicarbonate Anion and TAED as Activators in Peroxide Bleaching of a Mechanical Pulp with the Principal Investigator from SUNY-ESF, USA. Funding: ANDRITZ.

Workshops/Conferences/Public Lectures

ING. PROF. ERIC ANTWI OFOSU

1. Panel Speaker: Society of Petroleum Engineers Virtual Workshop: Emerging Fronts – HSE Management & Sustainability of Petroleum Operations in Africa, 25-26 May 2021.
2. Panel Speaker: The Nigerian Institution of Environmental Engineers (NIEE) Commemoration of the World Environment Day 2020. Delivered a lecture on Biodiversity and Water Supply.

DR. NANA OSEI BONSU ACKERSON

1. 2021 UNC (University of North Carolina-Chapel Hill) Water and Health Conference, 4-8 October 2021 (Online)
2. The path to research leadership in Africa and India, 23 September 2021 (Online Webinar)
3. Triple Threats on Ghana's Economic Horizon: Policy Implications and roles of UENR, 5 August 2021 – Public Lecture by Prof Kwamena Panford, UENR

Auditorium

ING. DR. PRINCE ANTWI-AGYEI

1. MOLE XXXI WASH CONFERENCE. Prioritizing and refocusing sustainable wash services delivery – lessons from the covid-19 pandemic Hill view Guest Centre, Abokobi-Teiman | 3 – 6 November 2020. Management of Shared Sanitation Facilities in Low-Income Communities of Kumasi, Ghana

ING. DR. EMMANUEL KWESI NYANTAKYI

1. Obiri-Yeboah, J. F. X. Ribeiro, E. K. Nyantakyi (2021). A Comparative Study of Partial Replacement of Cement with Glass, Sawdust, Palm Kernel, and Palm Husk for Applications in Concrete. 10th Sustainable Education and Development Research Conference, Noguchi Conference Hall University of Ghana, 25th-28th August 2021
2. Launch of an electric vehicle Lithium-ion battery pack development lab at Solar Taxi Ltd, Adako Jachie behind Excelsa Lodge (off KNUST – Ejisu road), Kumasi on 6th August 2021 at 10:00 am
3. 2021-2023 GhIE National Council Orientation and Retreat Programme, Hephzibah Christian Limited, Akuapem, Thursday, May 6, 2021, to Sunday, May 9, 2021
4. Invitation to Project Kick-Off Workshop, Mobility for sub-Saharan Africa sustainably thought through the life cycle - MoNaL“ April 19, 2021, from 2 pm GMT at Eusbett hotel in Sunyani.
5. 51st Ghana Institution of Engineering Annual Conference and Meeting on the theme ‘Engineering Key to Sustainable Development’ at IDL Conference Centre, KNUST-Kumasi between 24th and 26th March 2021
6. Postgraduate Thesis Progress Presentation organized by RCEES at Rosewood Cottage, Kumasi between 22nd and 26th March 2021
7. Thesis Supervision Workshop organized by RCEES in UENR, Sunyani between 19th and 21st January 2021

ING. PROF. FRANCIS ATTIOGBE

1. Excellence in Peer Review: How to be an effective peer reviewer Webinar organized by Taylor & Francis Group, October 21, 2021.
2. Practical and hands-on teaching and learning online through labs with Coursera, Quanser & Siemens Webinar, September 28, 2021.
3. Simple sewage treatment processes in a low and middle-income countries-online seminar organized by IHE Delft Alumni Relations Office, July 27, 2021.

4. Public Open Access Books-Webinar organized by Taylor & Francis Group, July 27, 2021.
5. Innovating for Excellence in Engineering Education-Webinar organized by Coursera and International Society for Engineering Pedagogy(IGIP), July 15, 2021.
6. Bridging the Employability Gap for Engineering Students - Webinar with Coursera, Jun 9, 2021.
7. How to Publish Scholarly Books and Open Access organized by Taylor & Francis Group, May 19, 2021.
8. Scaling skills education with high-quality digital learning organized by Coursera for Campus, May 13, 2021.
9. Innovative Approaches to Hybrid and Virtual Classrooms organized by Coursera and Colegio de Estudios Superiores de Administración (CESA), May 5, 2021.

Proposals

ING. PRINCE DR. ANTWI-AGYEI

1. Bottleneck analysis for the uptake of recycled plastic products and plastic waste collection in Ghana. ENVIRONMENTAL SANITATION RESEARCH FUND - The Jospong Group of Companies. A Competitive Research Grant for Public Universities in Ghana, for the Improvement of Environmental Sanitation in Ghana (2021).
2. Assessment of occupational health and safety risks among latrine pit emptiers and public toilet operators in urban Ghana. INITIATIVE FOR SANITATION WORKERS (ISW). Research support grants on Sanitation Workers: for Institutions (2021)
3. Improving pit emptying services delivery in urban Ghana: what are the institutional and regulatory reforms needed? INITIATIVE FOR SANITATION WORKERS (ISW). Research support grants on Sanitation Workers: for Institutions (2021)
4. Improving Water, Sanitation, and Hygiene for Development. USAID Enhancing Water, Sanitation and Hygiene (WASH) Activity (2021)

Grants and Awards

ING. DR. EMMANUEL KWESI NYANTAKYI

1. Part of the team that reviewed the Site Licensing Lease Agreement between UENR and ATLAS Space Operations, USA and secured a monthly amount of Three Thousand Eight Hundred dollars (\$3,800) for the Earth Observation Research and Innovation Centre (EORIC) to defray EORIC Colocation Rent, General Maintenance & Power, University administrative Fees & Charges in September 2021.
2. I secured an amount of Nineteen Thousand, Two Hundred, and Seventy-Eight Dollars (\$19,278) to undertake the extension of electricity to Carbon Tower Project Site, Tano Bia Forest, Mim in the Ahafo Region in July 2021.
3. Part of the team that reviewed the Site Licensing Lease Agreement between UENR and Spire MBS, Germany and secured a monthly amount of Four Thousand Six Hundred and Twenty Four dollars (\$4,624) for the Earth Observation Research and Innovation Centre (EORIC) to defray EORIC Colocation Rent in June 2021.

Publications (for the year under review)

ING. PROF. FRANCIS ATTIOGBE

1. Kodom, K., Attiogbe, F., Kuranchie, F.A., Assessment of removal efficiency of pharmaceutical products from wastewater in Sewage Treatment Plants: A case of the Sewerage Systems Ghana Limited, Accra, HELIYON, November 2021 <https://doi.org/10.1016/j.heliyon.2021.e08385>.
2. Francis, R. C., Luukkonen, A., Attiogbe, F. K., & Kamdem, D. P. (2020). Bicarbonate Anion and Taed as Activators in Peroxide Bleaching of a Mechanical Pulp. *Cellulose Chemistry and Technology*, 54(3-4), 319-326.
3. Angnunavuri, P. N., Attiogbe, F., Dansie, A., & Mensah, B. (2020). Consideration of Emerging Environmental Contaminants in Africa: Review of Occurrence, Formation, Fate, and Toxicity of Plastic Particles. *Scientific African*, e00546.
4. Attiogbe, F. K., Abdul Rahim Mohammed, and Quarm Kingslove. "Assessing the potential health impact of selected heavy metals that pollute Lake Amponsah in Bibiani, Western North Region, Ghana." *Scientific African* (2020): e00531.

ING. PROF. ERIC ANTWI OFOSU

1. Ofosu-Peasah G., Ofosu E. A., Blyth W. (2021). Factors Characterising Energy Security in West Africa: An integrative Review of the Literature. *Renewable and Sustainable Energy Reviews* 148 (2021) 111259 <https://doi.org/10.1016/j>

rser.2021.111259

2. Jianguo D., Chang G., Adu D., Darko R., Khan M. A. S., Antwi E. O. (2021). Numerical Simulation and Computational Flow Characterization Analyses of Centrifugal Pump Operating as Turbine. Wiley Hindawi Complexity Volume 2021, Article ID 9695452. <https://doi.org/10.1155/2021/9695452>
3. Dekongmen B. W., Kabobah A. T., Domfeh M. K., Sunkari E. D., Dile Y. T., Antwi E. O., Gyimah R. A. A. (2021). Flood vulnerability assessment in the Accra Metropolis, southeastern Ghana. *Applied Water Science* (2021) 11:134 <https://doi.org/10.1007/s13201-021-01463-9>
4. Aboagye B., Gyamfi S., Antwi E. O., Djordjevic S. (2021). Status of renewable energy resources for electricity supply in Ghana. *Scientific African* Volume 11 (2021) <https://doi.org/10.1016/j.sciaf.2020.e00660>.
5. Atta-Darkwa T., Ofosu E., Amankwah E., Ankamah J., Akolgo G., Asare A., Antwi A. (2020). Comparison and Estimation of Four Infiltration Models. *Open Journal of Soil Science*. 10. 45-57. <https://doi.org/10.4236/ojss.2020.102003>.
6. Domfeh M. K., Gyamfi S., Amo-Boateng M., Andoh R., Antwi E. O., Tabor G. (2020). Numerical Simulation of an Air-Core Vortex and its Suppression at an Intake Using OpenFOAM Fluids (2020), 5, 221; doi:10.3390/fluids5040221.
7. Domfeh M. K., Gyamfi S., Amo-Boateng M., Andoh R., Antwi E. O., Tabor G. (2020). Numerical simulation of an air-core vortex at a hydraulic intake using OpenFOAM. *Scientific African* Volume 8 (2020) <https://doi.org/10.1016/j.sciaf.2020.e00389>.
8. Oti J. O., Kabobah A. T., Ofosu E. (2020). Hydrologic Response to Climate Change in the Densu River Basin in Ghana. *Heliyon* Volume 6 (2020). <https://doi.org/10.1016/j.heliyon.2020.e04722>
9. Domfeh M. K., Gyamfi S., Amo-Boateng M., Andoh R., Antwi E. O., Tabor G. (2020). Free surface vortices at hydropower intakes: - A state-of-the-art review. *Scientific African* Volume 8, 2020 <https://doi.org/10.1016/j.sciaf.2020.e00355>.
10. Asamoah, Michael & Kabobah, Amos Tiereyangn & Ofosu, Eric. (2020). Spatial and Socio-Economic Impacts Analysis of BUI Hydropower Dam on Downstream Communities. 10.1007/978-3-030-13697-0_23.
11. P. N. A. Asare, F. A. Kuranchie, and E. Ofosu (2019). Evaluation of incorporating plastic wastes into asphalt materials for road construction in Ghana. *Cogent Environmental Science* (2019), 5: 1576373. <https://doi.org/10.1080/2331843.2019.1576373>

DR. MARK AMO-BOATENG

1. Domfeh, M. K., Gyamfi, S., Amo-Boateng, M., Andoh, R., Ofosu, E. A., & Tabor, G. (2020). Free surface vortices at hydropower intakes: -A state-of-the-art review. *Scientific African*, e00355.
2. Domfeh, M. K., Gyamfi, S., Amo-Boateng, M., Andoh, R., Ofosu, E. A., & Tabor, G. (2020). Numerical simulation of an air-core vortex at a hydraulic intake using OpenFOAM. *Scientific African*, e00389.

ING. DR. PRINCE ANTWI-AGYEI

1. Simiyu, S., Antwi-Agyei, P., Adjei, K., & Kweyu, R. (2021). Developing and Testing Strategies for Improving Cleanliness of Shared Sanitation in Low-Income Settlements of Kisumu, Kenya. *The American journal of tropical medicine and hygiene*, tpmd201634.
2. Delaire, C., Kisiangani, J., Stuart, K., Antwi-Agyei, P., Khush, R. & Peletz, R., (2021). Can open-defecation-free (ODF) communities be sustained? A cross-sectional study in rural Ghana. *PLOS ONE* (Forthcoming, PONE-D-21-10647R1)
3. Delaire, C., Peletz, R., Haji, S., Kones, J., Samuel, E., Easthope-Frazer, A., Charreyron, E., Wang, T., Feng, A., Mustafiz, R., Faria, I. J., Antwi-Agyei, P., Donkor, E., Adjei, K., Monney, I., Kisiangani, J., MacLeod, C., Mwangi, B., & Khush, R. (2021). How Much Will Safe Sanitation for all Cost? Evidence from Five Cities. *Environmental science & technology*, 55(1), 767–777. <https://doi.org/10.1021/acs.est.0c06348>
4. Tidwell, J., Chipungu, J., Ross, I., Antwi-Agyei, P., Alam, M.U., Tumwebaze, I.K., Norman, G., Cumming, O. and Simiyu, S., 2020. Where Shared Sanitation is the Only Immediate Option: A Research Agenda for Shared Sanitation in Densely Populated Low- Income Urban Settings. *The American Journal of Tropical Medicine and Hygiene*, p. tpmd200985.
5. Schelbert, V., Meili, D., Alam, M.U., Simiyu, S., Antwi-Agyei, P., Adjei, K.A., Dwumfour-Asare, B., Rahman, M., Ferdous, S., Sarker, S. and Günther, I., 2020. When is shared sanitation acceptable in low-income urban settlements? A user perspective on shared sanitation quality in Kumasi, Kisumu, and Dhaka. *Journal of Water, Sanitation, and Hygiene for Development*.
6. Antwi-Agyei, P., Dwumfour-Asare, B., Adjei, K. A., Kweyu, R., & Simiyu, S. (2020). Understanding the Barriers and Opportunities for Effective Management of Shared Sanitation in Low-Income Settlements—The Case of Kumasi, Ghana. *International journal of environmental research and public health*, 17(12), 4528.
7. Simiyu, S., Kweyu, R. M., Antwi-Agyei, P., & Adjei, K. A. (2020). Barriers and opportunities for management of shared sanitation facilities in low-income settlements in Kenya. *BMC Public Health*, 20(1), pp.1-12.

ING. PROF. AMOS KABO-BAH

1. Oti, J. O., Kabo-Bah, A. T., & Ofosu, E. (2020). Hydrologic response to climate change in the Densu River Basin in Ghana. *Heliyon*, 6(8), e04722.
2. Mensah, C., Atayi, J., Kabo-Bah, A. T., Švik, M., Acheampong, D., Kyere-Boateng, R., ... & Marek, M. V. (2020). Impact of urban land cover change on the garden city status and land surface temperature of Kumasi. *Cogent Environmental Science*, 6(1), 1787738.
3. Akpoti, K., Kabo-Bah, A. T., Dossou-Yovo, E. R., Groen, T. A., & Zwart, S. J. (2020). Mapping suitability for rice production in inland valley landscapes in Benin and Togo using environmental niche modeling. *Science of the total environment*, 709, 136165.
4. Saeed, I. I. K. Y., Kabo-bah, A. T., Amoah T., Mensah, S., Yeboah.S. I. (2020), Assessment of Water Quality of the Kwaman River in the Wassa Amenfi West District of Ghana. *Global Science Journal* 8(10) 10.11216/gsj.2020.10.45.305
5. Obeng, M., Gyamfi, S., Derkyi, N. S., Kabo-bah, A. T., & Peprah, F. (2020). Technical and economic feasibility of a 50 MW grid-connected solar PV at UENR Nsoatre Campus. *Journal of Cleaner Production*, 247, 119159.
6. Amoah Theophilus, Adotey Maame Afua Chadey, Amos T. Kabo-bah, Agyemang Opoku Nana Yaw, Saeed Ibn Idris K. Yeboah, Amoah Ofori Obed. (2020), Phytoremediation of Heavy Metal Contaminated Soil: Experimental Application of *Luffa Cylindrica* (Sponge Gourd). *International journal of science and research (IJSR)*, 2(12), 395-398.

ING. DR. EMMANUEL KWESI NYANTAKYI

1. Amos T. Kabo-bah, Emmanuel Nyantakyi, Kamila Kabo-bah, Abdul Fatawu Nasirudeen, Ebenezer K. Siabi (2021). Prejudice against poor and vulnerable. *Encyclopedia of the UN Sustainable Development Goals, No Poverty-Springer- Accepted and yet to be published (Book Chapter)*
2. Shaibu Osman, Francis Atta Kuranchie, Emmanuel Nyantakyi (2021). Substitution of Glass Powder for Cement in Concrete as a Sustainable Waste Management Practice. *Environmental and Green Processes (MDPI)- Accepted and yet to be published*
3. Ebenezer K. Siabi, Amos T. Kabo-bah, Komlavi Akpoti, Geophery K. Anornu, Mark Amo-Boateng, Emmanuel K. Nyantakyi (2021). Statistical Downscaling future Climate Changes in the Black Volta Basin of Ghana: Impacts on Food, Energy, and Water. *Environmental Challenges* (2021), <https://doi.org/10.1016/j.envc.2021.100299>
4. Caleb Mensah, Ladislav Šigut, Milan Fisher, Lenka Foltýnová, Georg Jocher, Shilpi Chawla, Otmar Urban, Cosmos Senyo Wemegah, Marian Pavelka, Emmanuel K. Nyantakyi, Michal V. Marek (2021). Environmental effects on potential gross primary productivity in Beech and Norway spruce forests. *Atmosphere* 2021, 12, 1128. <https://doi.org/10.3390/atmos12091128>

5. Obiri-Yeboah, A, Nyantakyi, E. K., Abdul Rahim M, Yeboah S. I. I. K., Domfeh, M. K, Abokyi, E (2021). Assessing Potential Health Effect of Lead and Mercury and the Impact of Illegal Mining Activities in the Bonsa River, Tarkwa Nsuaem, Ghana. *Scientific African* <https://doi.org/10.1016/j.sciaf.2021.e00876>
6. Caleb Mensah , Ladislav Šigut, Milan Fischer, Lenka Foltýnová, Georg Jocher, Manuel Acosta, Natalia Kowalska, Lukáš Kokrda, Marian Pavelka, John David Marshall, Emmanuel K. Nyantakyi, Michal V. Marek (2021). Assessing the Contrasting Effects of the Exceptional 2015 Drought on the Carbon Dynamics in Two Norway Spruce Forest Ecosystems. *Atmosphere* 2021, 12, 988. <https://doi.org/10.3390/atmos12080988>
7. E. K. Nyantakyi, S. Mohammed, P. Anumah, J. Borkloe, A. Morgan (April 2021). Investigation of Hydrocarbon Generation Potential for OML 64 in Warri State, Nigeria. *Journal of Applied Geochemistry, Indian Society of Applied Geochemists (ISAG)*. Year: 2020, Volume: 22, Issue: 3 First page: (192) Last page: (201). Print ISSN: 0972-1967. Online ISSN: 2319-4316.
8. Mohammed S, Nyantakyi E.K., Morgan A., Anumah P., Sarkodie-Kyeremeh J., (2020). Use of relative extra citation counts and uncited publications to enhance the discriminatory power of the h-index. *Scientometrics* 122, 1791–1799. <https://doi.org/10.1007/s11192-020-03777-y>, www.springer.com
9. Nyantakyi E. K, Obeng-Ahenkora N.K, Obiri-Yeboah A., Mohammed G.A, Domfeh M.K., Osei R.K. (2020) Differential Pricing Of Concrete Products Within The Ghanaian Construction Industry, *International Journal of Construction Engineering and Management*, Vol. 9 No. 5, 2020, pp. 135-141. DOI: 10.5923/j.ijcem.20200905.01.
10. Nyantakyi E.K, Obiri-Yeboah A, Mohammed G. A., Domfeh M. K., Obeng-Ahenkora N. K., (2020). Partial Replacement of Cement with Glass Bottle Waste Powder in Concrete for Sustainable Waste Management: A Case Study of Kumasi Metropolitan Assembly, Ashanti Region, Ghana. *Journal of Civil Engineering Research*, Vol. 10 No. 2, 2020, pp. 29-38. DOI: 10.5923/j.jce.20201002.01.
11. Nyantakyi E. K., Obiri-Yeboah A., Obeng-Ahenkora N. K., Domfeh M. K., Mohammed G. A, (2020). Investigating Occupational Health and Safety of Workers on Selected Construction Sites in the Sunyani Municipality, Ghana, *Journal of Safety Engineering*, Vol. 9 No. 1, 2020, pp. 1-8. DOI: 10.5923/j.safety.20200901.01.
12. Uba F., Fiagbe Y., Forson F., Opoku R., Nyantakyi E.K., (2020). CFD Modeling and Analysis of the Trajectory and Behaviour of Oil Pollutant Particles in the Ghanaian Territorial Waters. *Scientific African* (2020), DOI: <https://doi.org/10.1016/j.sciaf.2020.e0041>
13. Uba F., Essandoh E., Nyantakyi E.K., Anumah P., (2020). Hydrodynamic Model for Operational Forecasting in Coastal Waters of Ghana. *Open*

Journal of Modelling and Simulation, 8, 48-59. <https://doi.org/10.4236/ojmsi.2020.82004>

14. Mohammed S, Morgan A., Nyantakyi E.K., (2020). On the influence of uncited publications on a researcher's h-index. *Scientometrics* 122, 1791–1799. <https://doi.org/10.1007/s11192-020-03356-1>, www.springer.com

NANA KWAME OBENG-AHENKORA

1. Nyantakyi E.K, Obiri-Yeboah A, Mohammed G. A., Domfeh M. K., Obeng-Ahenkora N. K., (2020). Partial Replacement of Cement with Glass Bottle Waste Powder in Concrete for Sustainable Waste Management: A Case Study of Kumasi Metropolitan Assembly, Ashanti Region, Ghana. *Journal of Civil Engineering Research*, Vol. 10 No. 2, 2020, pp. 29-38. DOI: 10.5923/j.jce.20201002.01.
2. Nyantakyi E. K., Obiri-Yeboah A., Obeng-Ahenkora N. K., Domfeh M. K., Mohammed G. A, (2020). Investigating Occupational Health and Safety of Workers on Selected Construction Sites in the Sunyani Municipality, Ghana, *Journal of Safety Engineering*, Vol. 9 No. 1, 2020, pp. 1-8. DOI: 10.5923/j.safety.20200901.01.
3. Emmanuel Kwesi Nyantakyi, Nana Kwame Obeng-Ahenkora Abena Obiri-Yeboah, Ghadafi Abdullai Mohammed, Martin Kyereh Domfeh, Richard Kwadwo Osei. (2020). Differential Pricing of Concrete Products Within the Ghanaian Construction Industry. *Journal of Construction Engineering and Management*. 9 (5). 135-141. 10.5923/j.jce.20201002.01

DR. NANA OSEI BONSU ACKERSON

1. Ackerson, N.O.B., Liberatore, H.K., Richardson, S.D., Plewa, M.J., Ternes, T.A., and Duirk, S.E (2021). Chloramination of iopamidol- and bromide-spiked waters containing natural organic matter. *Water Supply* 21 (2), 886-898.

MRS. ANNA AMANKWAA MINKAH

1. Agbotui, P., Anornu, G., Agbotui, T., Gyabaah, F., Amankwah-Minkah, A., Brookman-Amisshah, M., Blankson-Darku, D., and Sallah, J. (2021). Risk-based contaminated land management policy mindset: a way out for Ghana's environmental challenges. *African Geographical Review*, 1-14.

SAEED IBN IDRIS KOFI YEBOAH

1. Amoah Ofori Obed, Hilary D. Zakpaa, Amoah Theophilus, Saeed Ibn Idris Kofi Yeboah, Essandoh Prince (2021). Extraction, Purification, and Characterisation of Plant Enzyme (Calotropain) From the Unripe Pods and Bark of Sodom Apple (*Calotropis Procera* (Ait)) for Possible Food Applications. *Asian Journal of Biochemistry, Genetics and Molecular Biology*.
2. Saeed Ibn Idris Kofi Yeboah, Amoah Theophilus, Tienaah Michael, Bernard Otchere Akwasi Poku Michael, Abubakar Asana Zorngo (2021), Recycling of food waste, A Review. *International Journal of Scientific Research and Engineering Trends*.
3. Amoah Theophilus, Adotey Maame Afua Chadey, Amos T. Kabo-bah, Agyemang Opoku Nana Yaw, Saeed Ibn Idris K. Yeboah, Amoah Ofori Obed. (2020), Phytoremediation of Heavy Metal Contaminated Soil: Experimental Application of *Luffa Cylindrica* (Sponge Gourd). *International journal of science and research (IJSR)*, 2(12), 395-398.
4. Saeed, I. I. K. Y., Kabo-bah, A. T, Amoah T., Mensah, S., Yeboah.S. I. (2020), Assessment of Water Quality of the Kwaman River in the Wassa Amenfi West District of Ghana. *Global Science Journal* 8(10) 10.11216/gsj.2020.10.45.

Community Engagements

ING. DR. EMMANUEL KWESI NYANTAKYI

1. Committee Member, Committee for the development of a proposal for the establishment of a Centre for Transport Planning and Management
2. March 2021 to date: Chairman, Ghana Institution of Engineering (GhIE), Bono, Bono East, and Ahafo Regions (Branch 2)
3. November 2020 to date: Member, Membership Committee, Ghana Institution of Engineering (GhIE)
4. June 2020 to date: Senior Professional Engineer, Ghana Institution of Engineering (GhIE)
5. April 2021 to date: Member, Publication Committee, Ghana Institution of Engineering (GhIE)
6. August 2019 to date: Member, Entity Tender Committee, Middle Belt Development Authority (Bono, Bono East, Ahafo, Ashanti, and Eastern Regions)
7. April 2018 to date: Council Member, Ghana Institution of Engineering (GhIE)
8. April 2021 to date: Member, Education and Training Committee of the Ghana Institution of Engineering (GhIE)
9. 22nd September to 1st October 2021: Chief Invigilator, Second Semester Examinations 2020/2021, UENR-Sunyani

10. 11th September 2021: Panel Member, Engineering Professional Examination (GhIE), KNUST, Kumasi
11. 29th May 2021: Panel Member, Engineering Professional Examination (GhIE), UENR, Sunyani
12. 7th May 2021 to Date: External Assessor, Department of Civil Engineering, Sunyani Technical University, Sunyani
13. 5th April 2021: Facilitator, Pre-examination Workshop for Training Professional Engineers preparing to write the Engineering Professional Examination RCEES, University of Energy and Natural Resources, Sunyani

DR. NANA OSEI BONSU ACKERSON

1. Reviewer, Science of the Total Environment – 2 reviews
2. MSc Internal Assessor – 2 MSc Environmental Engineering and Management Candidates
3. School of Engineering Quality Assurance Sub-Committee
4. Committee Member, Development of a business proposal for procurement and use of drilling rig for the Civil Engineering Department
5. Academic Tutor – Civil and Environmental Engineering Students

MRS. ANNA AMANKWAA MINKAH

1. Committee Member, Development of a business proposal for procurement and use of drilling rig for the Civil Engineering Department
2. Committee Member, Committee for the development of a proposal for the establishment of a Centre for Transport Planning and Management
3. Committee Member, Committee for the development of a proposal for the establishment of a Centre for Environmental Health and Sanitation
4. Committee Member, Committee for Solving the liquid waste (greywater) problem at the GETFUND Hostel
5. Committee Member, Committee for Development of Curriculum for Graduate Program in Hydrology and WRM
6. Academic Tutor – Civil and Environmental Engineering Students

NANA KWAME OBENG-AHENKORA

1. Committee Member, Development of a business proposal for procurement and use of drilling rig for the Civil Engineering Department
2. Academic Tutor – Civil and Environmental Engineering Students

ING. DR. PRINCE ANTWI-AGYEI

1. December 2020 – to date: Board Chair. Trimark Aquaculture Business Centre, A Public-Private Partnership (PPP) arrangement between Trimark and the Kumasi Metropolitan Assembly (KMA).

2. 2021: Member, Committee for integration of non-science students into engineering. School of Engineering, UENR.
3. 2021. Committee Member, UENR-Ghana Meteorological Agency (GMet) collaboration
4. July – October 2021: Member, Awards Committee Member, IDRC Sponsored Strengthening Engineering Ecosystem in Sub-Saharan Africa Project, College of Engineering, KNUST
5. August 2020 – to Date: Chairman, Projects and Proposal Writing Committee for The Earth Observation Research and Innovation Center (EORIC)
6. August 2020 – to Date: Chairman, Research and Grants Committee. The Earth Observation Research and Innovation Center (EORIC)
7. February 2021: Member, Curriculum Development Committee. The Earth Observation Research and Innovation Center (EORIC)
8. August 2020 – to Date: Member, Innovation Committee. The Earth Observation Research and Innovation Center (EORIC)
9. February 2021 – to Date: Member, Curriculum Development Committee. The Earth Observation Research and Innovation Center (EORIC)
10. 2020 – to date: Examinations Officer, Civil, and Environmental Engineering Department
11. Chair (2021): Proposal for Centre for Environmental Health and Sanitation
12. Chair (2021): Curriculum Review Committee for MSc/MPhil/Ph.D. Computer Engineering, UENR
13. Chair (2021): Curriculum Review Committee for BSc Sustainable Mining, UENR
14. Member (2021): Curriculum Review Committee for BSc Accounting, UENR
15. Member (2021): Curriculum Review for BSc Environmental Engineering, Civil and Environmental Engineering, UENR
16. Committee Chair (2020): Developed Draft Strategic Plan for The Earth Observation Research and Innovation Center (EORIC)
17. Committee Chair (2020): Developed Draft Motivation Policy for The Earth Observation Research and Innovation Center (EORIC)
18. Member (Rep from Civil and Environmental Engineering Department) – Academic Board
19. 2021. Chair, Civil Panel D Assessors (Water and Environment). Ghana Institution of Engineering Professional Exams (June), Sunyani – Ghana
20. 2021. Member, Civil Panel A Assessors (Water and Environment). Ghana Institution of Engineering Professional Exams (July), Accra – Ghana

Visits

As part of a working visit to RCEES, Professor Robert Andoh of AWD Consult held a seminar for the postgraduate students (Both M.Sc. and Ph.D. Environmental Engineering and Management) of the Department

DEPARTMENT OF MECHANICAL AND MANUFACTURING ENGINEERING

The Department of Mechanical and Manufacturing Engineering of the University of Energy and Natural Resources (UENR) started in the 2013/2014 academic year. It admitted its first batch of seventy-three (73) students that same Academic Year in September, 2013. During the academic year, the department developed a four-year Bachelor of Science (BSc.) programme in Agricultural Engineering which was approved and subsequently began in the 2014/2015 Academic Year.

Administration of the Department

The following personnel constitute the Department Administration:

- » Ing. Dr. Emmanuel Amankwah Head of Department
- » Mr. George Nii Amon Dsane Senior Administrative Assistant

Academic Programmes

The Department has Two (2) Undergraduate Programmes.

Students

S/N	PROGRAMME	LEVEL	TOTAL NUMBER
1	BSc. Agricultural Engineering	100	20
		200	12
		300	10
		400	10
2	BSc. Mechanical Engineering	100	133
		200	121
		300	126
		400	89
TOTAL NUMBER OF STUDENTS			521

S/N	NAME	DESIGNATION
1.	Dr. Emmanuel Amankwah	Senior Lecturer/HoD
2.	Dr. Thomas Atta-Darkwa	Senior Lecturer
3.	Dr. Gilbert A. Akolgo	Senior Lecturer
4.	Dr. Edward Abingya Awafo	Lecturer
5.	Dr. Eric Akowuah	Lecturer
6.	Dr. Felix Uba	Lecturer
7.	Mr. Eric Essandoh	Lecturer
8.	Mr. Ebenezer Kumi Nyarko	Lecturer
9.	Mr. Prosper Acheaw Owusu	Lecturer
10.	Mr. Kofi Asamoah Adu-Poku	Lecturer
11.	Mr. Divine Mawunyo Ashigbi	Lecturer
12.	Mr. Duke Nii Darko Quaye	Assistant Lecturer
13.	Mr. Joseph Nyumutsu	Assistant Lecturer
14.	Mr. Daniel Kwasi Ansah	Assistant Lecturer
15.	Mr. Bright Osafo Adunu	Senior Technician
16.	Mr. Jedaiah Osman Awudu Akimsah	Senior Technician
17.	Mr. George Nii Amon Dsane	Snr. Administrative Assistant

Research Collaborations (Local and International)

There are Research collaborations ongoing on various projects with:

- Swiss Federal Laboratories for Materials Science and Technology (EMPA), Sweden
- One Ocean Hub project with University of Strathclyde
- 15 universities and municipalities across Africa, Eastern Europe and Latin America
- National Research Center of Pumps, Jiangsu University, Zhenjiang, 212013, China
- West African Science Service Center on Climate Change and Adapted Land Use (WASCAL)
- KNUST
- Council for Scientific and Industrial Research (CSIR)
- Kumasi Technical University (KsTU)

Workshops/Conferences/Public Lectures

Faculty Members in the Department attended the following workshops and conferences:

- Belt and Road “Forum for international Cooperation and Development on Agricultural Modernization and Second Plenary Session of the First Council of the International Cooperation Alliances on Agricultural Equipment, Zhenjiang-China.
- 7th Sino-Foreign Post-Graduate Academic Forum, Zhenjiang-China
- 14th Asian International Conference on Fluid Machinery, Zhenjiang-China.
- Program for the Construction Promotion meeting of National Center for International Research & 4th International Forum on Fluid Machinery and Engineering, Zhenjiang-China
- 2nd International Symposium on Cavitation and Multiphase flow, Zhenjiang-China
- Climate Research for Development (CR4D) Postdoctoral Climate Research Fellowships Closing Workshop organised jointly by the African Climate Policy Centre (ACPC), the African Ministerial Conference on Meteorology (AMCOMET), and the World Meteorological Organization (WMO) in Addis Ababa, Ethiopia (Virtual) from 21-23 June 2021
- National Policy Dialogue and Validation Meeting on Promoting Green Economy in Ghana organised jointly by United Nations Environment (UNEP) and Environmental Protection Agency (EPA) in Accra, 9 -11 December 2020

Proposals

- Proposal to develop a Mitigation Activity Design Document (MADD)- “National Clean Energy Access Programme (NCEP), Ghana. Submitted to EPA
- Proposal for UENR to provide technical assistance, as the National Technical Institution (NTI), with implementation of the Nationally Determined Contributions (NDC) Action Project in Ghana. Submitted to UNEP-DTU
- Proposal to conduct research on waste to energy as a solution to sustainable waste management in Ghana. Submitted to Zoomlion Ghana Ltd.

Grant and Awards

Name of Project: Renewable energies for Africa: effective valorisation of agri-food wastes (REFLECT Africa Project)

- i. Funding Agency: European Commission
- ii. Grant Amount: EUR 731,667.50
- iii. Implementation Period: 2021 to 2026

Catalyzing Climate Action Solutions for upscaling of Ecobased Adaptation (EBA) through targeted Productive Actions

- i. Funding Agency: United Nations Environment Programme (UNEP)
 - ii. Grant Amount: US\$ 98,600.00
 - iii. Implementation Period: 2021 -2022
- Energy System Modelling for the Real World: Transforming Modelling Approaches for Sustainable and Resilient Urban Development (SPIRIT Project)
 - i. Funding Agency: Swiss National Science Foundation (SNF)
 - ii. Grant Amount: CHF 49,704 (Swiss Francs)
 - iii. Implementation Period: 2020 -2023
 - Hybrid solar PV and waste-to-energy project in Ghana
 - i. Funding Agency: German Ministry of Education and Research (BMBF), Germany
 - ii. Grant Amount: EUR 111,000
 - iii. Implementation Period: 2020-2023

Publications (for the year under review)

KOFI ASAMOAH ADU-POKU:

1. Sunnu, A.K., K.A. Adu-Poku, and G.K. Ayetor. Production and Characterization of Charred Briquettes from Various Agricultural Wastes." Combustion Science and Technology (2021): 1-22
2. Akolgo, G.A., Awafo, E.A., Essandoh, E.O., Owusu, P.A., Uba, F. and Adu-Poku, K.A (2021). Assessment of the potential of charred briquettes of sawdust, rice and coconut husks: Using water boiling and user acceptability tests. Scientific African, 12, p.e00789.
3. Zhang, F., Chen, K., Appiah, D., Yuan, S., Adu-Poku, K.A. and Hong, F., (2021). Description of Unsteady Flow Characteristics in a Side Channel Pump with a Convex Blade. Journal of Fluids Engineering, 143(4), p.041201.
4. Zhang, F., Appiah, D., Chen, K., Yuan, S., Adu-Poku, K.A. and Wang, Y., (2020). Dynamic characterization of vortex structures and their evolution mechanisms in a side channel pump. Journal of Fluids Engineering, 142(11), p.111502.
5. F. Zhang, D. Appiah, F. Hong, J. Zhang, S. Yuan, K.A. Adu-Poku, and W. Xueyuan (2020). Energy Loss Evaluation in a Side Channel Pump under Different Wrapping Angles using Entropy Production Method. International Communications in Heat and Mass Transfer, 2020 (113,) <http://doi.org/10.1016/j.icheatmasstransfer.2020.104526>.

6. F. Zhang, Adu-Poku, K.A., Hu, B., D. Appiah, and Chen, K. (2020). Flow theory in the side chambers of the radial pumps: A review. *Physics of Fluids*, 32(4), 041301.
7. S. N. Asomani, Yuan, J., Wang, L., D. Appiah, and Adu-Poku, K.A. (2020). The Impact of Surrogate Models on the Multi-Objective Optimization of Pump-As-Turbine (PAT). *Energies*, 13(9), 2271.
8. F. Uba, E.O. Essandoh, G. Akolgo and K.A. Adu-Poku (2020). Determination of Attrition Rate of Locally Manufactured Plates for Corn Milling. *African Journal of Applied Research*, Vol. 6, No. 1 (2020), pp.13-32, <http://doi.org/10.26437/ajar.01.04.2020.02>.

EDWARD AWAFO:

1. Edward A. Awafo and Prosper Achaw Owusu (2021). Energy and water mapping of the cocoa value chain in Ghana. *Sustainable Production and Consumption*, 29(2022): 341-356 <https://doi.org/10.1016/j.spc.2021.10.027>
2. Gilbert Ayine Akolgo, Edward A. Awafo, Eric Osei Essandoh, Prosper A. Owusu, Felix Uba and Kofi A. Adu-Poku (2021). Assessment of the Potential of Charred Briquettes of Sawdust, Rice and Coconut Husks: Using Water Boiling and User Acceptability Tests. *Scientific African*, 12(2021) e00789. <https://doi.org/10.1016/j.sciaf.2021.e00789>
3. Edward A. Awafo and Joshua Amenorfe (2021). Techno-Economic Studies of an Industrial Biogas Plant to be implemented at Kumasi Abattoir in Ghana. *Scientific African*, 11 (2021) e00712. <https://doi.org/10.1016/j.sciaf.2021.e00712>
4. Edward A. Awafo and Victor K. Agyeman (2020). Development of biogas resources and technologies in Ghana, a survey. *International Journal of Energy and Environment*, 11(3): 167-178
5. Edward A. Awafo, Samuel Nketsiah, Mumin Alhassan, Ebenezer Appiah-Kubi (2020). Design, construction, and performance evaluation of an evaporative cooling system for tomatoes storage. *Agricultural Engineering*, 24(4):1-12. <https://doi.org/10.1515/agriceng-2020-0031>
6. Akolgo, G. A., Kemausuor, F., Awafo, Edward A., Amankwah, E., Atta-Darkwa, T., Essandoh, E. O. & de Freitas Maia, C. M. B. (2020). Biochar as a Soil Amendment Tool: Effects on Soil Properties and Yield of Maize and Cabbage in Brong-Ahafo Region, Ghana. *Open Journal of Soil Science*, 10(03), 91
7. Emmanuel Amankwah, Edward A. Awafo & Thomas Atta-Darkwah (2020). Socioeconomic Impact of Development Projects on the Livelihood of Farmers: A Case Study of the Bui Dam Hydroelectric Project. *Journal of Geography, Environment and Earth Science International*, 24(1), 34-44. <https://doi.org/10.9734/jgeesi/2020/v24i130192>

GILBERT AKOLGO:

1. Essandoh, E. O., Akolgo, G. A., Kumi, E. N., & Atta-Darkwa, T. (2021). Review and Analysis of Ghana's Power Sector Policies, Programmes and Reforms. *Journal of Energy and Natural Resource Management (JENRM)*, 7(1).
2. Uba, F., Essandoh, E. O., Akolgo, G. A., Opoku, R., Oppong-Kyereh, L., & Gyimah, E. A. (2021). Experimental Estimation of the Heat Transfer Coefficient of an Unglazed Solar Plate for Unsteady Humid Outdoor Condition. *Modelling and Simulation in Engineering*, 2021.
3. Gilbert Ayine Akolgo, Edward A. Awafo, Eric Osei Essandoh, Prosper A. Owusu, Felix Uba and Kofi A. Adu-Poku (2021). Assessment of the Potential of Charred Briquettes of Sawdust, Rice and Coconut Husks: Using Water Boiling and User Acceptability Tests. *Scientific African*, 12(2021) e00789. <https://doi.org/10.1016/j.sciaf.2021.e00789>
4. Akolgo, G. A., Kemausuor, F., Awafo, Edward A., Amankwah, E., Atta-Darkwa, T., Essandoh, E. O. & de Freitas Maia, C. M. B. (2020). Biochar as a Soil Amendment Tool: Effects on Soil Properties and Yield of Maize and Cabbage in Brong-Ahafo Region, Ghana. *Open Journal of Soil Science*, 10(03), 91
5. Uba, F., Essandoh, E. O., Akolgo, G. A., & Dzikunu, C. N. (2020). Thermal Performance of Flat Plate Solar Collectors for Humid and Unpredicted Weather using Air Properties and Energy Method. *International Journal of Technology and Management Research*, 5(4), 30-49.

EMMANUEL AMANKWAH:

1. G. E. Sebiawu, G.E, Mensah, J.N, Amankwah, E. & Antwi-Akomeah, E. (2020). Toxic Metal Contamination of Locally Produced Tobacco in Tamale Metropolis in Northern Region of Ghana. *Current Journal of Applied Science and Technology*, 39 (44), 15-25. DOI: 10.9734/CJAST/2020/v39i4431147
2. Sebiawu E. G., Mensah J. N. & Amankwah, E. (2020). Bioaccumulation of Heavy Metals Concentration in Some Selected Cereals Grown Near Illegal Mine Sites at Poyentanga in Wa of the Upper West Region, Ghana. *European Journal of Environment and Earth Sciences*, 1(3), 1-7. <http://dx.doi.org/10.24018/ejgeo.2020.1.3.7>
3. Atta-Darkwa, T., Asomaning, S. K., Agbeshie, A. A., Danso, E. O., Akolgo, G. A., Amankwah, E. & Owusu P. A. (2020). Assessment of physicochemical properties of Besease wetland soils, Ghana. *Afr. J. Agric. Res.*, 15 (4), 509 – 523. <https://doi.org/10.5897/AJAR2019.14547>
4. Akolgo, G.A., Kemausuor, F., Awafo, E.A., Amankwah, E., Atta-Darkwa, T., Essandoh, E.O., Bart-Plange, A. & de Freitas Maia, C.M.B. (2020) Biochar as a Soil Amendment Tool: Effects on Soil Properties and Yield of Maize and Cabbage in Brong-Ahafo Region, Ghana. *Open Journal of Soil Science*, 10,

- 91-108. <https://doi.org/10.4236/ojss.2020.103005>
5. Emmanuel, A., Edward, A., & Thomas, A.-D. (2020). Socioeconomic Impact of Development Projects on the Livelihood of Farmers: A Case Study of the Bui Dam Hydroelectric Project. *Journal of Geography, Environment and Earth Science International*, 24(1), 34-44. <https://doi.org/10.9734/jgeesi/2020/v24i130192>
 6. Thomas, A.-D., Ofosu, A.E., Emmanuel, A., De-Graft, A.J., Ayine, A.G., Asare, A. and Alexander, A. (2020) Comparison and Estimation of Four Infiltration Models. *Open Journal of Soil Science* , 10, 45-57. <https://doi.org/10.4236/ojss.2020.102003>

PROSPER ACHAW OWUSU:

1. Edward A. Awafo and Prosper Achaw Owusu (2021). Energy and water mapping of the cocoa value chain in Ghana. *Sustainable Production and Consumption*, 29(2022): 341-356 <https://doi.org/10.1016/j.spc.2021.10.027>
2. Gilbert Ayine Akolgo, Edward A. Awafo, Eric Osei Essandoh, Prosper A. Owusu, Felix Uba and Kofi A. Adu-Poku (2021). Assessment of the Potential of Charred Briquettes of Sawdust, Rice and Coconut Husks: Using Water Boiling and User Acceptability Tests. *Scientific African*, 12(2021) e00789. <https://doi.org/10.1016/j.sciaf.2021.e00789>

THOMAS ATTA-DARKWA:

1. Essandoh, E. O., Akolgo, G. A., Kumi, E. N., & Atta-Darkwa, T. (2021). Review and Analysis of Ghana's Power Sector Policies, Programmes and Reforms. *Journal of Energy and Natural Resource Management (JENRM)*, 7(1). <https://doi.org/10.26796/jenrm.v7i1.168>
2. Atta-Darkwa, T., Asomaning, S. K., Agbeshie, A. A., Danso, E. O., Akolgo, G. A., Amankwah, E., & Owusu, P. A. (2020). Assessment of physicochemical properties of Besease wetland soils, Ghana. *African Journal of Agricultural Research*, 15(4), 509-523.
3. Agbeshie, A.A, Abugri, S., Adjei, R., Atta-Darkwa, T., & Anokue, J. (2020). Impact of Land Use Types and Seasonal Variations on Soil Physico-chemical Properties and Microbial Biomass Dynamics in a Tropical Climate, Ghana. *Advances in Research* 21(1), 34-39
4. Atta-Darkwa, T., Antwi, E.O., Amankwah, E., Ankamah, D, J., Akolgo, G.A., Asare, A. and Antwi, A. 2020. Comparison and Estimation of Four Infiltration Models. *Open Journal of Soil Science*, 10, 45-57.
5. Akolgo, G. A., Kemausuor, F., Awafo, Edward A., Amankwah, E., Atta-Darkwa, T., Essandoh, E. O. & de Freitas Maia, C. M. B. (2020). Biochar as a Soil Amendment Tool: Effects on Soil Properties and Yield of Maize and Cabbage in Brong-Ahafo Region, Ghana. *Open Journal of Soil Science*, 10(03), 91

6. Emmanuel Amankwah, Edward A. Awafo & Thomas Atta-Darkwah (2020). Socioeconomic Impact of Development Projects on the Livelihood of Farmers: A Case Study of the Bui Dam Hydroelectric Project. Journal of Geography, Environment and Earth Science International, 24(1), 34-44. <https://doi.org/10.9734/jgeesi/2020/v24i130192>

Visits

There was an industrial visit to WEDDI Africa Tomato Factory in Berekum and Yedent Group of Companies in Abesim.

DEPARTMENT OF ENERGY AND PETROLEUM ENGINEERING

The Department was started in the first year of the University, 2012/13 as Department of Energy where the BSc. Renewable Energy Engineering was the only programme being ran at the time. In the following academic year 2013/14, the first batch of Environmental Engineering students were admitted to the University and to the department, leading to a change in the name of department to Department of Energy and Environmental Engineering. Subsequently, the Petroleum Engineering programme was added in the following academic year.

In the following years, the Department has downsized its undergraduate programmes leading to the Environmental Engineering programme being taken out to merge with the Civil Engineering programme. Hence, the Department of Energy and Petroleum Engineering was formed in the 2018/19 academic year.

Administration of the Department

The following personnel constitute the Department Administration:

- | | |
|-----------------------------|---------------------------------|
| » Dr. Felix Amankwah Diawuo | Acting Head of Department |
| » Ms. Matilda Asafo-Agyei | Senior Administrative Assistant |

Academic Programmes

The Department has Two (2) Undergraduate Programmes and Two (2) Postgraduate Programmes.

Undergraduate Programmes:

- » BSc Renewable Energy Engineering
- » BSc Petroleum Engineering

Postgraduate Programmes:

- » MSc Sustainable Energy Engineering and Management
- » PhD Sustainable Energy Engineering and Management

Staff and Students Statistics

Table 1.1 Student's Statistics (BSc. Petroleum Engineering)

LEVEL	Number of students
Level 100	80
Level 200	84
Level 300	80
Level 400	67
TOTAL	311

Table 1.2 Student's Statistics (BSc. Renewable Energy Engineering)

LEVEL	Number of students
Level 100	67
Level 200	46
Level 300	26
Level 400	35
TOTAL	174

Table 1.3 Student's Statistics (MSc. Sustainable Energy Engineering and Management)

ACADEMIC YEAR	Number of students
2019/2020	15
2020/2021	24
TOTAL	39

Table 1.4 Student's Statistics (PhD Sustainable Energy Engineering and Management)

ACADEMIC YEAR	Number of students
2019/2020	7
2020/2021	19
TOTAL	26

Table 1.5 Staff Statistics

Portfolios/Designation	Number
Associate Professor	2
Senior Lecturers	-
Lecturers	6
Assistant Lecturers	3
Technicians	1
Snr. Administrative Assistant	1
TOTAL	13

Names of Staff in the Department

S/N	NAME	DESIGNATION
1	Ing. Prof. Nana Agyemang Derkyi	Associate Professor
2	Ing. Prof. Samuel Gyamfi	Associate Professor
3	Dr. Felix Amankwaa Diawuo	Lecturer/ Ag. HoD
4	Dr. Yaw Boakye Ansah	Lecturer
5	Mr. Prosper Anumah	Lecturer
6	Mr. Shaibu Mohammed	Lecturer
7	Mr. Justice Sarkodie Kyeremeh	Lecturer
8	Mr. Emmanuel Acheaw	Lecturer
9	Mr. Anthony Morgan	Assistant Lecturer
10	Mr. Kwamena Opoku Duartey	Assistant Lecturer
11	Mr. Gyamfi-Yeboah Ebenezer	Assistant Lecturer
12	Mr. Warden Ivan Nyamekye	Senior Technician
13	Ms. Matilda Asafo-Agyei	Snr. Administrative Assistant

Research Collaborations (Local and International)

1. Research on Demand Response with the International Energy Studies Group lead by Stephane De la Rue du Can at Lawrence Berkeley National Laboratory, USA

Workshops/Conferences/Public Lectures

1. 7th Renewable Energy Fair. Energy Commission. Accra International Conference Centre, Ghana.
2. DSMS 2021. Oral Presentation. "Sensitivity of Travelling Wave Solutions to Richards' Equation to Soil Material Property Functions"
3. BMC/BAMC 2021. March 2021. Virtual Conference. "Similarity solutions for early-time infiltration in foams and soils"
4. 6th African Centers of Excellence for Development Impact (ACE Impact) Virtual Regional Fall Workshop. November 9 – 10th, 2021
5. Capacity Building workshop/Training on Safeguards; Monitoring & Evaluation and Endowment Management under the First Africa Higher Education Centers of Excellence for Development Impact (ACE Impact) Project, Organize by the Ghana Tertiary Education Commission (GTEC). Capital View Hotel, Koforidua, September 20-25, 2021
6. 5th African Centers of Excellence for Development Impact (ACE Impact) Virtual Regional Spring Workshop, May 24 – 28, 2021
7. Energy Audit Pilot Study/Workshop for the Sustainable Energy Service Centers (SESC). Organize by Millennium Development Authority (MiDA) and Development Enviroenergy Services Limited (DESL). Suncity Hotel, Sunyani, April 19- 23.

Proposals

1. Market Entry into Renewable Energy (RE) and Energy Efficiency (EE) for the Productive Sector
2. Green People's Energy Project of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ-Ghana)
3. Mobility for Sub-Saharan Africa - Sustainable thought over the life cycle (MoNaL).project

Grant and Awards

1. Two faculty members have been awarded scholarships to study Ph.D. Petroleum Engineering at the New Mexico Tech. University.
2. Level Up local markets by utilizing biogenic residues. Federal Ministry of Education and Research, Germany funded project, to turn waste to electricity for UENR Campus. (€ 1, 700,000.00).
3. Erasmus+ Project no. 586416 - Enhancing Entrepreneurship, Innovation,

and Sustainability in Higher Education in Africa (EEISHEA); funded by the European Union (€ 968,898 for the Consortium of 10 Universities)

4. Establishment of Sustainable Energy Service Centre by Millennium Development Authority (MiDA) and the Energy Commission of Ghana
5. Energy Audit Measuring and Instrumentation Equipment from the Millennium Development Authority (MiDA)
6. Delivery of 3 electric moped bikes through the MoNAL project

Funding of Research Activities

1. Hosting of Sustainable Energy Service Centres (SESCs)

Regional Centre for Energy and Environmental Sustainability (RCEES) in Consortium with Sunyani Technical University, Kumasi Technical University and the Energy Foundation was selected to host one of the three Sustainable Energy Service Centres (SESC) in Ghana established by the Millennium Development Authority (MiDA) under the Millennium Challenge Compact (MCC). The SESC are to provide tertiary education services including training and certification of energy auditors and sustainable energy (SE) services for promoting SE market under the Energy Efficiency and Demand Side Management (EEDSM) component of the Compact Program. RCEES is the leader of this consortium.

2. Gendered Design in STEAM (GDS) in Lower and Middle-income Countries (LMIC)

A sub-award from Carleton University, Canada on Gendered Design in STEAM (GDS) in Lower and Middle-income Countries (LMIC). The overall objective of the GDS program is to build capacity for research, design and dissemination of gendered innovations in Science, Technology, Engineering, the Arts and Mathematics (STEAM), addressing challenges predominantly faced by women in LMICs. RCEES Work Package under the programme is to develop “Energy access strategy for disadvantaged communities in Ghana” period starting from September 1, 2020 and ending on April 30, 2022. The project has offered two scholarships; one to a PhD student and another to an MSc Student.

3. Market Entry into Renewable Energy (RE) and Energy Efficiency (EE) for the Productive Sector:

Partnership between The Energy Service Centre of the Association of Ghana Industries (AGI-ESC) and RCEES-UENR to provide hands-on-training to commercial and industrial electricity consumers and service providers in renewable energy (RE) and energy efficiency (EE) under the auspices of the GIZ Market Entry into Renewable Energy (RE) and Energy Efficiency (EE) for the Productive Sector in Ghana project. The duration of this partnership is shall be 14 months.

Publications (for the year under review)

1. Diawuo FA, De la Rue du Can S, Baptista PC, Silva CAS (2021) Assessing the impact of demand response on peak demand in a developing country : The case of Ghana. IOP Conf Ser Earth Environ Sci 642: <https://doi.org/10.1088/1755-1315/642/1/012005>
2. Diawuo F.A., Scott I.J., Baptista P.C., Silva C.A., 2020. Assessing the costs of contributing to climate change targets in sub-Saharan Africa: The case of the Ghanaian electricity system. *Energy Sustain Dev* 2020;57:32–47. doi:10.1016/j.esd.2020.05.001
3. Diawuo F.A., Sakah M, de la Rue du Can S., Baptista P.C., Silva C.A., 2020. Assessment of multiple-based demand response actions for peak residential electricity reduction in Ghana. *Sustain Cities Soc* 2020;59:102235.
4. Diawuo F.A., 2020. Lighting Energy Need and Sustainability. In: W. LF, A. A, L. B, et al. (eds) *Affordable and Clean Energy*, Encyclopedia of the UN Sustainable Development Goals. Springer Nature, pp 1–13. https://doi.org/10.1007/978-3-319-71057-0_45-1.
5. Boakye-Ansah, Y.A., Grassia, P. Similarity solutions for early-time constant boundary flux imbibition in foams and soils. *Eur. Phys. J. E* 44, 111 (2021). <https://doi.org/10.1140/epje/s10189-021-00112-y>
6. Boakye-Ansah, Y.A., Grassia, P. Comparing and Contrasting Travelling Wave Behaviour for Groundwater Flow and Foam Drainage. *Transp Porous Med* 137, 255–280 (2021). <https://doi.org/10.1007/s11242-021-01562-w>
7. Aboagye B., Gyamfi, S., Antwi E. O, Djordjevic, S. (2021) Degradation analysis of installed solar photovoltaic (PV) modules under outdoor conditions in Ghana. *Energy Reports* 7 (2021) 6921–6931. <https://doi.org/10.1016/j.egy.2021.10.046>
8. Iweh C.D., Gyamfi S., Tanyi E., Effah-Donyina E. (2021) Distributed Generation and Renewable Energy Integration into the Grid: Prerequisites, Push Factors, Practical Options, Issues and Merits. *Energies* 2021, 14, 5375. <https://doi.org/10.3390/en14175375>
9. Avordeh T. K, Gyamfi S, Opoku A. A. (2021) Quantitative estimation of the impact of climate change on residential electricity demand for the city of Greater Accra, Ghana *International Journal of Energy Sector Management*. Emerald Publishing Limited 1750-6220. <https://doi.org/10.1108/>

10. Ayebah A. I., Gyamfi S., Amuzuvi C. K. (2021) Making Energy Savings by the Engagement of Small and Medium-sized Enterprise on Energy Management. *Journal of Electrical and Electronic Engineering* 2021; 9(2): 41-48. <https://doi.org/10.11648/j.jee.20210902.12>
11. Asuamah Y. E., Gyamfi, S., Dagoumas A. (2021) Potential of meeting electricity needs of off-grid community with mini-grid solar systems. *Scientific African* Volume 11(2021). <https://doi.org/10.1016/j.sciaf.2020.e00675>.
12. Aboagye B., Gyamfi, S., Antwi E. O, Djordjevic, S. (2021) Status of renewable energy resources for electricity supply in Ghana. *Scientific African* Volume 11 (2021) <https://doi.org/10.1016/j.sciaf.2020.e00660>.
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14. Domfeh M. K, Gyamfi S., Amo-Boateng M., Andoh R., Antwi E. O., Tabor G. (2020). Numerical Simulation of an Air-Core Vortex and Its Suppression at an Intake Using OpenFOAM Fluids (2020), 5, 221; doi:10.3390/fluids5040221.
15. Domfeh M. K, Gyamfi S., Amo-Boateng M., Andoh R., Antwi E. O., Tabor G. (2020) Numerical Simulation of an Air-core Vortex at a Hydraulic Intake Using OpenFOAM. *Scientific African* Volume 8 (2020) <https://doi.org/10.1016/j.sciaf.2020.e00389>.
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17. Domfeh M. K, Gyamfi S., Amo-Boateng M., Andoh R., Antwi E. O., Tabor G. (2020) Free Surface Vortices at Hydropower Intakes: –A State-of-the-Art Review *Scientific African* Volume 8, July 2020. <https://doi.org/10.1016/j.sciaf.2020.e00355>.
18. Obeng M., Gyamfi S., Derkyi N. S., Kobo-bah T. A, Peprah F. (2020) Technical and Economic Feasibility of a 50 MW Grid-connected Solar PV at UENR Nsoatre Campus. *Journal of Cleaner Production*. 247, 20 Feb 2020, 119159. <https://doi.org/10.1016/j.jclepro.2019.119159>
19. Aboagye B., Gyamfi, S., Caesar Puoza, J. (2020) Performance Enhancement of Solar Photovoltaic Module by the Application of Different Coolants

- over the Photovoltaic Module Surface. Journal of Energy and Natural Resource Management (JENRM). JENRM, Vol. 6, No. 1, 1-6, 2020. <https://doi.org/10.26796/jenrm.v6i1.161>
20. Yin Luo,¹ Wenqi Zhang,¹ Yakun Fan,¹ Yuejiang Han,¹ Weimin Li,² and Emmanuel Acheaw¹, Analysis of vibration characteristics of a centrifugal pump mechanical seal under wear and damage degree” Hindawi, Shock and Vibration 2021, Article ID 6670741, <https://DOI.org/10.1155/2021/667074>
 21. Shaibu Mohammed, E.K. Nyantakyi, A. Morgan, P. Anumah. Use of relative extra citation counts and uncited publications to enhance the discriminatory power of the h-index, Scientometrics, 2021, Volume 126, 181-199(2021). <https://doi.org/10.1007/s11192-020-03777-y>
 22. Shaibu Mohammed, Morgan, A. & Nyantakyi, E. On the influence of uncited publications on a researcher’s h-index. Scientometrics 122, 1791-1799 (2020). <https://doi.org/10.1007/s11192-020-03356-1>
 23. Shaibu Mohammed, Prosper Anumah, Justice Sarkodie-Kyeremeh, Emmanuel Acheaw. A production-based model for a fractured well in unconventional reservoirs. Journal of Petroleum Science and Engineering, Volume 206, November 2021, 109036. <https://doi.org/10.1016/j.petrol.2021.109036>

Community Engagements

- a. 7th Renewable Energy Fair
- b. The Gas Challenge
- c. National Energy Summit
- d. National Energy Quiz

Visits

1. Visit of Mr. Michele Velenderić (Managing Director) Green Power Brains Company, Munich, Germany for the Department to collaborate with his Company, Bochum University of Applied Sciences, and the Japanese Company in the fields of off-grid electrification, mini-grid power trade with Blockchain technology, electromobility, circular economy, and food production.
2. A delegation from Ghana National Gas Company visits for discussion on Gas Challenge 2021.
3. A visit by Mr. Humphrey Tetteh, CEO of Eastern Star Awards Company on the National Energy Quiz and Innovation Challenge.

DEPARTMENT OF COMPUTER AND ELECTRICAL ENGINEERING

The Department of Computer and Electrical Engineering which is under the School of Engineering was established in the year 2012 and currently runs undergraduate Programmes in:

- a. BSc. Electrical and Electronic Engineering
- b. BSc. Computer Engineering and
- c. Diploma in Electrical and Electronic Engineering

Departments and Research Centres /Institutes

The core objective of the department is to train creative and innovative minds that are equipped with competence, and state-of-the-art knowledge in Electrical and Computer Engineering principles, which could enable them to address the dynamic, complex, and challenging problems that confronts societies of today.

To ensure continuous professional development for the teaching staff, as well as contribute to cutting-edge technology to the engineering community, the department engages itself in four (4) key research areas. These are:

1. ELECTRICAL POWER SYSTEMS
2. SMART GRID, EMBEDDED INTELLIGENCE, DISTRIBUTED AND CYBER-PHYSICAL SYSTEMS
3. 5G AND IOT NETWORKS
4. ELECTRONICS AND TELECOMMUNICATION

Administration of the Department

The following personnel constitute the Department Administration:

- | | |
|---------------------------|------------------------------------|
| » Ing. Isaac Kofi Otchere | Acting Head of Department |
| » Mrs. Ellen Baidoo | Principal Administrative Assistant |

Academic Programmes

The Department has Two (2) Undergraduate Programmes and One (1) Diploma Programme.

- » BSc. Electrical and Electronic Engineering
- » BSc. Computer Engineering
- » Diploma in Electrical and Electronic Engineering

2020/2021 Academic Year**Computer and Electrical Engineering Department Student Statistics**

	Level 100	Level 200	Level 300	Level 400	Total
Electrical Engineering-Regular	149	157	151	117	574
Computer Engineering - Regular	99	98	54	60	311
Electrical Engineering-Weekend	na	32	22	31	85
Diploma Electrical Engineering	36	63	na	na	99
	284	350	227	208	1069

Names of Staff in the Department

S/N	NAME	DESIGNATION
1	Mr. Isaac Kofi Otchere	Lecturer/ Ag. HoD
2	Nana Prof. K. Diawuo	Associate Professor
3	Mr. Samuel Tweneboah-Koduah	Lecturer
4	Mr. Samuel Osei Fobi	Lecturer
5	Mr. Andrew Quansah	Lecturer
6	Mr. Nana Twum Duah	Lecturer
7	Mr. Kwabena Amoako Kyeremeh	Lecturer
8	Mr. John Gyabaah Ansu	Lecturer
9..	Mr. Desmond Okwabi Ampofo	Lecturer
10	Mr. Kankam Okatakyie Adu	Lecturer
11	Mr. Joseph Owusu	Assistant Lecturer
12	Mr. Joshua Dantuo	Assistant Lecturer
13	Mr. Frank Ofori	Senior Technician
14	Mrs. Ellen Baidoo	Principal Admin. Assistant

Research Collaborations (Local and International)

The department is currently developing a research collaboration with Electrical and Electronic Engineering Department of Kwame Nkrumah University of Science and Technology, KNUST – Ghana (Local)

Furthermore, the department has developed research collaboration with the

Computer Engineering department of University of Northampton, UK.

Workshops/Conferences/Public Lectures

The staff has been engaged in the following activities for 2020/2021 academic year

Workshops

1. The Article Publishing Process Series- Elsevier- 2021
2. Stakeholder Engagement on Port of Keta Project- GPHA- GhIE-2021
3. 7th Ghana Renewable Energy Fair- Accra -2021
4. 6th Ghana Renewable Energy Fair- Accra -2020
5. Electrical Safety and Industrial Automation- IEEE Power Africa- 2021

Conferences:

1. IEEE 30th International Symposium on Industrial Electronics- Tyoko-2021
2. IEEE Symposium on Computer Applications and Industrial Electronics- 2020
3. 7th Edition of the Africa Engineering Week and 5th Africa Engineering Conference-2021
4. IEEE AFRICON
5. International Conference on Computing, Computational Modelling and Applications
6. IEEE Power Africa Conference – Kenya- 2021
7. IEEE Power Africa Conference – Kenya - 2020
8. The Ultimate Conference – UENR – Sunyani- 2021
9. IEEE Conference on Adaptive Science and Technology- Accra
10. 1st ASRIC Conference on Engineering Science
11. 6th International Conference on Signal and Image Processing- China

Public Lectures

1. Addressing Challenges facing Ghana's Power Sector- GhIE-KNUST -2021
2. Ameri Plant Relocation – GhIE Electrical / Electronic Technical Division Workshop

Proposals

The department has submitted some proposal for some projects. The proposals are currently under review.

Grant and Awards

The department won the following awards for the 2020/2021 academic year:

1. Best Student – GhIE Electrical and Electronic Division Examination- 2020
2. 1st and 2nd positions for GMES and Africa Incubation Challenge 2021

Funding of Research Activities

The department currently depends on its own IGF for funding of research activities. Steps are being taken to sign an MoU with Energy Industries to help support the department in area of research and publication.

Publications (for the year under review)

Staff of the Department of Computer and Electrical Engineering produced 8 refereed journal articles, 16 conference papers and one book chapter for the 2020/2021 academic year.

Community Engagements

The Department in partnership with GhIE, Bono Ahafo Region engaged the Sunyani community

Visits

The Department visited the following companies

1. Ghana Grid Company Limited (GRIDCO). Kintampo and Sunyani Substation
2. Newmont Ghana Limited- Ahafo Mines
3. Northern Electricity Development Company, (NEDCO)- Sunyani Substation

REGIONAL CENTRE FOR ENERGY AND ENVIRONMENTAL SUSTAINABILITY (RCEES) EST. 2019

The Regional Centre for Energy and Environmental Sustainability (RCEES) is an African Centre of Excellence committed to providing quality teaching, learning, and research to advance the development of future leaders in the disciplines of Energy and Environment.

The Centre provides accredited tailor-made postgraduate programmes in the fields of Energy and Environment with the aim to develop and train expertise geared towards universal energy access, energy efficiency, and promoting renewable energy. We are committed to focusing on themes related to climate change adaptation, the environmental impact of energy production and use, environmental sustainability and other relevant areas.

Academic Programmes

RCEES offers cutting-edge Master's and Doctoral programmes, and short courses with an unparalleled student-centered learning experience for skills and competencies development. We provide our students with the relevant skills and training to ensure their competitiveness and immense contribution to society through innovative discoveries and applications. Our postgraduate research programs are the hallmark of the RCEES as a Centre of excellence.

Postgraduate Programmes

- a. MSc/PhD Sustainable Energy Engineering and Management
- b. MSc/PhD Environmental Engineering and Management

Administration of the Centre

The following personnel constitute the Centre's Administration:

- | | |
|------------------------------------|----------------------------|
| 1. Ing. Prof. Ing Eric Antwi Ofosu | Director |
| 2. Ing. Prof. Samuel Gyamfi | Deputy Director |
| 3. Samuel Akowuah Okyereh | Centre Coordinator |
| 4. Eric L. Mwintome | Junior Assistant Registrar |

Staff and Students Statistics

A Director and a Deputy Director are in charge for the day-to-day administration lead of the Centre. Two research and two assistant research fellows support them. Teaching and research are done in collaboration with the Department of Energy and Petroleum and the Department of Civil and Environmental Engineering. The Centre has a Junior Assistant Registrar, (2) Administrative Assistants, an IT officer, and a Procurement Assistant.

The Centre has (138) students from (12) African countries including Ghana. The students in the Centre are from Gambia, Senegal, Sierra Leone, Ivory Coast, Togo, Benin, Zimbabwe, Cameroon, Chad, Nigeria and Burkina Faso. 28 (22%) of the current students are female and 26 (20%) of the students are from outside Ghana. The Centre has trained 160 students in professional short courses over the past year.

Research Collaborations (Local and International)

1. Gendered Design in STEAM (GDS) in Lower and Middle-income Countries (LMIC)

Sub-award from Carleton University, Canada on Gendered Design in STEAM (GDS) in Lower and Middle-income Countries (LMIC). The overall objective of the GDS program is to build capacity for research, design and dissemination of gendered innovations in Science, Technology, Engineering, the Arts and Mathematics (STEAM), addressing challenges predominantly faced by women in LMICs. RCEES Work Package under the programme is to develop an Energy access strategy for disadvantaged communities in Ghana” period starts from September 1, 2020 and ends on April 30, 2022. The project has offered two scholarships; one to a PhD student and another to an MSc Student.

2. Hosting of Sustainable Energy Service Centres (SESCs)

RCEES in Consortium with Sunyani Technical University, Kumasi Technical University and the Energy Foundation was selected to host one of the three Sustainable Energy Service Centres (SESC) in Ghana established by the Millennium Development Authority (MiDA) under the Millennium Challenge Compact (MCC). The SESC are to provide tertiary education services including training and certification of energy auditors and sustainable energy (SE) services for promoting SE market under the Energy Efficiency and Demand Side Management (EEDSM) component.

3. MoNaL

The MoNaL project aims to create sustainable mobility opportunities for sub-Saharan Africa countries. The impact of the mobility offer is considered, improved and verified through Life Cycle Assessment (LCA) throughout the entire life cycle – from vehicle production and design to energy supply to vehicle recycling and energy supply infrastructure. Funded by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), Germany.

Partners, Bochum University, UENR, Don Bosco Solar Training Centre

4. Turnkey Solar Irrigation Project with GIZ

GIZ and the Ministry of Energy (MoEn) are jointly implementing a project dubbed “Green People’s Energy”, a proposed country measure of a global project commissioned by the German Federal Ministry of Economic Cooperation and Development (BMZ).

The ‘Green People’s Energy (PGE)’ Project has an overall objective to improve conditions for supplying rural regions in selected African countries, including Ghana, with decentralized renewable energy. The project supports the adoption of modern energy services through the introduction of alternative and sustainable renewable energy and energy-efficient technologies with the participation of citizens and businesses.

Workshops/Conferences/Public Lectures

1. *The challenges of Energy transition in West Africa* **August 2021** by Professor Chukwuemeka J. Diji.

Chukwuemeka Jude Diji is currently an Associate Professor of Mechanical Engineering and the Deputy Vice-Chancellor for Research, Innovation, Consultancy and Extension (DVC –RICE) for Kampala International University, Kampala, Uganda. Prior to that, he served as Head of the Department of Mechanical Engineering of the University of Ibadan, Nigeria (2015 – 2017)

Diji obtained a PhD in Mechanical Engineering in 2008, and a Master of Science Degree (MSc) in Mechanical Engineering in 1997 from the University of Ibadan. He also holds a Bachelor of Science Degree (B.Sc) in Mechanical Engineering from the Obafemi Awolowo University (Formerly University of Ife) in 1987. He has a professional postgraduate qualifying Diploma in Management Consultancy Practice and Organizational Transformation from the International Professional Managers Association (IPMA – UK).

2. Workshop on Open Flow and computational fluid dynamics by Prof Robert Andoh

Professor Bob Andoh is a Technical Advisor with AWD Consult Inc., a Water and Environmental Systems Consultancy that provides Training and Technical Advisory Services. He is affiliated with Liverpool John Moores University in the UK where he is a visiting professor and the University of Energy and Natural Resources in Sunyani, Ghana where he serves on the International Scientific Advisory Board of the Regional Centre for Energy and Environmental Sustainability. He also serves on Thames Water (UK) Plc’s IAG Group (a team of leading industry experts) providing independent advisory inputs into Flood Alleviation Schemes. He is a former

Chief Technology Officer and Director of Innovation for Hydro International plc where he managed a high-performance team developing and commercializing a range of award-winning water and environmental technologies. He focused his efforts on overseeing high-level marketing and product sales support operations, technology integrations related to acquisitions, and leading training for new global distributors. Bob Andoh earned his Bachelor of Science in Civil Engineering from the University of Science and Technology in Ghana and received both his Master of Science in Public Health Engineering and his Ph.D. in Public Health Engineering from Imperial College in London. He has authored and presented over 200 technical papers, articles and op-ed pieces relating to water and environmental management systems.

3. Workshop on Thesis Supervision, January 2021 by Prof Christopher Gordon

Prof Chris Gordon is an Environmental Scientist with special interests in the biodiversity and functioning of coastal, wetland and freshwater systems, and many years of experience as a limnologist and aquatic resource management advisor. As an academician and a consultant, he has in-depth and extensive knowledge of ecosystem functioning and conservation in the various ecosystems he has worked on, such as the Volta River Basin, aquaculture, coastal wetland and large river and estuarine systems. Prof Gordon has played an active role in biodiversity conservation and ecosystem management initiatives, particularly in water, coastal wetland and catchment basin conservation issues. He has considerable experience working with international bodies such as the GEF, UNEP, FAO, UNDP, DFID (former ODA) DANIDA, IDRC, DGIS, as well as national and international NGOs. Over the past 30 years, Prof Gordon has provided guidance on various national policies, strategies and action plans.

4. Staff at the Centre took part in the following workshops

- a. 6th African Centers of Excellence for Development Impact (ACE Impact) Virtual Regional Fall Workshop. November 9 – 10th, 2021
- b. Capacity Building Workshop/Training on Safeguards; Monitoring & Evaluation and Endowment Management under the First Africa Higher Education Centres of Excellence for Development Impact (ACE Impact) Project, Organized by the Ghana Tertiary Education Commission (GTEC). Capital View Hotel, Koforidua, September 20-25, 2021
- c. 5th African Centers of Excellence for Development Impact (ACE Impact) Virtual Regional Spring Workshop, May 24 – 28, 2021
- d. Energy Audit Pilot Study/Workshop for the Sustainable Energy Service Centers (SESC). Organize by Millennium Development Authority (MiDA) and Development Environenergy Services Limited (DESL). Suncity Hotel, Sunyani, April 19- 23.

Proposals

Centre for Competence in Digital Education (C – CoDE) project

Through its Digital Education pillar, the Excellence in Africa initiative aims to promote the sustainable integration of digital education in African universities. Selected institutions receive support in the form of expertise and funding. The creation of Centres of Competence in Digital Education (C-CoDE) includes:

1. training in the technical and pedagogical aspect of digital education, and
2. building the necessary infrastructure to produce quality digital educational content, such as Massive Open Online Courses (MOOCs) and Open Educational Resources (OER).

Grant and Awards

Sustainable Dam Project

The project seeks to investigate the management and planning of hydropower generation in West Africa under climate change and land use/land

Funding of Research Activities

African Centres for Development Impact (ACE Impact) project

Publications (for the year under review)

- 1) Aboagye B., Gyamfi, S., Antwi E. O, Djordjevic, S. (2021) Degradation analysis of installed solar photovoltaic (PV) modules under outdoor conditions in Ghana. *Energy Reports* 7 (2021) 6921–6931. <https://doi.org/10.1016/j.egy.2021.10.046>
- 2) Iweh C.D., Gyamfi S., Tanyi E., Effah-Donyina E. (2021) Distributed Generation and Renewable Energy Integration into the Grid: Prerequisites, Push Factors, Practical Options, Issues and Merits. *Energies* 2021, 14, 5375. <https://doi.org/10.3390/en14175375>
- 3) Avordeh T. K, Gyamfi S, Opoku A. A. (2021) Quantitative estimation of the impact of climate change on residential electricity demand for the city of Greater Accra, Ghana *International Journal of Energy Sector Management*. Emerald Publishing Limited 1750-6220 DOI 10.1108/IJESM-08-2020-0008
- 4) Ayebah A. I., Gyamfi S., Amuzuvi C. K. (2021) Making Energy Savings by the Engagement of Small and Medium-sized Enterprise on Energy Management. *Journal of Electrical and Electronic Engineering* 2021; 9(2): 41-48 [10.11648/j.jeee.20210902.12](https://doi.org/10.11648/j.jeee.20210902.12)
- 5) Asuamah Y. E., Gyamfi, S., Dagoumas A. (2021) Potential of Meeting Electricity Needs of Off-grid Community with Mini-grid Solar Systems. *Scientific African* Volume 11(2021). <https://doi.org/10.1016/j.sciaf.2020.>

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- 6) Aboagye B., Gyamfi, S., Antwi E. O, Djordjevic, S. (2021) Status of Renewable Energy Resources for Electricity Supply in Ghana. Scientific African Volume 11 (2021) <https://doi.org/10.1016/j.sciaf.2020.e00660>.
- 7) Aboagye B., Gyamfi S., Caesar Puoza J, Obeng M. (2020) Techno-economic Feasibility Analysis of Solar Photovoltaic System for Single Households in Peri-urban Areas in Kumasi, Ghana. International Journal of Sustainable Energy Development (IJSED), Volume 8, Issue 1, 2020. 10.20533/ijсед.2046.3707.2020.0047
- 8) Domfeh M. K, Gyamfi S., Amo-Boateng M., Andoh R., Antwi E. O., Tabor G. (2020). Numerical Simulation of an Air-Core Vortex and Its Suppression at an Intake Using Open FOAM Fluids (2020), 5, 221; doi:10.3390/fluids5040221.
- 9) Domfeh M. K, Gyamfi S., Amo-Boateng M., Andoh R., Antwi E. O., Tabor G. (2020) Numerical Simulation of an Air-core Vortex at a Hydraulic Intake Using OpenFOAM. Scientific African Volume 8 (2020) <https://doi.org/10.1016/j.sciaf.2020.e00389>.
- 10) Osabutey G. Opoku A. A., Gyamfi S. (2020) A Statistical Mechanics Approach to the Study of Energy Use Behaviour. Journal of Applied Mathematics Volume 2020, Article ID 7384053, 14 pages <https://doi.org/10.1155/2020/7384053>.
- 11) Domfeh M. K, Gyamfi S., Amo-Boateng M., Andoh R., Antwi E. O., Tabor G. (2020) Free Surface Vortices at Hydropower Intakes: –A State-of-the-Art Review Scientific African Volume 8, July 2020. <https://doi.org/10.1016/j.sciaf.2020.e00355>.
- 12) Obeng M., Gyamfi S., Derkyi N. S., Kabo-bah T. A, Peprah F. (2020) Technical and Economic Feasibility of a 50 MW Grid-connected Solar PV at UENR Nsoatre Campus. Journal of Cleaner Production. 247, 20 Feb 2020, 119159. <https://doi.org/10.1016/j.jclepro.2019.119159>
- 13) Aboagye B., Gyamfi, S., Caesar Puoza, J. (2020) Performance Enhancement of Solar Photovoltaic Module by the Application of Different Coolants over the Photovoltaic Module Surface. Journal of Energy and Natural Resource Management (JENRM). JENRM, Vol. 6, No. 1, 1-6, 2020. <https://doi.org/10.26796/jenrm.v6i1.161>

Community Engagements

1. Installation of Solar PV Systems in island communities in Krachi East and West constituencies in the Oti region
2. Installation of Solar Street lights in rural communities around Bui
3. Installation of Solar Street lights at the Ghana Police Service Headquarters in Accra
4. Installation of Solar Home Systems in CHIP compound in Hamile
5. Installation of Solar Street lights at the Liberation Barracks, in Sunyani

6) EARTH OBSERVATION RESEARCH & INNOVATION CENTRE (EORIC)

EORIC is a research arm of the University of Energy and Natural Resources (UENR)-Sunyani, responsible for the acquisition of near real-time satellite-based data, airborne 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 programs 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.

DIVISIONS/SECTIONS

1. Air, Weather & Climate Informatics
2. Earth and Oceans Observation
3. Remote Sensing and GIS
4. Satellite Operations and Communication
5. Matter & Energy Fluxes
6. Innovative Geo-Computing
7. Unmanned Aerial Systems
8. Projects, Services and Partnership Office
9. Technical Support Office

ACADEMIC PROGRAMMES

- Climate Change Atmospheric Physics (CCAP) Postgraduate Programme yet to be implemented between UENR and AIMS-Ghana

Training Programmes/Workshops

- Applied Satellite Technology for Integrated Resource Management
- Introduction to Computational Fluid Dynamics using OpenFOAM
- Understanding Climate Change with Space Science
- Understanding DVBS2, DVBT2 & DVB-H in Satellite Technology
- Geospatial Analysis with R
- Applied Remote Sensing for Vegetation Mapping
- Fundamentals of Accelerated Computing with CUDA C/C++
- SATCOM Professional Certification Short Course

Administration of the Centre

The following personnel constitute the Research Centre:

- | | |
|--------------------------------------|------------------------------------|
| 1. Ing. Dr. Emmanuel Kwesi Nyantakyi | Head |
| 2. Mrs. Irene Yeboah Asare | Junior Assistant Registrar (JAR) |
| 3. Mrs. Irene Asantewaa Appiah-Fei | Principal Administrative Assistant |
| 4. Ing. Dr Prince Antwi-Agyei | Chairman, Projects & Proposal |
| 5. Ing. Dr Mark Amo-Boateng | Chairman, Innovations |
| 6. Mr. Caleb Mensah, Chairman | Carbon Tower |
| 7. Ing. Dr. Martin Kyereh Domfeh | Research Fellow |
| 8. Dr. Mrs. Kamila Kabo-Bah | Research Fellow |
| 9. Mr. Francis Kudjoe | Assistant Research Fellow |
| 10. Mr. Eric Mortey | Assistant Research Fellow |
| 11. Mr. Ebenezer K. Siabi | Assistant Research Fellow |
| 12. Mr. Cosmos Senyo Wemegah | Assistant Research Fellow |
| 13. Miss Precious Opoku Dapaah | Assistant Research Fellow |
| 14. Ing. Nana Ekow Nkwa Sey | Ground Systems Manager |
| 15. Mr. Amprofi Ampah Amproche | GIS & Remote Sensing Analyst |
| 16. Mr. Trinity Quashie Ellogah | Electrical & Electrical Technician |
| 17. Mr. Evans Yaw Adom | Satellite Field Technician |

Staff and Students Statistics

Number of Interns: 12

RESEARCH COLLABORATIONS (Local and International)

Local

- Ghana National Fire Service
- Forestry Commission of Ghana
- Forestry Research Institute of Ghana
- AIMS -Ghana
- Ghana Space Science and Technology Institute (GSSTI)
- National Disaster Management Organisation (NADMO)

International

- National Oceanic & Atmospheric Administration (NOAA) – USA
- University Cooperation for Atmospheric Research (UCAR) -USA
- Atlas Space Operations – USA
- Spire Global – USA
- Orbital Systems, USA
- Media Broadcast-Satellite – Germany
- Global Change Research Institute CAS (CzechGlobe) – Czech Republic

Workshops/Conferences/Public Lectures Attended by Staff

Some members of staff participated the following capacity building activities:

- 9th -12th November 2021: Virtual Training School and workshop on Aerosol Detection and Monitoring, Eumetsat, Darmstadt, Germany
- 25th -27th October 2021: Capacity Building Workshop on Geographic Information System on Amazon Web Services, Ghana Space Science and Technology Institute, Accra
- 13th -15th September 2021: 2nd Summer School on Solar Radiation Based Established Techniques for Atmospheric Observations, ISAC-CNR, European Space Agency and Sapienza University, Rome, Italy
- 16th – 27th August 2021: Virtual NASA/Centre for Climate Science /Keck Institute for Space Studies Summer School on Using Satellite Observations to Advance Climate Models
- 21st -25th June 2021: Eastern Africa GNSS and Space Weather Capacity Building Workshop Advanced School/Workshop
- 10th, 17th June 2021: UCAR/UENR GNSS Virtual Training Workshop
- 22nd April 2021: Nowcasting for Africa: Methods for Early Warning of High Impact Weather
- 15th April 2021: Mendeley Training Certification of Achievement
- 11th February 2021: Virtual Scopus Training by Researcher Academy on Campus, University of the Western Cape
- 23rd September, 2020: Science Communication Workshop, University of Cape Coast, Cape Coast, Ghana.

PROPOSALS

- Expression of Interest: Leveraging Machine Learning for Ghanaian Cashew Sector Based on Drone & Satellite Imagery Data: Technical Development & Collection of AI Training Data
- Expression of Interest: Digital/Satellite TV installation, Technician Training for 1000 unemployed youth and returned migrants for the Ghanaian-German Centre for Jobs, Migration and Reintegration.
- Expression of Interest: Managing Organization (HUB) for Responsible Artificial Intelligence for Climate Action Innovation Research Network in Africa
- Expression of Interest: Establishing Multidisciplinary Artificial Intelligence for Development Labs (AI4D Labs) in Africa

Grant and Awards

- \$ 134,900. Site (Ground station) license lease agreement between ATLAS Space operations and EORIC (UENR) for 3 years starting from July 2021.
- \$ 277,440. Master Service Agreement Data & Teleport Services between EORIC (UENR) and Media Broadcast Satellite GmbH for 5 years starting from May 2021.

- \$ 29, 646.01, Carbon Flux Tower Electrification Support

Publications (for the year under review)

Published Manuscripts

1. Afedoh, B. F., Yakubu, E., Siadey, S., & Siabi, E. K. (2020). Preliminary Studies of Fecal Sludge Accumulation Rates of Dry Pit Latrines Using Kinect Based 3D Scanning Technology. *Journal of Energy and Natural Resource Management (JENRM)*, 6(1), 1–7. <https://doi.org/10.26796/JENRM.V6I1.163>
2. Agyare, A., Kabo-Bah, A. T., Bayel, B. T., & Jalloh, A. S. (2021). Integration of GIS and F-Hydra Model for Aquifer Vulnerability Monitoring in the Afram Plains, Ghana. *Journal of Geoscience and Environment Protection*, 09(03), 222–248. <https://doi.org/10.4236/gep.2021.93014>
3. Akpoti, K., Kabo-bah, A. T., Dossou-Yovo, E. R., Groen, T. A., & Zwart, S. J. (2020). Mapping suitability for rice production in inland valley landscapes in Benin and Togo using environmental niche modeling. *Science of the Total Environment*, 709, 136165. <https://doi.org/10.1016/j.scitotenv.2019.136165>
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Publications under Review

1. Amos T. Kabo-bah, Emmanuel Nyantakyi, Kamila Kabo-bah, Abdul Fatawu Nasirudeen, Ebenezer K. Siabi (2021). Prejudice against poor and vulnerable. Encyclopedia of the UN Sustainable Development Goals, No Poverty-Springer- Accepted and yet to be published (Book Chapter)
2. Shaibu Osman, Francis Atta Kuranchie, Emmanuel Nyantakyi (2021). Substitution of Glass Powder for Cement in Concrete as a Sustainable Waste Management Practice. Environmental and Green Processes (MDPI) - Accepted and yet to be published
3. Martin Kyereh Domfeh, Nana Ekow Nkwa Sey, Amprofi Ampah Amproche, Eric Mortey, Prince Antwi-Agyei, Emmanuel Kwesi Nyantakyi (2021) Relationship between forest fires and climatic conditions: the case of the Mole National Park in Ghana, West Africa. The Egyptian Journal of Remote Sensing and Space Sciences – Accepted and yet to be published
4. Mark Amo-Boateng, Nana Ekow Nkwa Sey, Amprofi Ampah Amproche, Martin Kyereh Domfeh (2021) Instance segmentation scheme for roofs in rural areas based on Mask R-CNN. The Egyptian Journal of Remote Sensing and Space Sciences – Accepted and yet to be published

COMMUNITY ENGAGEMENTS

- Advanced Virtual Fire Information System (AVFS) workshop for farmers in Tamale
- Advanced Virtual Fire Information System (AVFS) workshop for stakeholders (GNFS, NADMO DAs) in Sunyani

VISITS

- A delegation from Rwanda Space Agency paid a working visit to EORIC
- Familiarization visit by Ghana Meteorological Agency (GMeT)

FUTURE PLANS

The School seeks to:

1. Strategically developed a focused research direction for its Department of Energy and Petroleum. It intends to focus on research themes in specific areas of Energy Transition, Energy Storage, Energy, Society & Environment, Sustainable Practices in Ghana's Petroleum Industry, Emerging Technologies in Petroleum Operations and Petroleum Technology.
2. Establishment of a Centre for Advanced Research in Oil and Gas (CAROG) to research petroleum big data analysis, improved recovery techniques, and environmental sustainability.
3. Establishment of a Centre for Testing and Certification of Energy (CTCE) products and systems

4. Development of a postgraduate study in Petroleum Engineering and Renewable Energy Technologies.
5. Development of new MSc and Ph.D. programs in Sustainable Transportation Systems.
6. Make the department vibrant and a cell or hub for Entrepreneurship, Innovation, and Placement
7. Improvement in R&D activities in the department
8. Making digital departmental library
9. More concentration on interdisciplinary projects
10. Organize national level conferences, paper presentations & project competition
11. Carry out activities for the development of faculty
12. Initiate new techniques in developing the students to face modern methods of personality tests and interviews
13. Also, the department plans to mount the following short courses:
 - » Introduction to CFD Application for Renewable Energy Engineers
 - » Biogas Technologies
 - » Small Hydropower Development
 - » Wind Energy Technologies
 - » High-Performance Computing for Engineers
 - » Energy Communication
 - » Energy Economics
 - » Introduction to Petroleum

Under the Department of Computer and Electrical Engineering, it plans to actively engage Energy Industrial players to sign an MoU for practical training of its staff as well as the students in the area of research. The MoU will also center on setting up a state of the art Laboratory for the department.

Furthermore, the School plans to in the near future develop and run the following programmes under its respective departments.

Department of Computer and Electrical Engineering

- » BSc. Telecommunication Engineering
- » MSc. Electrical and Electronic Engineering
- » MSc. Computer Engineering

Department of Mechanical and Manufacturing Engineering

- » BSc. Manufacturing Engineering
- » BSc. Bio Resource Engineering

Department of Civil and Environmental Engineering

- » MSc/Ph.D. in Hydrology & Water Resources Management
- » MSc/Ph.D. in Public Health Engineering

To commence a top-up weekend program for those having Higher National Diploma (HND) in Civil Engineering next academic year.

The Earth Observation Research and Innovations Centre plans to commissioning the Carbon Flux tower site (within the Bia Tano Forest reserve) in January 2022.

Grant and Awards

Sustainable Dam Project

The project seeks to investigate the management and planning of hydropower generation in West Africa under climate change and land use/land

Funding of Research Activities

African Centers for Development Impact (ACE Impact) project

Publications (for the year under review)

- 14) Aboagye B., Gyamfi, S., Antwi E. O, Djordjevic, S. (2021) Degradation analysis of installed solar photovoltaic (PV) modules under outdoor conditions in Ghana. *Energy Reports* 7 (2021) 6921–6931. <https://doi.org/10.1016/j.egy.2021.10.046>
- 15) Iweh C.D., Gyamfi S., Tanyi E., Effah-Donyina E. (2021) Distributed Generation and Renewable Energy Integration into the Grid: Prerequisites, Push Factors, Practical Options, Issues and Merits. *Energies* 2021, 14, 5375. <https://doi.org/10.3390/en14175375>
- 16) Avordeh T. K, Gyamfi S, Opoku A. A. (2021) Quantitative estimation of the impact of climate change on residential electricity demand for the city of Greater Accra, Ghana *International Journal of Energy Sector Management*. Emerald Publishing Limited 1750-6220 DOI 10.1108/IJESM-08-2020-0008
- 17) Ayebah A. I., Gyamfi S., Amuzuvi C. K. (2021) Making Energy Savings by the Engagement of Small and Medium-sized Enterprise on Energy Management. *Journal of Electrical and Electronic Engineering* 2021; 9(2): 41-48 [10.11648/j.jee.20210902.12](https://doi.org/10.11648/j.jee.20210902.12)
- 18) Asuamah Y. E., Gyamfi, S., Dagoumas A. (2021) Potential of Meeting Electricity Needs of Off-grid Community with Mini-grid Solar Systems. *Scientific African* Volume 11(2021). <https://doi.org/10.1016/j.sciaf.2020.e00675>.

- 19) Aboagye B., Gyamfi, S., Antwi E. O, Djordjevic, S. (2021) Status of Renewable Energy Resources for Electricity Supply in Ghana. Scientific African Volume11 (2021) <https://doi.org/10.1016/j.sciaf.2020.e00660>.
- 20) Aboagye B., Gyamfi S., Caesar Puoza J, Obeng M. (2020) Techno-economic Feasibility Analysis of Solar Photovoltaic System for Single Households in Peri-urban Areas in Kumasi, Ghana. International Journal of Sustainable Energy Development (IJSED), Volume 8, Issue 1, 2020. 10.20533/ijсед.2046.3707.2020.0047
- 21) Domfeh M. K, Gyamfi S., Amo-Boateng M., Andoh R., Antwi E. O., Tabor G. (2020). Numerical Simulation of an Air-Core Vortex and Its Suppression at an Intake Using OpenFOAM Fluids (2020), 5, 221; doi:10.3390/fluids5040221.
- 22) Domfeh M. K, Gyamfi S., Amo-Boateng M., Andoh R., Antwi E. O., Tabor G. (2020) Numerical Simulation of an Air-core Vortex at a Hydraulic Intake Using OpenFOAM. Scientific African Volume 8 (2020) <https://doi.org/10.1016/j.sciaf.2020.e00389>.
- 23) Osabutey G. Opoku A. A., Gyamfi S. (2020) A Statistical Mechanics Approach to the Study of Energy Use Behaviour. Journal of Applied Mathematics Volume 2020, Article ID 7384053, 14 pages <https://doi.org/10.1155/2020/7384053>.
- 24) Domfeh M. K, Gyamfi S., Amo-Boateng M., Andoh R., Antwi E. O., Tabor G. (2020) Free Surface Vortices at Hydropower Intakes: –A State-of-the-Art Review Scientific African Volume 8, July 2020. <https://doi.org/10.1016/j.sciaf.2020.e00355>.
- 25) Obeng M., Gyamfi S., Derkyi N. S., Kabo-bah T. A, Peprah F. (2020) Technical and Economic Feasibility of a 50 MW Grid-connected Solar PV at UENR Nsoatre Campus. Journal of Cleaner Production. 247, 20 Feb 2020, 119159. <https://doi.org/10.1016/j.jclepro.2019.119159>
- 26) Aboagye B., Gyamfi, S., Caesar Puoza, J. (2020) Performance Enhancement of Solar Photovoltaic Module by the Application of Different Coolants over the Photovoltaic Module Surface. Journal of Energy and Natural Resource Management (JENRM). JENRM, Vol. 6, No. 1, 1-6, 2020. <https://doi.org/10.26796/jenrm.v6i1.161>

Community Engagements

6. Installation of Solar PV Systems in island communities in Krachi East and West constituencies in the Oti region
7. Installation of Solar Street lights in rural communities around Bui
8. Installation of Solar Street lights at the Ghana Police Service Headquarters in Accra
9. Installation of Solar Home Systems in CHIP compound in Hamile
10. Installation of Solar Street lights at the Liberation Barracks, in Sunyani

Future Plans of the Centre

1. To maintain a world class teaching, research and scholarship
2. Strong partnerships with industry and other stakeholders
3. Financial Sustainability
4. Diverse, talented staff and faculty

SCHOOL OF SCIENCES

SCHOOL OF SCIENCES

1.0 Introduction

The School of Sciences was established in the 2013/2014 Academic Year and it is the third of the Schools established by the University. It began operations with the Department of Mathematics and Statistics and the Department of Computer Science in 2013. In 2014, the Department of Chemical Science was established and the Department of Basic and Applied Biology in 2017.

The School of Sciences is dedicated to research and teaching about scientific knowledge and technology in its social context. Succinctly, the School offers transformational and value-based education in physical and biological sciences, mathematics, computer science, and information technology. We generate, advance, and disseminate knowledge in these various disciplines and provide the enabling platform for building competencies needed for attaining sustainable development goals and the socio-economic development of the nation.

The overall objective of the School is to equip students with the requisite theoretical knowledge, practical skills and competencies required to address energy, natural resources, environmental and related socio-economic challenges.

Vision

To become a centre of excellence for the promotion of empirical knowledge and innovative research in natural and applied sciences.

Mission

To generate, advance, and disseminate scientific knowledge and research for the development of human resources and society through competitive science-related disciplines.

2.0 Departments and Research Centres/Institutes

The School has four (4) Departments and one Centre, which are:

1. Department of Basic and Applied Biology

The Department of Basic and Applied Biology was established in 2017 to develop programmes to identify, understand, anticipate, and mitigate the long-term health and environmental consequences of energy production, development and usage and is currently headed by Dr. Emmanuel Timmy Donkoh. At the beginning of the 2017/18 academic year, the Department of Basic and Applied Biology admitted its first batch of students under the foundation Head, Prof. Samuel Fosu Gyasi.

From a foundation of 217 students in 2017, the Department has grown to a student population of 1221 at the present. The staff strength has also increased from 3 in 2017 to a current staff strength of 21 with expertise spanning complementary areas of the basic and applied biological and allied health sciences.

The Department has positioned itself to pursue a dynamic research agenda focused on the health and environmental consequences of energy generation and usage. The Department's research agenda is driven by the University's mandate in energy and natural resources and the global One-health approach to combating emerging diseases. The "Agenda" emphasizes collaborative and multi-disciplinary research, cutting across boundaries of animal, human and environmental health. The One Health Agenda offers a useful framework for the identification of emerging environmental threats to health driven by energy production, wildlife exploitation, natural resource extraction, and climate change. This framework allows us to recognize the threat posed by energy generation activities on the health of humans, animals and the ecosystem. This is required to understand the ecology of emerging zoonotic diseases and to develop plans for response and control.

Vision: The vision of the Department of Basic and Applied Biology is to become a centre of academic excellence generating and advancing knowledge of living organisms and their living environment for sustainable development.

Mission: The mission of the Department is to generate, advance, and disseminate scientific knowledge and research for the development of human resources and the society through competitive life science related disciplines.

2. Department of Chemical Sciences

The Department of Chemical Sciences engages in teaching, research, consultancy, community service, and outreach programmes. The Department runs a BSc. programme in Chemistry and working to roll out two additional BSc programmes in Biochemistry and Physics, as well as postgraduate programme in Chemistry.

Vision: The department envisions to become a leading department recognized for its excellence in research, innovation, scholarship, and collaboration.

Mission: The mission of the department is to foster and nurture frontiers in the Chemical Sciences by attracting astute faculty and top-calibre students that will strive to provide solutions to critical energy and natural resources challenges in Ghana and beyond.

3. Department of Computer Science and Informatics

The Department of Computer Science and Informatics is concerned with the

theory, design, development, and application of computer systems and information processing techniques to actualise a digitalized national agenda and support sustainable development agenda.

Vision: The vision of the department is to “build a strong research and teaching environment that responds swiftly to the challenges of the 21st century largely related to Energy and Natural Resources engineering and management.

Mission: The mission of the department is to provide quality undergraduate and graduate education in both the theoretical and applied foundations of computer science and train students to effectively apply this education to solve real-world problems.

4. Department of Mathematics and Statistics

The Department of Mathematics and Statistics was established in 2013. The Department seeks to produce highly skilled professionals in Mathematics, Statistics, Actuarial Science and related programmes and to empower the students to demonstrate, articulate and value the knowledge and skills acquire. Among the core activities of the department is to design programmes that conform to international best practices; provide teaching and research; and roll out more undergraduate and postgraduate training programmes. Currently, the Department runs three (3) BSc, two (2) Diploma programmes and one (1) Post Graduate programmes. The Department has graduated different batches of graduates over the period of 2017 and 2021. The current student population of the Department stands at 370 across the five undergraduate programmes and 31 in the postgraduate programme.

Vision: The vision of the Department is to achieve national prominence by providing a diverse, student-centered, stimulating learning environment that actively engages undergraduate and graduate students in mathematical and statistical sciences and research while benefiting society through the creation of new knowledge and technologies. The Department is committed to being a source of outstanding Mathematical Science graduates, knowledge and expertise as the Department strives to serve UENR, Ghana and beyond.

Mission: The Mission of the Department of Mathematics and Statistics is to build and disseminate foundational and applicable knowledge through excellence in teaching, research and discovery, and community engagement; foster the advancement of Mathematics, Statistics and Actuarial Science and technology locally, regionally, and globally; and serve as a transformative force within a diverse, interdisciplinary, and collaborative educational environment for improving the world.

Few objectives outlined to achieve the above vision and mission:

- a. To carry out accreditation of new programmes and re-accreditation of existing programmes.
- b. To increase the visibility and quality of Mathematics, Statistics and Actuarial Science programmes.
- c. To mobilize resources for research, publications and grants.
- d. To foster close ties with alumni, industry and government agencies.
- e. To encourage staff to engage in Community Service.

5. Centre For Research and Applied Biology

The Centre was established in 2021 as a research laboratory to improve collaborative research and offer tailor-made, post-graduate programmes in Basic and Applied Biology (CeRAB) under the School of Sciences.

3.0 Academic Programmes

I. Department of Basic and Applied Biology:

i. Undergraduate Programmes:

- a. BSc. Biological Science
- b. BSc. Medical Laboratory Sciences
- c. BSc. Nursing

II. Department of Chemical Sciences:

i. Undergraduate Programmes:

- a. BSc. Chemistry

III. Department of Computer Science and Informatics:

i. Undergraduate Programmes:

- a. BSc Information Technology
- b. BSc Computer Science
- c. Diploma Information Technology
- d. Diploma in Computer Science

ii. Postgraduate Programmes:

- a. PhD in Computer Science

- b. MPhil Computer Science
- c. MSc. Computer Science

IV. Department of Mathematics and Statistics:

- i. Undergraduate Programmes:
 - a. BSc. Mathematics
 - b. BSc. Statistics
 - c. BSc. Actuarial Science
 - d. Diploma Statistics
 - e. Diploma Insurance
- ii. Postgraduate Programmes:
 - a. MPhil Applied Mathematics

4.0 Administration of the School

The following personnel constitute the School Administration:

1	Professor Adebayo Felix Adekoya	Dean
2	Prof Emmanuel Marfo-Owusu	HOD, Chemical Sciences
3	Prof. Samuel Fosu Gyasi	Head, Centre for Applied Biology
4	Dr. Elvis Kobina Donkoh	HOD, Mathematics & Statistics
5	Dr. Peter Appiahene	HOD, Computer Sci. & Informatics
6	Dr. Emmanuel Timmy Donkoh	HOD, Basic & Applied Biology
7	Ms. Diana Obeng	Faculty Officer
8	Mrs. Priscilla A. Owusu Ansah	Senior Administrative Assistant
9	Ms. Fatima Dadzie	Senior Administrative Assistant
10	Ms. Paschalina Baatuolkuu	Senior Administrative Assistant
11	Mr. Victor Ferkah	Senior Administrative Assistant
12	Mr. Jesse Amo Osei	Senior Administrative Assistant

5.0 Staff and Students Statistics

Staff population of the School

S/N	RANKS	MALE	FEMALE	TOTAL NUMBER
1	Associate Professors	3	0	3
2	Senior Lecturers	12	0	12
3	Lecturers	37	10	47
4	Assistant Lecturer	8	4	12
5	Technical Instructors	0	1	1

6	Senior Research Assistant	3	0	3
7	Senior/ Technicians	5	2	7
8	Junior Assistant Registrar	0	1	1
9	Senior/ Administrative Asst.	2	3	5
	Grand Total	70	21	91

List of Staff of School of Sciences

S/N	NAME	RANK
DEAN'S OFFICE		
1	Ms. Diana Obeng	Junior Assistant Registrar – Faculty Officer
2	Jesse Amo Osei	Senior Administrative Assistant
Department of Basic and Applied Biology		
1	Prof. Samuel Fosu Gyasi	Associate Professor
2	Dr. Emmanuel Timmy Donkoh	Lecturer
3	Dr. Daniel Antwi Berko	Lecturer
4	Dr. Kenneth Bentum Otabil	Lecturer
5	Dr. Francis Balungnaa Dhari Veriegh	Lecturer
6	Dr. George Owusu	Lecturer
7	Mr. Bismark Ofori Bamfo	Lecturer
8	Mr. David Ofori Ntiamoah	Lecturer
9	Ms. Dorice Akosua Berkoh	Lecturer
10	Mr. Ba-Etilayoo Atinga	Lecturer
11	Mr. Albert Henyo	Lecturer
12	Ms. Vincentia Sarfo-Brobbey	Lecturer
13	Ms. Diana Baafi	Technical Instructor
14	Ms. Adisa Ayeley Musah	Assistant Lecturer
15	Ms. Rosemary Braimah	Assistant Lecturer
16	Mr. Gilbert Wilfred Graham Addah	Assistant Lecturer
17	Mr. Bright Afriyie Owusu	Assistant Lecturer
18	Mr. Akwasi Asamoah	Senior Lab. Technician
19	Ms. Banleman Banan	Senior Lab. Technician
20	Ms. Paschalina Baatuolkuu	Senior Admin. Asst.

Department of Chemical Sciences		
1	Prof. Emmanuel Marfo-Owusu	Associate Professor
2	Dr. David Adu-Poku	Senior Lecturer
3	Dr. Ismaila Emahi	Senior Lecturer
4	Dr. Selina Ama Saah	Lecturer
5	Dr. Pamela Amegbletor	Lecturer
6	Dr. Issah Yahaya	Lecturer
7	Dr. Bernice Yram Danu	Lecturer
8	Mr. Benjamin Darko Asamoah	Lecturer
9	Mr. Patrick Opare-Sakyi	Lecturer
10	Mr. Alfred Kpebbesaan Bienibour	Lecturer
11	Mr. Charles Kwame Bandoh	Assistant Lecturer
12	Mr. Augustine Boakye	Senior Lab. Technician
13	Nana Yaa Acheampomaa Asante	Senior Laboratory Technician
14	Bismark Addo Oppong	Senior Laboratory Technician
15	Mr. Edward Annoh	Lab. Technician
16	Ms. Fatima Dadzie	Senior Administrative Assistant
Department of Mathematics and Statistics		
1	Dr. Elvis Kobina Donkoh	Senior Lecturer
2	Dr. Sampson Takyi Appiah	Senior Lecturer
3	Dr. Alex Akwasi Opoku	Senior Lecturer
4	Dr. Dominic Otoo	Senior Lecturer
5	Dr. Iddrisu Wahab Abdul	Senior Lecturer
6	Dr. Kwame Piesie Frimpong	Senior Lecturer
7	Dr. (Mrs.) Baaba A. Danquah	Lecturer
8	Dr. Abdul-Karim Iddrisu	Lecturer
9	Dr. Maurice Omane-Adjepong	Lecturer
10	Mr. Johnson De-Graft Ankamah	Lecturer
11	Ms. Sylvia Ankamah	Lecturer
12	Mr. Isaac Akoto	Lecturer
13	Mr. Charles Kwofie	Lecturer
14	Mr. Richard Kwame Ansah	Lecturer
15	Mr. Eric Okyere	Lecturer
16	Mr. Yaw Osei	Lecturer

17	Ms. Akuye-Shika Odametey	Lecturer
18	Mr. Kwaku Opoku-Ameyaw	Lecturer
19	Mr. Killian Asampana Asosega	Lecturer
20	Mr. Daniel Gyamfi	Lecturer
21	Mr. Francis Kwame Bukari	Lecturer
22	Mr. Kassim Tawiah	Lecturer
23	Mr. Williams Kumi	Lecturer
24	Mr. Bernard Atta Adjei	Assistant Lecturer
25	Mr. Wilhemina Adoma Pels	Assistant Lecturer
26	Mr. Justice Amenyo Kessie	Assistant Lecturer
27	Mr. Ridwan Rufai Dimmua	Assistant Lecturer
28	Mrs. Priscilla A. Owusu Ansah	Senior Admin. Asst.

Student Population of the School

	Programme	Total
Department of Basic & Applied Biology		
1	BSc. Biological Science	386
2	BSc. Medical Lab. Sciences	510
3	BSc. Nursing	325
	Sub Total	1,221
Department of Chemical Sciences		
4	BSc. Chemistry	153
	Sub Total	153
Department of Computer Science & Informatics		
5	BSc. Computer Science	439
6	BSc. Information Technology	623
7	Diploma in Computer Science	174
8	Diploma in Information Technology	383
9	MPhil Computer Science	48
10	MSc. Computer Science	36
11	PhD Computer Science	23
	Sub Total	1,726

Department of Mathematics & Statistics		
12	BSc. Actuarial Science	211
13	BSc. Statistics	53
14	BSc. Mathematics	71
15	Diploma in Statistics	12
16	Diploma in Insurance	23
17	MPhil Applied Mathematics	31
	Sub Total	401
	Grand Total	3,501

6.0 Research Collaborations (Local and International)

DEPARTMENT OF BASIC & APPLIED BIOLOGY

The Department explored a number of opportunities for both international and local partnerships and developed collaboration with the following agencies:

- » The University of Arkansas at Pine Bluff, USA (MoU under review)
- » Seeding Labs
- » African Phenology Network
- » Royal Botanic Garden, Edinburgh
- » Computational and Applied Vegetation Ecology Lab, University of Ghent, Belgium
- » The Bono Regional Health Directorate
- » The National Public Health Reference Lab
- » Ghana Statistical Service
- » Alpha Diagnostics, USA

DEPARTMENT OF COMPUTER SCIENCE

- » The Department has established a research a collaboration with the College of Information Science and Technology at University Of Nebraska Omaha, USA.
- » There is also another collaboration with WASCAL (West African Science Service Centre on Climate Change and Adapted Land Use).
- » Locally, the Department has research collaboration with the department of Computer Science at KNUST and the Department of Computer Science also at University of Ghana Legon.

7.0 Workshops/Conferences/Public Lectures

School of Sciences

- » School of Sciences Smart Systems Symposium 2021 themed: “The Use of Smart Technologies to Control Illegal Mining and Illegal Logging in Ghana”. Held on September 10, 2021.
- »
- » School of Sciences one-day Workshop on the theme; “Understanding the Core Issues of the Appointments and Promotions Criteria – UENR”. Held on October 20, 2021.

DEPARTMENT OF BASIC AND APPLIED BIOLOGY

- » Oral Presentation at African Society for Laboratory Medicine (ASLM) 2021 Annual Meeting. November 2021. Virtual: 15th-18th November, 2021.
- » Poster Presentation at American Society for Tropical Medicine and Hygiene (ASTMH) 2021 Annual Meeting. Virtual: 17th-21st November, 2021.
- » Poster presentation at American Association of Clinical Chemistry (AACC) 2021 Annual Meeting. 26th -30th September 2021, Georgia World Congress Center, Atlanta, GA, USA.
- » Keynote address at the First General Assembly of the National Health Students Association of Ghana (NAHSAG). 2nd October, 2021, Sunyani Technical University.
- » Oral presentation on African Phenology Network at International Society of Biometeorology (ISB) General Phenology Commission Meeting. 20th September, 2021.
- » Oral presentation on Introduction to phenocams (initial feedback on equipment, logistics and use in the field) at African Phenology Network Workshop on Evidence for Africa-wide phenology monitoring. 10th September, 2021.
- » Oral presentation on Perspectives on emerging phenology research and use of new technologies at African Phenology Network Workshop on the theme: African Perspectives on Phenology Monitoring (Online). 25th June 2021.
- » Video Poster Presentation on Road-edge effects on liana community structure and liana host interactions at the Irish Ecological Society’s 3rd Ecology and Evolution Ireland Conference from 7th to 8th January, 2021.
- » Poster Presentation on Use of KoboCollect data kit for phenological observation in a moist forest in Ghana at BES Twitter Conference (TropiCon20) under the theme Advances in Technology and

Innovative Methods. Date 5th to 6th November 2020

- » Oral Presentation, “Optimizing the Esperanza Window Trap as an effective alternative for trapping blackfly vectors for xenomonitoring of onchocerciasis in an area of low vector density,” Spring Meeting of the Netherlands Society for Parasitology, 26th May, 2021.

DEPARTMENT OF CHEMICAL SCIENCES

- » Optimizing battery performance through material Characterization’, Chemistry World Web, Webinar, 10th November, 2021.
- » ‘Climate Action Webinar Series’, Commonwealth Scholarship Commission (CSC) Alumni, 25 October – 19 November, 2021.
- » 7th Ghana Renewable Energy Fair, 12-14th October 2021, (online).
- » 32nd Biennial Conference of the GSA, Mitigating covid-19 pandemic: the quest for scientific and technological innovation, 7-8th October, 2021 (online).
- » First annual meeting of the computer-aided drug discovery. 7th July, 2021, Noguchi Memorial Institute for Medical Research, Legon.
- » Royal Society-DFID Conference, Chemical Routes to Functional Materials, 8-9th April, 2021 (online).
- » Joint ICTP-IUGG Workshop on Data Assimilation and Inverse Problems in Geophysical Sciences I (SMR 3607), 18th – 29th Oct 2021, Virtual, Italy (Poster presentation)
- » Workshop on Scopus training at University of Energy and Natural Resources; 27th July, 2021.
- » Departmental seminar on Bioaccessibility of heavy metals in soils. Department of Chemical Sciences. 17th March, 2021
- » Postgraduate seminars, Department of Physics, College of Science, KNUST. Every Wednesday, 2020 and 2021.

DEPARTMENT OF COMPUTER SCIENCE AND INFORMATICS

- » International Conference on Artificial Intelligence and Soft Computing (ICAISC) Munich, Germany 3rd - 4th July 2019.
- » 2019 4th GEO Data Technology Conference, Vienna-Austria.
- » 11th European Conference on Game Based Learning (ECGBL October 2017) in Graz, Austria.
- » IEEE 2019 International Conference on Communications, Signal Processing and Networks (ICCSPN), Cape Coast, Ghana.
- » International Conference on Artificial Intelligence, Big Data, Computing and Data Communication Systems (IcABCD), Durban, South Africa. 6th-7th August 2020.
- » OSA Foundation 2020 SIEGMAN SCHOOL 20th – 24th July 2020
- » 2021 Education and Training in Optics & Photonics Conference 8th-10th Sept. 2021

- » 2020 OSA Foundation Career Accelerator for Optical Communications, Washington DC, USA.
- » 4th Ghana Blockchain Conference, October 6 – 7, 2021
- » Annual Interdisciplinary Research (IIR) Conference – University for Development Studies, Tamale – PRESENTER, September 1 – 2, 2021
- » Understanding the Core Issues of the Appointments and Promotions Criteria, School of Science (UENR), 20th October 2021
- » Cybersecurity workshop for professionals, IIPGH, 18th October 2021
- » Findings from Partnership for Enhanced and Blended Learning (PEBL) in East Africa, ACU, 13th October 2021
- » Smart Systems Symposium: The Use of Smart Technologies to Control Illegal Mining and Illegal Logging in Ghana”, UENR, 10th of September 2021
- » IoT Meetup; Reimagining Education and the Future, IoT Network Hub, 24th April 2021
- » Sentiment Analysis: A Practical Approach Using Machine Learning, IIPGH, 22nd April 2021
- » Mobile Money Fraud and Cyber Crime; The Role of the Subscriber, UENR, 7th April 2021
- » International Webinar on Big Data Simulation, AAMUSTED Ghana, 5th April 2021.
- » A member of the department was the Convener, Digital Ghana: Smart Systems Symposium 2021 on Friday 13th September 2021. The theme for the 2021 edition of the symposium was “The Use of

DEPARTMENT OF MATHEMATICS AND STATISTICS

- » Departmental Staff Seminars on the theme: Comparison of Parameters Estimators for Generalized Pareto Distribution under Peak over Threshold and Optimization Models for Production, Wednesday, 17th March, 2021
- » Departmental Staff Seminars on the theme: and Distribution Processes with Inventory Control, UENR, 1st July, 2021
- » A workshop was organized for undergraduate students in the Department in July, 2021 on the theme: After School, What Next?

8.0 Proposals

Department of Basic and Applied Biology

Over the period, the Department successfully submitted research proposals and attracted funds to the tune of USD 69,496. This brings the total number of actively funded projects in the Department to nine (9). A summary of funded projects are listed below:

TITLE	AMOUNT
The potential impacts and mitigation strategies of the COVID-19-induced delay of Community Directed Treatment with ivermectin on onchocerciasis elimination targets in Ghana	\$30,000
Feasibility of integrating IgG4-based rapid tests into onchocerciasis surveillance programmes in Ghana	£4,985
The search for amidases as novel therapeutic targets in <i>Onchocerca volvulus</i> parasites	€ 5,000
Liana community structure in relation to climatic and edaphic factors across five forest ecosystem types in Ghana	\$14,511
African Phenology Network - Capacity assessment for phenology monitoring and use of new methods in Africa	£10,000
Acceptability and feasibility of genital self-sampling for the diagnosis of female genital schistosomiasis in hard-to-reach communities	£5, 000

Department of Computer Science and Informatics

The Department has written a proposal for collaboration with the National Communication Authority to establish a Center for Digital Transformation and Cyber Security.

Some staff of the Department in conjunction with the University's Centre for Distance Education and E-Learning wrote the proposal for the Association of Commonwealth Universities project titled "Partnership for Enhanced and Blended Learning West Africa" and was granted approval to be part of 12 universities in Ghana and Nigeria for the project implementation.

Department of Mathematics and Statistics

Sponsorship proposals have been submitted to four companies to sponsor the best graduating students in the Department and to provide places for students to do their attachment. The companies are: Hollard Insurance Company Ltd., IZWE Savings and Loans Ltd., Enterprise Life Insurance Company Ltd. and Loyalty Insurance Company Ltd.

9.0 Grant and Awards

Department of Basic and Applied Biology

- » Over the period, the Department led by Prof. Samuel Fosu Gyasi (former Head), Dr. Emmanuel Timmy Donkoh (Ag. Head) and Dr. Kenneth Bentum Otabil submitted a proposal to Seeding Labs' Instrumental Access Programme. The Department secured a grant for laboratory instrumentation

worth USD 342,000 from this application.

- » Dr. Emmanuel Timmy Donkoh received a 2-year international membership grant from the American Association for Clinical Chemistry (AACC) valued at approximately USD 1,500.

Department of Computer Science and Informatics

A member of the Department was part of UENR's team that won funds to work on a project funded by Skills Development Fund (SDF2) to upscale the Advanced Fire Information System (AFIS) project by providing farmers and other stakeholders with early fire detection and alert information in the form of voice and SMS alerts as well as smartphone application.

10.0 Funding of Research Activities

Department of Basic and Applied Biology

- » Dr. Emmanuel Timmy Donkoh received a shipment of reagents worth USD 2,000 from Alpha Diagnostics Inc., USA to study antibody durability following vaccination in adolescent girls.
- » Mr. Bismark Bamfo secured equipment worth 400 USD to study Liana phenology in three forest ecosystem types.
- » Department of Computer Science and Informatics
- » Partnership for Enhanced and Blended Learning West Africa. <https://www.acu.ac.uk/get-involved/pebl/pebl-west-africa/>

11.0 Publications (for the year under review)

Staff of the School produced the following publications within the year under review:

Department of Basic and Applied Biology

1. Robert Ohene Adu, Samuel Fosu Gyasi, David Kofi Assumang, Kenneth Bentum Otabil (2020). Behavioural Pattern on Medical Waste Management in 5 Hospitals in Ghana. Journal of Environment and Public Health Hindawi Journal of Environmental and Public Health Volume 2020, Article ID 2934296, 14 pages, <https://doi.org/10.1155/2020/2934296>.
2. Kenneth Bentum Otabil, Samuel Fosu Gyasi, Esi Awuah, Daniel Obeng Ofori, HDFH Schallig (2020). Optimized Prototypes I Ezperanza window Traps are effective as human landing Collectors in capturing host-seeking blackflies in a community of low vector density in Ghana. Hindawi, Journal of Parasitology Research Volume 2018, Article ID 5902367, 10 pages <https://doi.org/10.1155/2018/5902367>.
3. Richard Agbo Kwabena Ntibrey, Samuel Fosu Gyasi and Francis Atta

- Kuranchie (2020). Water shortages and poor sanitation in senior high schools; the potential of greywater reuse as a mitigating measure, *Water and Environment Journal*, doi:10.1111/wej.12622 Print ISSN 1747-6585
4. Richard Agbo Kwabena Ntibrey, Francis Atta Kuranchie and Samuel Fosu Gyasi (2020). Antimicrobial and coagulation potential of *Moringa oleifera* powder coupled with sand filtration for treatment of bath wastewater from public senior high schools in Ghana, *Heliyon* 6 (2020) e04627, www.cell.com/heliyon, <http://crossmark.crossref.org/dialog/?Doi=10.1016/j.heliyon.2020.e04627&domain=pdf>
 5. Ama Mbeaba Quarshie, Samuel Fosu Gyasi, Francis Atta Kuranchie, Esi Awuah and Eugene Darteh (2021). Conceptual Behaviour Underpinning the Occurrence of Non-faecal Matter in Faecal Sludge in Some Urban Communities, Ghana. *Hindawi, Journal of Environmental and Public Health*, Volume 2021, Article ID 2672491, 10 pages, <https://doi.org/10.1155/2021/2672491>
 6. Donkoh E. T., Atibila, F., Ten Hoor, G., & Kok, G. (2021). Prevalence, Risk Factors and Management of Hypertension in Ghana: A Systematic Review, Meta-Analysis and GRADE Assessment Protocol. *PROSPERO 2020 CRD42020215829* Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42020215829
 7. Atibila, F., Donkoh, E. T., Ten Hoor, G., & Gerjo Kok, (2021). Prevalence of Hypertension in Ghanaian Society: a Systematic Review, Meta-analysis and GRADE Assessment. *BMC Systematic Reviews*, 10, 220. <https://doi.org/10.1186/s13643-021-01770-x>
 8. Atibila, F., Ten Hoor, G., Donkoh, E. T., & Kok, G. (2021). Challenges experienced by patients with hypertension in Ghana: A qualitative inquiry. *PLOS One*, 16(5), e0250355. <https://doi.org/10.1371/journal.pone.0250355>
 9. Adobasom-Anane, A. G., Aryee, P. A., Setorglo, J, Donkoh, E. T., (2020). Retrospective Study of Cases of Snakebites at the Tamale Teaching Hospital, Ghana. *Book of Abstracts 69th ASTMH Virtual Annual Meeting*, 15-19 November 2020.
 10. Otabil, K.B., Gyasi, S.F., Awuah, E., Obeng-Ofori, D., et al (2020). Biting rates and relative abundance of *Simulium* flies under different climatic conditions in an onchocerciasis endemic community in Ghana. *Parasites Vectors* 13, 229. <https://doi.org/10.1186/s13071-020-04102-5>
 11. Adu, R.O., Gyasi, S.F., Essumang D.K., and Otabil, K.B. (2020). Medical Waste-Sorting and Management Practices in Five Hospitals in Ghana. *Journal of Environmental and Public Health*, 2020 (2934296)
 12. Owusu, G., Obiri, D. D., Ainooson, G. K., Osafo, N., Antwi, A. O., Duduyemi, B. M., & Ansah, C. (2020). Acetic acid-induced ulcerative colitis in sprague dawley rats is suppressed by hydroethanolic extract of *Cordia vignei* leaves

- through reduced serum levels of TNF- α and IL-6. International journal of chronic diseases, 2020.
13. Millicent Captain-Esoah, Philip Kweku Baidoo, Kwadwo K Frempong, Delphina Adabie-Gomez, Joseph Chabi, Dorothy Obuobi, Godwin Kwame Amlalo, Francis Balungnaa Veriegh, Martin Donkor, Victor Asoala, Eric Behene, Daniel Adjei Boakye, Samuel Kweku Dadzie, Biting Behavior and Molecular Identification of *Aedes aegypti* (Diptera: Culicidae) Subspecies in Some Selected Recent Yellow Fever Outbreak Communities in Northern Ghana, Journal of Medical Entomology, Volume 57, Issue 4, July 2020, Pages 1239–1245, <https://doi.org/10.1093/jme/tjaa024>.
 14. Hall, M.J.R., Martín-Vega, D., Clark, B., Ghosh, D., Rogers, M., Pigoli, D., Veriegh, F.B.D., Tetteh-Kumah, A., Osei-Atweneboana, M.Y. and Cheke, R.A. (2021), Micro-CT imaging of *Onchocerca* infection of *Simulium damnosum* s.l. blackflies and comparison of the peritrophic membrane thickness of forest and savannah flies. Med Vet Entomol, 35: 231-238. <https://doi.org/10.1111/mve.12509>.
 15. Willen L, Basáñez MG, Dvorak V, Veriegh FBD, Aboagye FT, et al. (2021) Human immune response against salivary antigens of *Simulium damnosum* s.l.: A new epidemiological marker for exposure to blackfly bites in onchocerciasis endemic areas. PLOS Neglected Tropical Diseases 15(6): e0009512. <https://doi.org/10.1371/journal.pntd.0009512>.
 16. Owusu, E., Berkoh, D. A., Koffie, S., Barimah, J., & Ngala, R. A. (2021). Effects of Thermal Treatment on the Characteristics Quality of Some Ghanaian Vegetable Oils (Palm, Coconut and Groundnut). Research Square, (Preprint) <https://doi.org/10.21203/rs.3.rs-537131/v1>
 17. Harley, B. K., Dickson, R. A., Amponsah, I. K., Ngala, R. A., Berkoh, D., & Fleischer, T. C. (2020). Antidiabetic effect of *Chrysophyllum albidum* is mediated by enzyme inhibition and enhancement of glucose uptake via 3T3-L1 adipocytes and C2C12 myotubes. Asian Pacific Journal of Tropical Biomedicine, 10(9), 387.

Department of Chemical Sciences

1. Crystal Structure of Tetrapentylammonium Chloride Complex with Rac-1, 1'-Bi-2-naphthol: The Effects of Solvent and Counter Anion with Biradial Conformation of the Surfactant Molecule. E. Marfo-Owusu, A.L Thompson, Japan Soc. Anal. Chem. X-ray Struc. Anal. Online, 2021, 37(8), 39. https://www.jstage.jst.go.jp/article/xraystruct/37/0/37_39/pdf
2. Crystal Structure of Tetrabutylammonium Chloride Complex with Rac-1, 1'-Bi-2-naphthol: The Inclusion of Surfactant Molecules by Hydrogen Bonded Binaphthol Molecules. E. Marfo-Owusu, A.L Thompson, Japan Soc. Anal. Chem. X-ray Struc. Anal. Online, 2021, 37(6), 27. https://www.jstage.jst.go.jp/article/xraystruct/37/0/37_27/pdf

3. The Crystal Structure Inclusion Complex of a Benzyltrimethylammonium Bromide with (R)-(+)-1,1'-Binaphthalene-2,2'-diol. E. Marfo-Owusu, A.L. Thompson, Japan Soc. Anal. Chem. X-ray Struct., Anal. Online, 2021, 37(4), 19. <https://www.jstage.jst.go.jp/article/xraystruct/37/0/3719/pdf>
4. The Crystall Structure of a Benzyltriethylammonium Bromide Complex with Rac- 1, 1'-Binaphthalene-2, 2'-diol: The Inclusion of an Arylammonium Salt by an Assembly of Binaphthol. E. Marfo-Owusu, A.L. Thompson, Japan Soc. Anal. Chem. X-ray Struct. Anal. Online, 2021, 37(2), 7. <https://www.jstage.jst.go.jp/article/xraystruct/37/0/377/pdf>
5. Crystal Structure of a Benzyltrimethylammonium Chloride Complex with Rac-1,1'-Bi-2-naphthol: The Generation of Weak Interactions by the Influence of a Benzyl Group. E. Marfo-Owusu, A.L. Thompson, Japan Soc. Anal. Chem. X-ray Struct. Anal. Online, 2021, 37(1), 1. <https://www.jstage.jst.go.jp/article/xraystruct/37/0/371/pdf>
6. Saah, S. A., and Adu-Poku, D. (2021). Phytochemical, Proximate, and Vitamin C Content in *Morinda citrifolia* (Noni). *Journal of Tropical Pharmacy and Chemistry*, 5(3).
7. Saah, S. A., Adu-Poku, D. and Boadi, N. O. (2021). Heavy metal contamination and water quality of selected fish ponds at Sunyani, Ghana: A comparison with WHO standards. *Chemistry International*, 7(3), 181-187.
8. Saah, S. A., and Adu-Poku, D. (2021). Phytochemical, proximate, and vitamin C content in *Morinda citrifolia* (Noni). *Journal of Tropical Pharmacy and Chemistry*, 5(3).
9. Boadi, N. O., Degbevi, M., Saah, S. A., Badu, M., Borquaye, L. S. and Kortei, N. K. (2021). Antimicrobial properties of metal piperidine dithiocarbamate complexes against *Staphylococcus aureus* and *Candida albicans*. *Scientific African*, 12, e00846.
10. Boadi, N. O., Badu, M., Kortei, N. K., Saah, S. A., Annor, B., Mensah, M. B., Okyere, H. and Fiebor, A. (2021). Nutritional composition and antioxidant properties of three varieties of carrot (*Daucus carota*). *Scientific African*, e00801.
11. Sakyi, P.O., Amewu, R.K., Devine, R.N.O.A., Bienibuor A. K., Miller W. A., Kwofie S. K. (2021). Unravelling the myth surrounding sterol biosynthesis as plausible target for drug design against leishmaniasis. *Journal of Parasitic Diseases*, 45, 1152–1171.
12. Sakyi, P.O., Amewu, R.K., Devine, R.N.O.A., Ismaila E., Miller W. A., Kwofie S. K. (2021). The Search for Putative Hits in Combating Leishmaniasis: The Contributions of Natural Products Over the Last Decade. *Natural products and bioprospecting*, 11, 489–544.
13. Sakyi, P. O., Amewu, R. K., Devine, R. N., Bienibuor, A. K., Miller, W. A., and Kwofie, S. K. (2021). Unravelling the myth surrounding sterol biosynthesis as plausible target for drug design against leishmaniasis. *Journal of Parasitic*

Diseases, 1-20.

14. Bienibuor, A. K., Preko, K., Aning, A. A., Antwi, M. and Emahi, I. (2020). Application of Electromagnetic and Electrical Resistivity Methods for Borehole Siting in Low-Grade Metavolcanic and Metasedimentary Rocks, Sunyani West, Ghana. *Journal of Environment and Earth Science*. 10 (10), 44 - 55.
15. Emahi, I., Ayim, E., Agongo, J., Sakyi, P. O., Asamoah, B. D., Bienibuor, A. K. and Aidoo, P. (2020). Removal of Hg²⁺, Pb²⁺, Zn²⁺ and Cu²⁺ ions from Contaminated Water Using *Caladium bicolor* (Wild Cocoyam). Preprint: DOI: 10.21203/rs.3.rs22625/v1

Department of Computer Science and Informatics

1. Appiahene, P., Missah, Y. M., & Najim, U. (2020). Predicting Bank Operational Efficiency Using Machine Learning Algorithm : Comparative Study of Decision Tree, Random Forest, and Neural Networks. *Advances in Fuzzy Systems*.
2. Awoin, E., Appiahene, P., Gyasi, F., & Sabtiwu, A. (2020). Predicting the Performance of Rural Banks in Ghana Using Machine Learning Approach. *Advances in Fuzzy Systems*, 2020.
3. Iddrisu, W. A., Appiahene, P., & Kessie, J. A. (2020). Effects of weather and policy intervention on COVID-19 infection in Ghana. *ArXiv*, 2005.00106. <http://arxiv.org/abs/2005.00106>.
4. Adekoya AF, Kofi Nti I (2020). The COVID-19 outbreak and effects on major stock market indices across the globe: A machine learning approach. *Indian Journal of Science and Technology* 13(35):3695-3706. <https://doi.org/10.17485/IJST/v13i35.1180>
5. Appiah, O., Quayson, E., & Opoku, E. (2020). Ultrasonic sensor based traffic information acquisition system; a cheaper alternative for ITS application in developing countries. *Scientific African*. <https://doi.org/10.1016/j.sciaf.2020.e00487>
6. Appiah, O., Hayfron-Acquah, J. B., & Asante, M. (2020). An Effective Algorithm for Denoising Salt-And-Pepper Noise in Real-Time. *Asian Journal of Research in Computer Science*. <https://doi.org/10.9734/ajrcos/2020/v6i130149>
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Department of Mathematics and Statistics

S/N	Year	Author (s)	Title	Journal	Issue, Vol, pages	DOI/ISBN
1	2022	Akindeinde, S. O., Okyere, E., Adewumi, A. O., Lebelo, R. S., Fabelurin, O. O., & Moore, S. E.	Caputo fractional-order SEIRP model for COVID-19 Pandemic	Alexandria Engineering Journal	Vol. 61 No. 1 pp. 829-845.	https://doi.org/10.1016/j.aej.2021.04.097
2	2021	Asamoah, J. K. K., Yankson, E., Okyere, E., Sun, G. Q., Jin, Z., & Jan, R	Optimal control and cost-effectiveness analysis for dengue fever model with asymptomatic and partial immune individuals	Results in Physics	104919	https://doi.org/10.1016/j.rinp.2021.104919
3	2021	Asamoah, J. K. K., Jin, Z., Sun, G. Q., Seidu, B., Yankson, E., Abidemi, A., Oduro, F.T., Moore, S.E. & Okyere, E.	Sensitivity assessment and optimal economic evaluation of a new COVID-19 compartmental epidemic model with control interventions	Chaos, Solitons & Fractals	Vol. 146	https://doi.org/10.1016/j.chaos.2021.110885
4	2021	Rehman, A. U., Singh, R., Abdeljawad, T., Okyere, E., & Guran, L.	Modeling, analysis and numerical solution to malaria fractional model with temporary immunity and relapse.	Advances in Difference Equations	Vol. 2021 No. 1 pp. 1-27	https://doi.org/10.1186/s13662-021-03532-4
5	2021	Ankamah, J. D. G., Okyere, E., Appiah, S. T., & Nana-Kyere, S.	Nonlinear dynamics of COVID-19 SEIR infection model with optimal control analysis	Commun. Math. Biol. Neurosci	Vol. 2021	https://doi.org/10.28919/cmbn/5095

6	2021	Twumasi-Ankrah, S., Owusu M., Appiah S. K., Pels, W. A., Arthur D.	Forecasting COVID-19 Confirmed Cases in Ghana: A Model Selection Approach.	Path of Science: International Scientific Journal	Vol. 7 No. 2	DOI:10.22178/pos.67-2
7	2021	Dominic Otoo, Isaac Odoi Abeasi, Shaibu Osman, Elvis Kobina Donkoh	Mathematical modeling and analysis of the dynamics of hepatitis B with optimal control	Commun. Math. Biol. Neurosci.	Vol. 2021	
8	2021	Abdul-Karim Iddrisu, Emmanuel A Amikiya, Dominic Otoo	A predictive model for daily cumulative COVID-19 cases in Ghana	F1000Research	Vol. 10 No. 343	
9	2021	Dominic Otoo, Getachew Teshome Tilahun, Shaibu Osman, Getinet Alemayehu Wole	Modeling the dynamics of tuberculosis with drug resistance in North Shoa Zone, Oromiya Regional State, Ethiopia	Commun. Math. Biol. Neurosci.	Vol. 2021	
10	2021	Twumasi-Ankrah, S., Appiah S. K., Arthur D., Pels, W. A., Afriyie, J. K., Nartey, D	Comparison of Outlier Detection Techniques in Non-Stationary Times Series Data	Global Journal of Pure and Applied Sciences	Vol. 27 pp. 55-60	DOI: https://dx.doi.org/10.4314/gjpas.v27i1.7
11	2021	Killian, A. A., Adebajji, A. O., & Abdul, I. W.	Spatial analysis of the prevalence of obesity and overweight among women in Ghana	BMJ Open	Vol. 11 No. 1	doi:10.1136/bmjopen-2020-041659
12	2021	Tawiah, K., Iddrisu, W. A., & Asampana Asosega, K.	Zero-Inflated Time Series Modelling of COVID-19 Deaths in Ghana.	Journal of Environmental and Public Health, 2021	Vol. 2021	

13	2021	Dominic Otoo, Elvis Kobina Donkoh, Justice Amenyo Kessie	Estimating the basic reproductive number of COVID-19 cases in ghana	European Journal of Pure and Applied Mathematics	Vol. 4 No. 1 Pp135-148	
14	2021	Dominic Otoo, Shaibu Osman, Stephen Atta Poku, Elvis Kobina Donkoh	Dynamics of Tuberculosis (TB) with Drug Resistance to First-Line Treatment and Leaky Vaccination: A Deterministic Modelling Perspective	Computational and Mathematical Methods in Medicine	Vol. 2021	
15	2021	Dominic Otoo, Shaibu Osman, Stephen Atta Poku, Elvis Kobina Donkoh	A deterministic model for the transmission dynamics of tuberculosis (TB) with optimal control	Commun. Math. Biol. Neurosci.	Vol. 2021	
16	2020	Puoza, J. C., Appiah, S. T., Tainyao, Z. and Aboagye, B.	Chamfer drill geometric parameters optimisation by finite element simulation and experimental analysis	International Journal of Machining and Machinability of Materials,	Vol. 22, No. 5, pp. 406-429,	ISSN: 1748-572X.
17	2020	Ampofi, I., Akyene, T., Neebo, E. W. and Appiah, S. T.	“Hurst Exponent Analysis on the Ghana Stock	American Journal of Mathematical and Computer Modelling.	Vol. 5, No. 3, 2020, pp. 77-82.	Exchange ISSN: 2578-8280.
18	2020	Iddrisu, W.A., Appiah, S.T., Abdul-Mumin, K. and Ab-dul-Samed, A.-R.	Modelling the Im-pact and Effects of Climatic Variability on Electricity Energy Consumption in the Yen-di Municipality of Ghana	Open Journal of Energy Efficiency	Vol. 9, pp. 1-13	ISSN: 2169-2645.

19	2020	Otoo, H, Appiah, S. T., Asiedu, E. L.	A Mathematical Model of the Transmission Dynamics of Chikungunya Fever	International Journal of Scientific and Research Publications	Vol. 10, No. 2, pp. 748-759.	
20	2020	Osabutey, G., Opoku, A.A. and Gyamfi, S.	A statistical mechanics approach to the study of energy use behaviour.	Journal of Applied Mathematics	Volume 2020 Article ID 7384053, 14 pages, Hindawi	https://doi.org/10.1155/2020/7384053
21	2020	Donkoh E.K, B. A. Adjei, Otoo D., Owusu-Ansah E.D, Mahama F.).	Impact Optimization of Battery Energy Storage System in Microgrid Operation	European Journal of Pure and Applied Mathematics	13(1):96-10.	DOI: 10.29020/nybg.ejpam.v13i1.3590.
22	2020	Asosega, K. A., Adedia, D., & Adebajji, A. O.	Sensitivity Analysis of the Quadratic Discriminant Function for Predicting Pregnancy Outcomes	Journal of Scientific Research and Reports	60-69.	2020
23	2020	Okyere, E., Olaniyi, S., & Bonyah, E	Analysis of Zika virus dynamics with sexual transmission route using multiple optimal controls	Scientific African,	Vol. 9, e00532, 12 pages.	doi.org/10.1016/j.sciaf.2020.e00532
24	2020	Okyere, E., De-Graft Ankamah, J., Hunkpe, A. K., & Mensah, D	Deterministic Epidemic Models for Ebola Infection with Time-Dependent Controls	Discrete Dynamics in Nature and Society	vol. 2020 Article ID 2823816, 12 pages.	doi.org/10.1155/2020/2823816
25	2020	Frimpong, K. P.	Contractions on Complete Weak Partial Metric Spaces for a Commuting Family of Self Mappings	Asian Research Journal of Mathematics	(F, L). , 16(9), 67-76.	https://doi.org/10.9734/arjom/2020/v16i930220

26	2020	Frimpong, K. P.	Common Fixed-Point Theorems for Commuting Self Maps in Banach Spaces via a Measure of Non-compactness	Advances in Research	Vol. 21 No. 10	DOI: 10.9734/AIR/2020/v21i1030261
27	2020	Thomas AD, Ofosu AE, Emmanuel A, Ankamah J D, Ayine AG, Asare A, Alexander A.	Comparison and Estimation of Four Infiltration Models.	Open Journal of Soil Science. 2020	Feb 21;10(2):45-57.	
28	2020	Asosega, K. A., Opoku-Ameyaw, K., Otoo, D., Mac-Ocloo, M. K., & Ayinzoya, R.	Comparative Sensitivity Performance of the Discriminant Function and Logistic Regression under Different Training and Test Samples for Predicting Birth Outcomes.	Asian Journal of Probability and Statistics	47-60	
29	2020	Asosega, K. A., Adedia, D., & Adebanji, A. O.	Sensitivity Analysis of the Quadratic Discriminant Function for Predicting Pregnancy Outcomes	Journal of Scientific Research and Reports	60-69.	
30	2020	Kwofie, C., Akoto, I., Opoku-Ameyaw, K.,	Modelling the Dependency between Inflation and Exchange Rate Using Copula.	Journal of Probability and Statistics.	Page 1-7	
31	2020	Sampson T Appiah, Dominic Otoo, Bernard A Adjei	A multi-vehicle, multi-factory assignment problem: a case of coca-cola bottling company at ahinsan and spintex-Ghana	American Journal of Operations Research	Vol. 10	

					No. 5	
32	2020	Shaibu Osman, Dominic Otoo, Oluwole Daniel Makinde	Modeling anthrax with optimal control and cost effectiveness analysis	Journal of Applied Mathematics	Vol. 11 No. 3	DOI: 10.4236/ am.2020.113020
33	2020	Shaibu Osman, Dominic Otoo, Charles Sebil	Analysis of listeriosis transmission dynamics with optimal control	Journal of Applied Mathematics		
34	2020	Shaibu Osman, Dominic Otoo, Charles Sebil, Oluwole Daniel Makinde	Bifurcation, sensitivity and optimal control analysis of modelling anthrax- listeriosis co- dynamics	Commun. Math. Biol. Neurosci.	Vol. 2020	
35	2020	Shaibu Osman, Houenafa Alain Togbenon, Dominic Otoo	Modelling the dynamics of campylobacteriosis using nonstandard finite difference approach with optimal control	Computational and Mathematical Methods in Medicine	Vol. 2020	
36	2020	Dominic Otoo, Patrick Opoku, Sebil Charles, Asekiya Prince Kingsley	Deterministic epidemic model for (SVCSyCAsyIR) pneumonia dynamics, with vaccination and temporal immunity	Infectious Disease Modelling	Vol. 5 pp. 42-60	
37	2020	Okyere, E., Olaniyi, S., & Bonyah, E.	Analysis of Zika virus dynamics with sexual transmission route using multiple optimal controls	Scientific African	Vol. 9	https://doi.org/ 10.1016/j.sciaf. 2020.e00532

38	2020	Okyere, E., De-Graft Ankamah, J., Hunkpe, A. K., & Mensah, D	Deterministic epidemic models for Ebola infection with time-dependent controls.	Discrete Dynamics in Nature and Society,	Vol. 2020	https://doi.org/10.1155/2020/2823816
39	2020	Okyere, E., Ackora-Prah, J., & Oduro, F.T.	A Caputo based SIRS and SIS fractional order models with standard incidence rate and varying population	Commun. Math. Biol. Neurosci.,	Vol. 2020	https://doi.org/10.28919/cmbn/4850
40	2020	Nana-Kyere, S., Okyere, E., & Ankamah, J. D. G.	Compartmental SEIRW COVID-19 optimal control model	Commun. Math. Biol. Neurosci., 2020	Vol. 87	https://doi.org/10.28919/cmbn/4998

12.0 Community Engagements

Department of Basic and Applied Biology

- » Co-chair, African Phenology Network Workshop on Lessons from International Phenology Networks (Online). 30th July, 2021.
- » Section Editor, Journal of Energy and Natural Resource Management
- » Reviewer, Journal of Tropical Ecology
- » Reviewer, Plant Ecology
- » Facilitator for Ghana College of Nurses and Midwives: Faculty of Paediatric Nursing.
- » Speaker; Nutrition for Middle-aged Women and Beyond. Women's Fellowship, Ebenezer Presbyterian Church Sunyani.
- » Speaker for NSA UENR: The Perfect Woman: How to combine her career, family and be an entrepreneur
- » Speaker; Breast Cancer: The knowns and the Unknowns. Precious Stones Foundation.
- » Speaker: talk on Overcoming Breast Cancer. Precious Stones Foundation.

Department of Chemical Sciences

- » Reviewer for Journal of Food Engineering, Elsevier
- » Reviewer for Scientific Africa, Elsevier
- » Reviewer for European Journal of Nutrition and Food Safety
- » Reviewer for Journal of Advances in Food Science and Technology

Department of Computer Science and Informatics

- » ICT training for the 3rd Infantry Battalion officers in Sunyani March 2021
- » A member of the department was a Panel Member for JoyNews PM Express Television Programme. May 2020.
- » A member of the department was a Speaker for Forum on Digital Inclusion in the Time of Covid-19 organized by Alliance for Affordable Internet. May 2020.
- » A member of the department was a Consultant and Mentor for CodeTrain, Ghana. January 2015-Date
- » A member of the department was a Consultant and Panel Member for GrassRoots Hub, Ghana. June 2020
- » A member of the department was a Facilitator/ Independent Assessor for Global Polio Eradication Initiative. February 2020.
- » Plans are far advanced for the signing of 10 MoUs with different companies including Sunyani Regional Hospital, Mpedigre, NCA, NITA, CY Technologies etc.
- » A Member of the Department was a Speaker at the Celebration of The International Day of Women and Girls in Science on the Theme: The Evolution of STEM- the Unshakable Foundation of Science at Notre Dame Girls Senior High School, Fiapre – 11Th February 2020.
- » A Member of the department is part of the African Centre for Technology Studies - Artificial Intelligence for Development Network August 2021 to Date
- » A Member of the department is part of Steering Committee Association of Commonwealth Universities - Partnership for Enhanced and Blended Learning West Africa (ACU-PEBL WA) September 2021 to Date
- » Vice-Chairman, Information, Education Committee of Internet Society of Ghana
- » Member of the Information Technology Committee of IOD-Ghana

13.0 Visits

Department of Basic and Applied Biology

- » Over the period, the Department hosted numerous delegations, including...
- » A delegation from the Nursing and Midwifery Council (NMC). The monitoring team was impressed with the Department's activities following professional accreditation to run the BSc. Nursing programme.
- » The Regional Statistician called on the Department to deepen the mutual collaboration between the Regional Office and the Department and to express gratitude for the Department's support during the 2021 Population and Housing Census.
- » A delegation from the First Bank of Nigeria to discuss issues of mutual interest.

Department of Computer Science and Informatics

The department visited Notre Dame Girls Senior High School, Fiapre and donated about 200 ICT text to support the teaching and learning of ICT in Senior High Schools in Ghana.

14.0 Future Plans of the School

» Establishment of a Centre

The School is in the process of establishing a Centre of Excellence on Big Data for Sustainable Mining Development (ICOE-Ghana) and a Centre for Digital Forensics and Emerging Technologies.

The School also intends to set-up a Career Advisory Training for its Students.

» Establishment of Laboratories

The School with its Departments are working towards the establishment of well-equipped laboratories for Computer Science and Informatics, Mathematics and Statistics, Engineering Physics, Medical Laboratory Sciences and Biological Sciences.

Department of Basic and Applied Biology

The Department has plans to increase its postgraduate footprint and to become internationally visible for research output on the health and environmental consequences of energy generation and natural resource exploitation. The Department has presented a proposal to construct a 3-story lecture theatre, laboratories and office complex where the 3 new departments will be accommodated.

Department of Computer Science and Informatics

» Splitting of the Department

The Department wants to split into two separate departments (Computer Science Department and Information Systems and Technology Department) and development of more academic and research programmes.

» Development of New Programmes

The Department plans to run MSc/MPhil and PhD in Information Technology, undergraduate and postgraduate programs in Business Computing, Business Information Systems, and Applied Informatics.

» Research Activities

It is also a plan of the Department to lead in terms of research in the University by encouraging all Lecturers in the Department to have at least 20 Scopus indexed journal papers in 2021/2022 academic year.

» Collaborations and Establishment of a Centre

The Department intends to work with other stakeholders in the Tech industry to establish a “Digital Transformation and Cyber Security Center” and become the Digital Transformation Hub of West Africa. Moreover, to setup at least five Research

labs within the proposed Centre to promote research.

Department of Mathematics and Statistics

» Creation of New Departments

The Department intends to upgrade the units into Departments, namely: Department of Mathematics and Statistics, and Department of Actuarial Science. The Department also intends to roll out new academic programmes in the nearest future.

15.0 Challenges

» Infrastructure

The School has inadequate infrastructure for lectures, offices, laboratories, students' accommodation etc.

» Financial Constraints

Inadequate funds to cater for the School's annual budget and other projects.

» Staffing

Staff in certain ranks and with certain specializations is inadequate.

» Transport

The School does not have a vehicle or bus, which makes it very difficult when taking students for study trips, external laboratory practical, out-house clinical, making official errands etc.

CENTRE FOR RESEARCH IN APPLIED BIOLOGY, CERAB

The Centre for Research in Applied Biology, CeRAB-UENR was established in August 2020 in response to the need for more focused research output in the Biological Sciences. The need for the establishment of the Centre was demonstrated in April, 2020 when the COVID-19 pandemic was raging in Ghana, exposing the failures in investing in research and development that would put us in readiness for unforeseen environmental and biological hazards.

The University, through the Centre has the expertise, equipment and other logistics, which is necessary to answer this call of furtherance in research in Applied Biology. It is anticipated that the center will raise the image of the University high, increase our visibility and help us to indeed impact the country and the world at large.

1.2 Vision of CeRAB – UENR

To become a Centre of excellence at the forefront of modern and relevant Applied Biology research for preparedness and response to environmental and biological threats.

1.3 Mission of CeRAB – UENR

To impact national policies through practice, research and training in applied biology.

1.4 Strategy of CeRAB-UENR

- a. Training of postgraduates with expertise in applied biology practice and research
- b. Training of the next generation of scientists within the subregion on modern trends in applied biology.
- c. Consultancy services eg Biodiversity assessments, environmental impact assessment, ecosystem services assessment and valuation, etc
- d. Organization of national and international conferences in collaboration with national and international partners in applied biology.
- e. Research on the biology and ecology of neglected tropical diseases, water, sanitation and hygiene (WASH), emerging infectious diseases as well as other communicable and non-communicable diseases.

In order to ensure the effective running of the research Centre and help to achieve the vision of the Centre, an organogram has been developed to help in the effective management of the Centre.

SCHOOL OF NATURAL RESOURCES

SCHOOL OF NATURAL RESOURCES

INTRODUCTION

The School of Natural Resources is one of the first two Schools to be established in the University of Energy and Natural Resources. It was established in the year 2012 with a student population of 80. The School was established to provide leadership and innovation in natural resources management to meet the increasing knowledge and research demands from society and industry. The School focuses on training, research and dissemination of knowledge in the area of natural resources management. It trains students to attain knowledge, skills and intellectual independence to contribute their quota towards national development. Its vision is to become a centre of excellence in the training of critical human resource for the efficient utilization of our natural resources.

It is dedicated to producing highly skilled graduates while generating, advancing and applying science-based information for the sustainable management and utilization of our natural and environmental resources.

The School with the help of its Research Centre for Climatic Change and Gender Studies (3CGCS) also focuses on climatic change and its impact on our natural resources. Other areas of research include:

- Aqua-culture systems.
- Ecotourism and hospitality.
- Wildlife endangered species.
- Environmental degradation.
- Preservation and development of heritage site.
- Forest conservation.
- Forest fires.
- Mining activities.

Departments and Research Centres/Institutes

The School has the following Departments and Centre:

- 1) Department of Ecotourism, Recreation and Hospitality
- 2) Department of Environmental Management
- 3) Fisheries and Water Resources
- 4) Department of Forest Science
- 5) Centre for Climate Change and Gender Studies

Academic Programmes

I. The programmes being run by the various Departments in the school are:

- i. Undergraduate Programmes:
 - a. Diploma in Natural Resources Management
 - b. Diploma in Hospitality Management
 - c. Diploma in Fire and Disaster management
 - d. BSc. Natural Resources Management
 - e. BSc. Hospitality Management
 - f. BSc. Fire and Disaster Management

II. Postgraduate Programmes

Currently, two postgraduate programmes are being ran in the School. These are:

- a. MPhil/PhD Social Forestry and Environmental Governance
- b. MSc. /MPhil. /PhD Environment, Water and Sustainability

Administration of the School

The following personnel constitute the School Administration:

- | | | |
|---------------------------------|-----------------|--------------------------|
| 1. Prof. Simon Abugre | Dean | |
| 2. Ms. Pearl Afriyie Amankwah | Faculty Officer | |
| 3. Ms. Anastasia Oppong Asamoah | Senior | Administrative Assistant |

Staff and Students Statistics

The population of students in the School of Natural Resources are given in Tables 1, 2 and 3.

Table 1: Diploma Programmes Student population

Year/level	Male	Female	Total
100	98	112	210
200	108	162	270
Total	206	274	480

Table 2: Bachelor Programmes Student population

Year/level	Male	Female	Total
100	111	176	287
200	138	184	322
300	90	129	219

400	65	70	135
Total	404	559	963

Table 3: Postgraduate student population for 2019/2020 and 2020/2021 academic year

Programme	Male	Female	Total
MPhil/PhD Social Forestry and Environmental Governance	42	6	48
MSc. /MPhil. /PhD Environment, Water and Sustainability	17	4	21
Total	59	10	69

Research Collaborations (Local and International)

The school is currently collaborating with the following organizations:

- 1) Forestry Commission
- 2) Eberswalde University for Sustainable Development, Germany
- 3) Lake head University, Canada.
- 4) Ghana National Fire Service.
- 5) University of Houston Downtown- USA
- 6) Form Ghana

DEPARTMENT OF ECOTOURISM, RECREATION AND HOSPITALITY

Introduction

The Department of Ecotourism, Recreation and Hospitality is one of the four Departments of the School of Natural Resources. The Department offers and prepares students for a four-year degree, leading to the award of BSc. Natural Resources Management (Ecotourism option), BSc. Wildlife and Range Management, BSc. Hospitality Management (Regular & Weekend) and Diploma Hospitality Management.

Our graduates are equipped with knowledge, competencies, and skills to manage diverse areas such as the protected areas, ecotourism, and mainstream tourism and hospitality sector. Over the years, strategic partnership with the sectors created opportunities for students to engage in internships and industry-related training, which constitute the core of the practical training that enhances students' job prospects and career development.

Activities over the past year

- Rebranded the BSc. Wildlife and Range Management to BSc. Nature Conservation. The programme is now under reaccreditation.
- Constructing a modernized hospitality facility to support practical training and research.
- Initiated the development of MPhil/MSc. Hospitality Management, MPhil/MSc Hotel Management and short courses to meet the demands of the tourism and hospitality industry.
- Initiated the development of MPhil/MSc Nature Conservation and Rural Development and wildlife related short courses.
- Two lecturers, Miss. Mildred N. Deri and Miss Grace N. Baah, have enrolled on PhD Programmes abroad.
- Two Senior Lecturers, Mr. Richard Obour and Mr. James A. Ohemeng, have been offered post-retirement contract appointment with the department.

Academic Programmes

BSc. Natural Resources Management (Ecotourism option)

BSc. Wildlife and Range Management

BSc. Hospitality Management (Regular & Weekend)

Diploma Hospitality Management.

TEACHING AND ADMINISTRATIVE STAFF

There are five Senior Lecturers (with one on leave of absence and two on post-retirement contract), four Lecturers (with three on study leave), three Assistant Lecturers, one Technical Instructor, two Senior Technicians and one Technician in the Department. Their names and qualifications are given in the Table below:

Name	Designation
Dr. Yaw B. Agyeman	Senior Lecturer/HoD
Dr. Ricky Y. Nutsugbodo	Senior Lecturer
Dr. (Mrs.) Daniella D. Sedegah	Senior Lecturer Leave of Absence
Mr. Richard Obour	Senior Lecturer post-retirement contract
Mr. James A. Ohemeng	Senior Lecturer post-retirement contract
Mr. Sampson Wireko-Gyebi	Lecturer
Miss Olivia N. A. Tetteh	Lecturer Study Leave
Miss. Mildred N. Deri	Lecturer Study Leave
Miss Grace N. Baah	Lecturer Study Leave
Miss Perpetual Zaazie	Assistant Lecturer
Miss Joana Mills Quarshie	Assistant Lecturer
Miss Anna Arthur-Amissah	Assistant Lecturer
Miss Cynthia Amanor	Technical Instructor
Mr. Francis B. Asamoah	Senior Technician
Mr. Daniel Koomson Najah	Senior Technician
Miss Abena Gyamfuaa	Technician
Akosua Frimpong-Mensah	Senior Administrative Assistant

Research Collaborations (Local and International)

Dr. Yaw Boakye Agyeman

- Study in Canada Scholarship Programme.
- ERASMUS+ programme in Germany, Spain and Poland.

Workshops/Conferences/Public Lectures

Mr. Richard Obour

- Participant: Sensitization workshop towards the establishment of an office for International Relations. 24TH January, 2020: UENR Auditorium.

Miss Nancy Grace Baah

- Participant: The resilience and vulnerability of small lodgings in Florida: The impact of Covid-19, webinar organized by Rosen College of Hospitality Management, 20th May, 2020.

Proposals

None

Funding of Research Activities

Dr. Yaw Boakye Agyeman

- Coordinator, Biosphere Learning Laboratory Lake Bosomtwe (BL3B) Project

Publication(s)

Nutsugbodo, R. Y., Mensah, C. A., Amenumey, E. K., & Owusu C. A. (2020). Women's participation in ecotourism development within the Kakum Conservation Area, Ghana: Implications for community planning. *Tourism Planning and Development*. <https://doi.org/10.1080/21568316.2020.1751693>.

Nutsugbodo, R. Y., Amenumey, E. K., Amissah, E. F., Anaafo, D., & Afful, B. E. B. (2021). Determinants of car rental choice in Ghana. *Anatolia: An International Journal of Tourism and Hospitality Research*. <https://doi.org/10.1080/13032917.2021.1985544>

Nutsugbodo, R. Y., Kwofie, C., Baah, G. N., Yormekpe, D. D., & Armah, L. K. (2021). Choosing between alternative accommodation, using discrete choice experiment. *Anatolia: An International Journal of Tourism and Hospitality Research*: <https://doi.org/10.1080/13032917.2021.1900883>

Kuuder, C.-J. W., Essel, M., Hussein, R., Yirbekyaa, E. K., Dzamedo, B. E., Halidu, R., Arowosafe, C. F., Poku, G., Gyader, G., & Nutsugbodo, R. Y. (2020). Women empowerment in Sirigu through ecotourism in the Kasena-Nankana East District of Ghana. *Gender & Behaviour*, 18(3), 15934-15948.

Nutsugbodo, R. Y., & Mensah, C. A. (2020). Benefits and barriers to women participation in ecotourism development within the Kakum Conservation Area (Ghana): Implications for community planning. *Community Development: Journal of the Community Development Society*: <https://doi.org/10.1080/15575330.2020.1825977>

Nutsugbodo, R. Y., Mensah, C. A., Amenumey, E. K., & Owusu C. A. (2020). Women's

participation in ecotourism development within the Kakum Conservation Area, Ghana: Implications for community planning. *Tourism Planning and Development*. <https://doi.org/10.1080/21568316.2020.1751693>

Wireko-Gyebi, S. (2021). Tertiary students' motivation for leisure travel: Implications for domestic tourism. *Anatolia*. <https://doi.org/10.1080/13032917.2021.1985541>

Deri, M. N., Iddrisu, W. A., Wireko-Gyebi, S., Zaazie, P., & Mohammad. F. A. (2020). Assessment of COVID-19's impact on hotels in Ghana: Case study of hotels in Accra and Kumasi. *International Journal of Tourism and Hotel Management*, 2(2), 33-37.

Mildred, N. D., Iddrisu, W. A., Sampson, W-G., Perpetual, Z. & Mohammad, F. A., (2020). Assessment of COVID-19's impact on hotels in Ghana: Case study of hotels in Accra and Kumasi. *International Journal of Tourism and Hotel Management* 2(2): 33-37 DOI: 10.22271/27069583.

Mildred, N. D., Perpetual, Z., & Prosper, B., (2021). Turnover intentions among hotel employees in the Accra Metropolis of Ghana. *African Journal of Hospitality, Tourism and Leisure* 10(1):238-255. DOI: 10.46222/ajhtl.19770720-98.

Mustapha, S., Agyei-Ohemeng, J., Obour, R., Asamoah, B. F. and Apraku W. (2020). Diversity, abundance and distribution of birds in and around Kakum National Park in respect to habitat type. *Ecology and Sustainable Development*, 3 (2), 23-43.

Agyei-Ohemeng, J.; Adu, B. Y., Asamoah, B. F. and Opoku-Ohemeng. (2020). Nuisance Activities of Straw Colored Fruit Bats (*Eidolon helvum*) on the University of Energy and Natural Resources, Ghana. *Ecology and Sustainable Development*, 3 (1),1-6.

Community Engagements

Dr. Yaw Boakye Agyeman

- Head, Department of Ecotourism, Recreation and Hospitality
- Member, University Academic Board
- Member, School of Natural Resources Board
- Member, International Relations
- Member, School of Natural Resources Appointment & Promotion Committee

Dr. Ricky Yao Nutsugbodo

- School Examinations Officer, School of Natural Resource
- Board Member, Ghana Association of Tourism Students (GATS)
- Cognate Member, School of Natural Resources Representative on the School of Engineering Board
- School of Representative, Dean of Students Board
- Patron, Association of Hospitality Students.

Mr. Sampson Wireko-Gyebi

- Coordinator, Industrial Attachment, School of Natural Resources.

Miss Nancy Grace Baah

- Officer, Students Industrial Attachment.
- Coordinator, Industrial Relations.

Miss Perpetual Zaazie

- Coordinator, Special Event.

Miss Abena Gyamfuaa

- Coordinator, Alumni Relations

Visits

None

Future Plans of the Department.

- Plan to initiate hospitality industry-centered training as part of the academic program to develop and provide our students with experiential knowledge and skills.
- Develop a training centre and short courses (with Ghana Tourism Authority) to build capacity of the employees in tourism and hospitality sector.
- Strengthen the Department through staff and student exchange programmes.

DEPARTMENT OF FOREST SCIENCE

Introduction

The Department of Forest Science is one of the five Departments of the School of Natural Resources. It is one of the first Departments to be created in the university. It was established in the year 2013 to train students to acquire the requisite knowledge and skills in natural resources management, especially in the area of forest resource management, social forestry and environmental governance. The rationale is also to train professionals to sustainably manage the nation's forest resources for conservation, revenue generation and fringe communities' livelihood security.

The Department continues to support the school of natural Resources in the teaching of several undergraduate courses.

The Department runs an undergraduate programme in Natural Resource Management with options in Social Forestry and Forest Resources Management. It also runs PhD/MPhil in Social Forestry and Environmental Governance. The enrolment history of the MPhil/PhD in Social Forestry and Environmental Governance programme for the past five (5) years is as follows:

PhD/MPhil enrolment

Programme	Academic year				
	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021
MPhil	33	24	23	19	26
PhD	10	12	11	3	0

MPhil/ PhD. Statistics

MPhil	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021
Male	29	20	19	17	24
Female	4	4	4	2	2

PhD	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021
Male	9	12	10	1	0
Female	1	0	1	2	0

The enrolment figures for 2020/2021 academic year for the undergraduate students in the Department are indicated in the tables below

Undergraduate Students' Statistics

PhD	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021
Male	9	12	10	1	0
Female	1	0	1	2	0

Faculty members and supporting staff

There is one Associate professor, four Senior Lecturers (two on Contract), two Lecturers, two Senior Technicians, one Principal Technician, one Senior Administrative Assistant and two national service persons in the Department, as shown in Table 1.

s/n	Name	Rank/Designation
1	Dr. Daniel Akoto Sarfo	Senior Lecturer (HoD)
2	Prof. Simon Abugre	Associate Professor
3	Dr. (Mrs.) Mercy Derkyi	Senior Lecturer
4	Mr Alexander Baffour Afrifa	Senior Lecturer (contract)
5	Mr Isaac K. Abebrese	Senior Lecturer (contract)
6	Mrs N.Y. Opuni-Frimpong	Lecturer
7	Dr. Michael Asigbaase	Lecturer
8	Anthony Baidoo	Assistant Lecturer
9	Mr Edward Kander	Principal Technician
10	Mr. Emmanuel Sackey	Senior Technician
11	Mr. Sellasie Akoto	Senior Technician
12	Ms Amanda Sarfo Boateng	Senior Administrative Assistant
13	Ms. Yvette Adu- Gyamfi	National Service
14	Joseph Tetteh	National Service

RESEARCH INTERESTS AND CURRENT PUBLICATIONS OF STAFF IN THE DEPARTMENT

PROF. SIMON ABUGRE

Research Interest

- Allelopathic potential of tree species
- Land use systems and management
- Collaborative forest management
- Soil and water conservation

Recent publications

- Mwinkom, F. X. K., Damnyag, L., Abugre, S. and Alhassan, S. I. (2021). Factors influencing climate change adaptation strategies in North Western Ghana: evidence of farmers in the Black Volta Basin in Upper West region. SN Applied Sciences 3:548. | <https://doi.org/10.1007/s42452-021-04503-w>.
- Amoateng-Okyere, R. and S. Abugre (2021). Enhancing the viability of the Modified Taungya System through Beekeeping. Journal of Sustainable Forestry. ISSN1540-756X. DOI: 10.1080/10549811.2021.1884573. (Aframomum melegueta), a non-timber forest product in off-reserve tree farms. Journal of Sustainable Forestry, DOI:10.1080/10549811.2020.1845743. <https://doi.org/10.1080/10549811.2020.1845743>
- Felix Agariga, Simon Abugre, Mark Appiah (2021). Spatio-temporal changes in land use and forest cover in the Asutifi North District of Ahafo Region of Ghana, (1986–2020). Environmental Challenges 5 (100209): 1 – 10.
- Alex Amerh Agbeshie and Simon Abugre (2021). Soil properties and tree growth performance along a slope of a reclaimed land in the rain forest agroecological zone of Ghana. Scientific African 13 (2021) e00951. 1-13.
- Adusu, D., Abugre, S. and Dei-Kusi, D. (2020). Potential of biochar for mine soil amendment and floristic diversity enhancement at the Yongwa Quarry Site in the Eastern Region of Ghana. Agricultural Science Digest 41: 61 – 65.
- Sarpong, A. and Abugre, S. (2020): The potential of domesticating grains of paradise (Aframomum melegueta), a non-timber forest product in off-reserve tree farms. Journal of Sustainable Forestry, DOI: 10.1080/10549811.2020.1845743. <https://doi.org/10.1080/10549811.2020.1845743>
- Asante, K. O. H., Abugre, S., Derkyi, N. S. A., & Akoto, D. S. (2021). Gypsum

amendment and seasonal variability: effect on soil quality, fruit characteristics and toxicological responses of Cucumber (*Cucumis sativus* L.) in the Ahafo-Kenyasi Mining Area of Ghana. *World Journal of Advanced Research and Reviews*, 9(3), 229-244. DOI url: <https://doi.org/10.30574/wjarr.2021.9.3.0053>

- Asante, K. O. H., Abugre, S., Derkyi, N. S. A., & Akoto, D. S. (2021). Enhancing Extractive Resource Governance in Ghana and Nigeria under Fragmented Policy Landscape and Limited Resource Scenarios: Insight from the Barrow Framework. *The International Journal for Innovative Research and Development*. SSN 2278 – 0211 (Online). <http://dx.doi.org/10.24940/ijird%2F2021%2Fv10%2Fi2%2FFEB21011>

Conferences/ workshops Attended

- Resource Person at a training workshop for Peace Corps on use of fodder tree species in Ghana held on Wednesday 11th March, 2020 at Techiman.
- Resource person, Research Extension Linkage Committee meeting held on 7th September, 2021 at Sunyani Municipal Assembly.

Dr. Daniel Sarfo Akoto

Research Interest

- Socio-economic and ecological dimensions of forestry
- Landscape Ecology
- Agroecological management
- Climate Science
- Forest and Environmental Governance
- Agroforestry (bamboo ecology/agroforestry)

Recent publications

1. Asante, K. O. H., Abugri, S., Derkyi, N. S. A., & Akoto, D. S. (2021). Gypsum amendment and seasonal variability: effect on soil quality, fruit characteristics and toxicological responses of Cucumber (*Cucumis sativus* L.) in the Ahafo-Kenyasi Mining Area of Ghana. *World Journal of Advanced Research and Reviews*, 9(3), 229-244.
DOI url: <https://doi.org/10.30574/wjarr.2021.9.3.0053>
2. Asante, K. O. H., Abugri, S., Derkyi, N. S. A., & Akoto, D. S. (2021). Enhancing Extractive Resource Governance in Ghana and Nigeria under Fragmented Policy Landscape and Limited Resource Scenarios: Insight from the Barrow Framework. *The International Journal for Innovative Research and Development*. SSN 2278 – 0211 (Online).
<http://dx.doi.org/10.24940/ijird%2F2021%2Fv10%2Fi2%2FFEB21011>

3. Akoto, S. D., Partey, S. T., Kwaku, M. D. M., & Schmitt, C. B., Borgemeister. C., (2020). Towards bamboo agroforestry development in Ghana: evaluation of crop performance, soil properties and economic benefit. *Agroforestry Systems Journal*. <https://doi.org/10.1007/s10457-020-00493-7/>
4. Akoto, S. D., Partey, S. T., Kwaku, M. D. M., & Schmitt, C. B., Borgemeister. C., (2020). Environmental and financial assessment of producing bioenergy from *Bambusa balcooa*, *Anogeissus leiocarpus* and *Senna siamea* in Ghana. *Journal of Cleaner Productions*. <https://doi.org/10.1016/j.jclepro.2020.123147/>

SELECTED RECENT CONFERENCES/WORKSHOPS ATTENDED

- International Conference/ Webinar session on Bamboo for soil and water conservation held on Tuesday, 30th June, 2020. Beijing, China. By International Bamboo and Rattan organization (INBAR)- Regional Webinar Team organized at Fumesua, Kumasi, -Ghana
- Conference of key Stakeholders on the sector Nationally Determined Contributions (NDCs) towards carbon emission reductions in Ghana in meeting Agenda 21 of the Paris 2015 Declarations. Organized by the Environmental Protection Authority of Ghana- from 1st to 3rd November, 2020 at Aburi, Eastern Region – Ghana. Represented UENR
- Workshop on Climate/Weather Information Services in Ghana. Department of Environmental Science, Kwame Nkrumah University of Science and Technology (KNUST) Date: 7th October, 2020. Venue: IDL Conference Centre, KNUST, Kumasi. Represented UENR
- Workshop on Review of Fairtrade Africa Cocoa Climate Change Impact implementation programme for 2020(FY2020) and for 2021(FY2021). Date: 15th to 19th February, 2021. Venue: RosaPerl Hotel, Adako Jachie, Kumasi. Performed chief consultant role
- Community Forum on Sustainable Forest Resources Management. Organized by Livelihood and Environment Ghana. Date: 25th august, 2020. Venue: Konkontreso, Ahafo Region of Ghana. Lead Speaker: ‘Forest biodiversity conservation for sustainable forest resources use.
- Community Forum on Sustainable Forest Resources Management. Organized by Livelihood and Environment Ghana. Date: 25th august, 2020. Venue: Nyinahini, Ashanti Region of Ghana. Lead Speaker: ‘Forest governance in ensuring sustainable forest resources use and climate change adaptation’.

- Capacity Building Workshop on Deforestation, Biodiversity Conservation and Forest Governance for Fairtrade Cocoa Climate Change Impact Project. Organized by Fairtrade Africa. Venue: Kwamens Alisco Hotel, Suhum. Date: 26th March, 2021. Lead Presenter.
- Stakeholder Engagement Workshop on Deforestation, Biodiversity Conservation and Forest Governance for Fairtrade Cocoa Climate Change Impact Project. Organized by Fairtrade Africa. Venue: Regional coordinating Council, Goaso- Ahafo region. Date: 29th March, 2021. Lead Presenter and Facilitator.

Dr (Mrs.) Mercy Derkyi

Research Interest

- Forest-agriculture landscape from social and governance perspectives.
- Forest governance and forest conflict management
- Food security value chain
- Gender and climate change
- Natural resource policy and law
- Forest ergonomics, and research methods from the social perspective.

Current Projects

- » Co-applicant “Access-Authority Nexus in Farmer-Herder Conflicts” from 2019-2023. With DKK 11,689,232 from the Ministry of Foreign Affairs of Denmark (MFA) in collaboration with KNUST (Lead Institution), University of Development Studies and University of Copenhagen, Denmark.
- » Project Member: Hybrid waste to energy as a sustainable solution for Ghana (Waste2Energy). 4 years (01.01.2020- 31.12.2023), €5.069.316,14 funded under International Strategy of research policy

Recent Publications

- Mercy Afua Adutwumwaa Derkyi, Yaw Appau and Kwadwo Boakye Boadu (2021) Factors influencing community participation in the implementation and monitoring of FLEGT-VPA in Ghana. ForestryEconomics Review. <https://www.emerald.com/insight/2631-3030.htm>
- Eric Gyamfi, Mercy Afua Adutwumwaa Derkyi. Lawrence Kwabena Brobbey (2021). Insights, motives, and means of overcoming forest offenses in Ghana’s forestry sector: The case of the Bibiani Forest District. Volume 13, September 2021, e00962, Scientific African. <https://doi.org/10.1016/j.sciaf.2021.e00962>

- Derkyi Nana Sarfo Agyemang, Derkyi Mercy Afua Adutwumwaa, Yankyera Joseph Kusi (2021), Converting Forest Biomass to Bioenergy for Improved Community Livelihoods: A Review. International Journal of Energy and Environmental Science. Vol. 6, No. 2, 2021, pp. 16-28. doi: 10.11648/j.ijees.20210602.11
- Mirjam A.F.Ros-Tonen, Jane J.Aggrey, Dorcas Peggy Somuah, Mercy Derkyi (2021) Human insecurities in gold mining: A systematic review of evidence from Ghana. The Extractive Industries and Society. Doi: <https://doi.org/10.1016/j.exis.2021.100951>
- Richard Kwasi Bannor, Mirjam A.F. Ros-Tonen, Princess Ophelia Mensah, Mercy Derkyi, Valerie Fumey Nassah (2020). Entrepreneurial behaviour among non-timber forest product-growing farmers in Ghana: An analysis in support of a reforestation policy. Forest Policy and Economics 122(102331). DOI: 10.1016/j.forpol.2020.102331
- Bannor, Richard & Oppong-Kyeremeh, Helena & Derkyi, Mercy & Adombila, Albert & Amrago, Ernest (2020). Village savings and loans association participation and impact on off-farm income among rural women. Journal of Enterprising Communities: People and Places in the Global Economy. 10.1108/JEC-04-2020-0058.
- Abraham Zakaria, Suhiyini I. Alhassan, John K. M. Kuwornu, Shaibu B. Azumah, Mercy A. A. Derkyi (2020) Factors Influencing the Adoption of Climate-Smart Agricultural Technologies Among Rice Farmers in Northern Ghana. Earth Syst Environ DOI 10.1007/s41748-020-00146-w

Workshops Attended

- Global Challenges Research Fund (GCRF), Global Impact Acceleration Account (GIAA). International Forum on Global health and Wellbeing in Accra, Ghana 20-22 March, 2019
- Joint UEA- JIC workshop- Responding to Environmental Changes University of East Anglia, Norwich, United Kingdom, January 19 to February 2, 2019

Mr. Isaac K. Abebrese

Research Interest

- Forest Ecology and Management

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
- Sustainable Wood fuel Enterprise Development to Enhance Community Climate Resilience and Poverty Reduction in the Transitional Zone of Ghana.

Recent Publications

- Agyei, F.Y., Afrifa, A.B., and Nti, T. (2020). Fringe Community Attitudes Towards Wildlife. The Case of Monkeys at Boabeng-Fiema Monkey Sanctuary, Ghana. International Journal of Research Culture Society (Accepted for publication).
- Yelley, A., Afrifa, A.B., Agyei-Ohemeng, J., Owusu, D. (2020). Farmer knowledge on biodiversity conservation by shade trees in cocoa farms of Western-North Ghana. Journal of Biodiversity and Environmental Sciences (JBES) 17 (3), 41-49.

Workshops Attended

- Farmers' sensitisation workshops organised by the Centre in collaboration with an NGO, Environment and Women Association of Ghana (EAWAG) with financial support from Global Greengrants Fund from 12th to 19th February 2019 at Boffourkrom, Nkwadum, Pepewase, Asantefo Sreso, and Koase. The workshops were under the theme "Promoting best Farming Practices that conserve Biodiversity, Mitigate Climate Change and Promote Environmental Sustainability".

Mrs. Nana Yeboaa Opuni-Frimpong

Research Interest

- Urban forestry
- Natural Resources Economics and sustainable rural economies/ livelihoods.
- Management, use and ecology of medicinal plants

Recent publications

- Opuni-Frimpong, E., Gabienu, E., Adusu, D., Opuni-Frimpong, N.Y. and Dampety, F. G. (2021). Plant diversity, conservation significance, and community structure of two protected areas under different governance. Trees, Forests and People. S2666-7193(21)00021-2

- Amankwah, A.A., Quaye-Ballard, J.A., Koomson, B., Amankwah, R.K., Awotwi, A., Kankam, B.O., Opuni-Frimpong, N.Y., Siaw, D.B., Adu-Bredu, S. (2021). Deforestation in Forest-Savannah Transition Zone of Ghana; Boabeng-Fiema Monkey Sanctuary, Global Ecology and Conservation

Conferences/Workshops Attended

- Climate Change Adaptation in Food Security and Natural Resources Management. Makerere University, Kampala, Uganda. 27th January – 7th February 2020.
- Pedagogical Leadership in Africa (PedaL) Western Hub Training. Swiss Spirit Hotel and Suites Alisa, Accra, Ghana. 31st July – 8th August 2019.
- Africa Climate Week Conference. Accra International Conference Centre, Accra. 18 -22nd March 2019.

Dr. Michael Asigbaase

Research Interest

- Community ecology and ecosystem services.
- Biodiversity conservation.
- Sustainable management of agroforestry systems.
- Climate-smart agriculture.
- Nutrient budget and recycling

Publications in Peer-Reviewed Journals

- Asigbaase, M., Sjogersten, S., Lomax, B.H. and Dawoe, E (2021). Temporal changes in litterfall and potential nutrient return in cocoa agroforestry systems under organic and conventional management, Ghana. *Heliyon* 7 (10): e08051. <https://doi.org/10.1016/j.heliyon.2021.e08051>.
- Asigbaase, M., Dawoe, E., Sjogersten, S and Lomax, B.H. (2021). Biomass and carbon stocks of cocoa agroforestry systems in Ghana. *Agriculture, Ecosystems and Environment* 306, 107192. <https://doi.org/10.1016/j.agee.2020.107192>.
- Asigbaase, M., Dawoe, E., Lomax, B.H. and Sjogersten, S. (2021). Decomposition and nutrient mineralization of leaf litter in smallholder cocoa agroforests: a comparison of organic and conventional farms in Ghana. *Journal of Soils and Sediments* 21, 1010-1023. <https://doi.org/10.1007/s11368-020-02844-4>.

- Asigbaase, M., Lomax, B.H., Dawoe, E. and Sjogersten, S. (2021). Influence of organic cocoa agroforestry on soil physico-chemical properties and crop yields of smallholders' cocoa farms, Ghana. *Renewable Agriculture and Food Systems* 36, 255–264. <https://doi.org/10.1017/S1742170520000290>

Conferences/Workshops Attended

- Influence of organic cocoa agroforestry systems on soil physico-chemical properties and crop yields, Ghana. British Soil Science Society Conference, University of Sheffield, UK, 4-5 September 2019.
- Does organic management of cocoa agroforestry systems contribute to environmental sustainability? Research poster, Nottingham Environment Conference, The University of Nottingham, UK, 24 June 2019.

Mr. Anthony Baidoo

Research Interest

- Forestry and Climate Change
- Forest Resources and Land use,
- Forest Ecology and Inventory
- Collaborative Forest Management

Workshops Attended

- Farmers' sensitisation workshops organised by the Centre for Climate Change and Gender Studies in collaboration with an NGO, Environment and Women Association of Ghana (EAWAG) with financial support from Global Greengrants Fund from 12th to 19th February 2019 at Boffourkrom, Nkwadum, Pepewase, Asantefo Sreso, and Koase. The workshops were under the theme "Promoting best Farming Practices that conserve Biodiversity, Mitigate Climate Change and Promote Environmental Sustainability".
- Ghana Gender University workshop at Centre for Gender Studies, University of Ghana, Legon. Date: 12th and 13th December, 2019

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

Introduction

The Department of Environmental Management (DEM) is under the School of Natural Resources. Like any other academic department at UENR, DEM's mandate is underpinned by an Act of Parliament (Act 830) which established UENR, and is directly responsible for: building competencies, developing innovative academic and industrial-driven programmes (both undergraduate and postgraduate), ensuring effective teaching, conducting cutting-edge research and embarking on community outreach programmes aimed at protecting the environment (air, water and land), and promoting sustainable utilization of natural resources.

The department has research interests in:

- Land Reclamation and Restoration Practices
- Soil & Water Quality Analysis
- Fire Safety and Disaster Management
- Environmental Impact Assessment & Auditing
- Environmental Conflict Resolution & Governance
- Environmental Law & Policy Analysis
- Environmental Risk Analysis and Management
- Natural Resources (air, land, water & mineral resources) Management
- Environment and Water Sustainability
- Mining, Environment and Agriculture
- Climate Change and Sustainability Management
- Climate Change and Water Resources Management
- Solid Waste Technology and Management
- GIS & Remote Sensing Technologies/Geospatial Analysis
- Ecological Economics & Modeling.

The Department offers a number of programmes (both regular and weekends). These programmes include: Diploma in Fire, Safety and Disaster Management; BSc Natural Resources Management (with option in Land Reclamation and Restoration); and BSc Fire and Disaster Management. Other programmes such as BSc Environmental Management and Resource Sustainability (EMReS), Postgraduate Programmes (MSc/MPhil/PhD) in Environment and Water Sustainability (PEWS) as well as MSc/MPhil Disasters and Humanitarian Emergencies have also been developed, waiting accreditation.

Profile of Academic Staff: Research, Publications, Internationalization, Community Engagement and Conferences for the 2020/2021 Academic Year.

1. Dr. Fred Owusu-Ansah (Senior Lecturer & HoD)

Research Activities/Interests:

- Climate Change and Variability: Implications for Crop Production in Ghana.
- Characterisation of Water Treatment Residues: Implications for Land Application.
- Mining and Rural Livelihood: Promoting Sustainable Compensation Framework for Household Farmers in Ghana.
- Famers Risk Perceptions of Large-Scale Mining in Ghana.
- Global Environmental Change and Sustainable Water Resources Management.
- Environmental Law & Policy Analysis.
- Environmental Impact Assessment and Auditing.
- Environmental Risk Analysis & Sustainability Management.
- Solid Waste Management Decisions and Green House Gas Emission Impact

Innovation and Publication(s):

- Owusu-Ansah, F (2020). Famers' Education and Risk Perception of Large Scale Mining in Ghana. Current World Environment (International Journal), Vol. 15, No. (Special Issue 1) 2020, 47-75. ISSN: 0973-4929. www.cwejournal.org.

Internationalization:

- Reviewer, Journal of Environmental Protection - JEP, USA
- Article Editor, Sage Publications Inc.: CA, USA
- Editorial and Advisory Board Member, Current World Environment - ISI Journal, India
- Advisory Board Member, Hanell International
- Member of Environmental Experts
- Member, START International, USA.
- Member, Environmental Science and Forestry Alumni Association, Syracuse, NY, USA.
- Member, Collegiate Science and Technology Programme (CSTEP), USA.
- Member, America Water Resource Association – AWRA, USA.
- Affiliate, Conservation International.

Community Engagement and Extension Services

- Technical Editor, Journal of Energy and Natural Resource Management, Ghana.
- Internal Advisory Board Member, REGIG, Ghana.

Conferences/Workshops/Seminars:

- Engineering & Science Career Network: Career Eco Virtual Fairs hosted by the American Water Resources Association, Live Streaming Participation via AWRA's Webinar Center, 4405 Northside Parkway, Suite 120, Atlanta, GA 30327, April 28, 2021.
- American Water Resources Association Conference on Making Good Decisions: Utilizing Decision-Making Science & Geospatial Data to Streamline Water Planning & Management. Speaker: Maria T. Gibson (Hydrogeologist), Integrated Groundwater Resources. Live Streaming Participation via AWRA's Webinar Center, WOODBRIDGE, VA, USA. July 17, 2020
- American Water Resources Association Conference on Developing Pathways to Solutions to Wicked Water Problems. Speaker: Sharon B. Megdal, Director (University of Arizona Water Resources Research Center). Live Streaming Participation via AWRA's Webinar Center, WOODBRIDGE, VA, USA. July 15, 2020.
- Technologies in Practical Remote Education Seminar. Organised by EDIBON International (Innovating Engineering and Technical Teaching Equipment), Madrid, Spain. Live Streaming Participation via EDIBON Cloud Learning Webinar Platform, July 01, 2020.
- American Water Resources Association Conference on Why Geophysics is Needed for Water Resources Management. Speaker: Max Halkjaer, (Service Line Leader, Water Resources Management). Live Streaming Participation via AWRA's Webinar Center, WOODBRIDGE, VA, USA. May, 20, 2020
- The 7th International Congress on Environment and Social Responsibility in Mining. Organised by GECAMIN Centro de Minería (PUCV), CiSGER (Universidad del Desarrollo, The University of Queensland, Sustainable Mineral Institute, Australia, SQM (Solution for Human Progress). Hotel Sheraton, Santiago, Chile. Live Streaming Participation via GECAMIN Platform. September 4 – 6, 2020

2. Dr. Mary Antwi (Senior Lecturer)

Research Activities/Interests:

- GIS and remote sensing technologies/Geospatial analysis
- Integrated soil fertility management
- Land management systems
- Environmental management/Disaster risk modelling
- Land surveying and mapping
- Watershed modelling, land-use change and sedimentation rates within the 'building the resilience of Lake Bosomtwe' (RELAB) project in the Ashanti region.

Internationalization:

- Research Fellow, Regional Centre for Energy and Environmental Sustainability (RCEES), UENR sponsored by the World Bank.
- Member, Organisation for Women in Science for the Developing World (OWSD)

Community Engagement:

- Advanced Fire Information System (AFIS) project to forecast fire incidence in Ghana sponsored by the Skills Development Fund (SDF II)

Partnership/ Collaboration:

- Nature Based Solutions for Agricultural Systems in the Bono East Region in collaboration with the Centre for Development Innovation, Wageningen University and Research.
- Building the Resilience of Lake Bosumtwi to Climate Change (RELAB) project funded by DANIDA, in partnership with Aarhus University, Denmark.

Innovation and Publication(s):

- Austin Asare, Hans Thodsen, Mary Antwi, Emmanuel Opuni-Frimpong, Peter Sanful. (2021). Land Use and Land Cover changes in Lake Bosumtwi Watershed, Ghana (West Africa). Remote Sensing Applications: Society and Environment. <https://doi.org/10.1016/j.rsase.2021.100536> . (<https://www.sciencedirect.com/science/article/pii/S2352938521000720>)
- Adams, E. D., & Antwi, M. (2021). Modelling the risk of forest to fire for the Bosomkese Forest Reserve, Ahafo Region, Ghana. South African Journal of Geomatics, 10(1). DOI: 10.4314/sajg.v10i1.
- Kabo-Bah, Amos T., Daniella D. Sedegah, Mary Antwi, Webster Gumindoga and Saied Eslamian. "How to Increase Water Harvesting in Africa". Handbook of Water Harvesting and Conservation: Case Studies and

Applications Examples (2021):141 – 151. Wiley Online Library. <https://onlinelibrary.wiley.com/doi/abs/10.1002/9781119776017.ch9>

- Kabo-Bah, Amos T., Daniella D. Sedegah, Mary Antwi, Webster Gumindoga and Saied Eslamian. “How to Increase Water Harvesting in Africa”. Handbook of Water Harvesting and Conservation: Case Studies and Applications Examples (2021):141 – 151. Wiley Online Library. <https://onlinelibrary.wiley.com/doi/abs/10.1002/9781119776017.ch9>
- Höflinger, S., Antwi, M., Amprofi, A.A., and Kabo-Bah, A.A. (2020). Spatial Identification of Potential Dump Disposal Sites for Effective Waste Management in the Sunyani Municipality, Ghana. Journal of Geoscience and Environment Protection. Vol. 8(11). DOI: 10.4236/gep.2020.811005
- Bienibuor, A.K., Preko, K., Aning, A.A., Antwi, M., and Emahi, I. (2020). Application of Elcetromagnetic and Electrical Resistivity Methods for Borehole Siting in Low-Grade Metavolcanic and Metasedimantary Rocks, Sunyani West, Ghana. Journal of Environment and Earth Science. Vol. 10 (10), DOI: 10.7176/JEES/10-10-05
- Amproche, A.A., Antwi, M., Kabo-bah, A.T. (2020). Geospatial Assessment of Land Use and Land Cover Patterns in the Black Volta Basin, Ghana. Journal of Remote Sensing and GIS. Vol. 9 (1), 1000269. 1-7. DOI: 10.35248/2469-4134.20.9.269
- Antwi, M. (2020). Integrated soil fertility management as a potential for Ghana’s development: A geospatial approach, In The challenge of African Potentials: Conviviality, Informality and Futurity. Editors: Yaw Ofosu-Kusi and Motoji Matsuda. Langaa RPCIG publications, Cameroon. ISBN: 9789956551149; 276 pp.
- Amproche, A.A., Antwi, M., Kabo-bah, A.T. (2020). Geospatial Assessment of Land Use and Land Cover Patterns in the Black Volta Basin, Ghana. Journal of Remote Sensing and GIS. Vol. 9 (1), 1000269. 1-7. DOI: 10.35248/2469-4134.20.9.269
- Antwi, M. (2020). Integrated soil fertility management as a potential for Ghana’s development: A geospatial approach, In The challenge of African Potentials: Conviviality, Informality and Futurity. Editors: Yaw Ofosu-Kusi and Motoji Matsuda. Langaa RPCIG publications, Cameroon. ISBN: 9789956551149; 276 pp.

Conferences/Workshop/Seminars/Webinars Attended

- Landscape Governance, an online short course organised by the Wageningen Centre for Development Innovation, May – June, 2021.
- Bridging the Gap – Science for the public, an online short course delivered by the Danida Fellowship Centre, December, 2020.
- Conducting Excellent and Innovative Research despite the pandemic, a webinar series organised by CSIR branch of OWSD Ghana Chapter and supported by Elsevier, October, 2020.

3. Dr. Paul K. Nsiah (Lecturer)

Research Activities/Interest

- Mine land reclamation
- Restoration/rehabilitation of disturbed landscapes/forests
- Land degradation neutrality assessment
- The use of biological geotextiles in erosion and sediment control
- Mine-spoil amendment for vegetation establishment on degraded lands

Publication(s)

- Nsiah, P. K., and Schaaf, W. (2020). Subsoil amendment with poultry manure as topsoil substitute for promoting successful reclamation of degraded mine sites in Ghana. *Journal of Natural Resources and Development* 2020; 10: 01-12; Doi: <https://www.jnrd.info/2020/07/10-5027-jnrd-v10i0-01/>
- Dampney, F.G; Birkhofer, K; Nsiah, P.K. and Enrique G, De la Riva, E. G. (2020). Soil properties and biomass attributes in a former gravel mine area after two Decades of forest restoration. *Land* 2020, 9, 209; www.mdpi.com/journal/land doi:10.3390/land9060209
- Nsiah, P. K., and Schaaf, W. (2018). The potentials of biological geotextiles in erosion and sediment control during gold mine reclamation in Ghana. *Journal of Soils and Sediments*; Volume 19, Issue 4, pp 1995 – 2006. Doi: <https://doi.org/10.1007/s11368-018-2217-7>
- Nsiah, P. K., and Schaaf, W. (2019). Effect of topsoil stockpiling on soil properties and organic amendments on tree growth during gold mine reclamation in Ghana. *Journal of the American Society of Mining and Reclamation*; Vol.8, No.1. Doi: <http://dx.doi.org/10.21000/JASMR19010045>

Conferences, Workshops/Seminars

- Mainstreaming Climate Information for Resilient Agricultural Systems to Support Sustainable Development in Ghana, 7th October, 2020; IDL Conference Center, KNUST
- American Society of Mining and Reclamation Annual Conference, 3rd – 7th

June, 2019; Big Sky, Montana; USA.

- International Erosion Control Association Conference, 11th – 14th February, 2018; Long Beach, California USA.

4. Dr. Samuel Kumi (Lecturer)

Research Activities/Interests

- Mining Environmental Management and Sustainability
- Natural Resource Exploitation and Ecosystem Services,
- Changes in Economic Value of Ecosystem Services in Mining Landscape, Ghana
- Mineral Resources Development Impacts
- Patterns of distribution and diversity of birds and butterfly over a mining landscape, Ghana
- Assessing the Impacts of Mining on Soil and Water Quality in Ahafo, Ghana
- Evaluating Environmental Permitting for Sustainable Natural Resource Exploitation in Ghana
- Functionality of mining laws and sustainable rural livelihoods
- Dynamics of Natural Resource Conflict in a mining regions in Ghana
- Evaluating Energy Requirement for Households in mining resettlements

Publication(s)

- Kumi, S., Addo-Fordjour, P., Fei-Baffoe, B., Belford, E. J. D., & Ameyaw, Y. (2021). Land use land cover dynamics and fragmentation-induced changes in woody plant community structure in a mining landscape, Ghana. *Trees, Forests and People*, 4, 100070.

Outreach Programmes/Extension Services

- Member, UENR Kenyasi Campus Development Committee
- Member/secretary, Committee that reviewed BSc/MSc.Mphil/PHD courses for sustainable mining programme to be undertaken on UENR-Kenyasi Campus
- Member, Quality Assurance Member for School of Natural Resources-UENR
- Member, Newmont Ahafo North Resettlement Negotiation Committee-Afrisipa
- Member, Newmont- Dokyikrom Resettlement Negotiation Committee, Kenyasi

5. Dr. Abdulai Darimani (Lecturer)

Research Activities/Interests

- Land and land governance
- Environmental and Social impact of Mining
- Environment and Social Development
- Climate Change and Disaster Risks
- Environmental and Social Impact Assessment
- Environmental and Fire Risk Analysis & Management in the built environment.
- Solid Waste Management in the built environment

Publication(s)

- Darimani, A (2020), Corruption Risk Assessment Report on Minerals and Mining Licensing in Ghana, Ghana Integrity Initiative, www.tighana.org
- Darimani A. and Asumadu P. B., (Pending submission), Determining the Effect of Land Administration Reforms on land Service Delivery of the Lands Commission of Ghana
- Darimani, A. and Azumyarn, J. A., (Pending submission). Determining The Impact Of Fire Outbreaks On Safety And Preventive Measures An Analysis Of Trend Of Fire Outbreaks In The Built Environment Of Ghana.
- Darimani, A. (Under preparation) Natural Resources Governance in Urban Communities of Ghana the case of traditional governance mechanism response to land in Kenyasi and Kwabenya

Conferences/Workshops/Seminars

- The Jospong Group of Companies through its Africa Environmental Sanitation Consult Conference on the launch of Environmental Sanitation Research Fund for public universities and research institutions in Ghana. Speaker: Agyepong Siaw (Chair of the Jospong Group of Companies), purpose, focus, principles and governance for the Research Fund, May 2021
- Validation Meeting of Ghana's Country Mining Vision Assessment Report organized by Ghana Integrity Initiative and Stop the Bleeding Campaign. Facilitator: Benedict Dor (Facilitator), Stakeholders Input into the draft Country Mining Vision assessment report for Ghana, Virtual via Zoom ID 814 1031 7239, Thursday 20th May, 2021.
- Pre-Read for Clean Air Fund Ghana Programme Strategy Virtual Workshop. Facilitator: Patrin Watanatada (Professional Facilitator and Clean Expert),

zoom Meeting link ID 814 9466 6053, Thursday 21st October 2021.

- Workshop organized by Third World Network-Africa on Mining Policy and Practice and the Rights of Mining Communities in Northern Ghana. Speakers: Yao Graham (Lawyer and Policy Analyst) and Abdulai Darimani (Environment and Social Development), Jocom Golden Hotel, Bolgatanga. Ghana. February 13-14th, 2020.
- Transparency International and Ghana Integrity Initiative Virtual Launching of the Research Report on Mining Awards Corruption Risks Assessment. Speaker: Abdulai Darimani (Environment and Social Development), Presentation of the Research Report-context, methodology, Findings and Recommendations, Accra, Ghana Tuesday 28th April, 2020, Virtual.
- Annual National Conference of the Association of Local Authorities of Ghana on the theme: The Dynamics of Local Economic Development, Climate Change, Sanitation and Innovative Public Policies. Speakers: Braimah Imoro (Planner), and Abdulai Darimani (Environment and Social Development), Taking Urgent Action to Combat Climate Change and Its Impact (SDG 13), Golden Tulip, Kumasi, Ghana, May 17-19th 2020

Outreach Programmes/Extension Services

- Member of three members Committee of the International Association of Impact Assessment Ghana (IAIA Ghana) for drafting of Regulations for National Environmental Practice (Certification And Professional Conduct Of Environmental Practitioners) Regulations, 2021.
- Coordinator, West Africa Advisory Board of Global Greengrants Fund (GGF) www.ggf.org
- Reviewer, Springer, Nature and Mineral Economics Research Publishing.

6. Mr. Alex Amerh Agbeshie (Lecturer)

Research Activities/Interests

- Environmental Soil Science and Agronomy
- Nutrient cycling on reclaimed lands
- Soil sustainability and environmental protection.
- Climate-smart agriculture for sustainable land and water management.
- Biogeochemical characterization of soils
- Soil, plant, water systems and environment science.

Publication(s)

- Banunle, A., Fei-Baffoe, B., Miezah, K., Ewusi-Mensah, N., Jørgensen, U., Aidoo, R., Amoah, A., Abaidoo, R.C. & Agbeshie, A.A. (2021). Utilisation Potentials of Invasive Plants in the Owabi Dam in the Ashanti Region of

Ghana. BioResources. 16(2), 3075-3095.

- Agbeshie, A. A., Logah, V., Opoku, A., Tuffour, H. O., Abubakari, A., & Quansah, C. (2020). Mineral nitrogen dynamics in compacted soil under organic amendment. Scientific African, e00488.
- Atta-Darkwa, T., Asomaning, S. K., Agbeshie, A. A., Danso, E. O., Akolgo, G. A., Amankwah, E., & Owusu, P. A. (2020). Assessment of physicochemical properties of Besease wetland soils, Ghana. African Journal of Agricultural Research, 15(4), 509-523.

Outreach Programmes/Extension Services

- Reviewer, American Journal of Agriculture and Forestry
- Member, British Society of Soil Science

Community Engagement

- Facilitator: Biochar production. Training programme for farmers on good soil management and amendment production, organised by Building Stronger Universities III (Danida - BSU III), KNUST Call Three Chapter, Kumasi - Ghana, March, 2021.

Grants and Scholarships

- BSU III - Harnessing the bioeconomic potential of bioresources in the Owabi Catchment Area. Total amount (DKK) – 120,000.00. June, 2018 – Date.
- SDF-II - Tools for ensuring sustainable urban agriculture in Sunyani municipality. Total Amount (GHC) – 302,800.00. December, 2018 – 2019

7. Mr. Austin Asare (Lecturer)

Research Activities/ Interests

- Land management, surveying and mapping
- Natural resources and Environmental Management
- GIS and remote sensing technologies and analysis
- Silviculture, Forest Management and Inventory
- Ecological survey / Biodiversity Assessment and Analysis

Publication(s):

- Austin Asare, Hans Thodsen, Mary Antwi, Emmanuel Opuni-Frimpong, Peter Sanful. (2021). Land Use and Land Cover changes in Lake Bosumtwi Watershed, Ghana (West Africa). Remote Sensing Applications: Society and Environment. <https://doi.org/10.1016/j.rsase.2021.100536> . (<https://www.sciencedirect.com/science/article/pii/S2352938521000720>)

- Yalley, M. K., Adusu, D., Bunyamin, A. R., Okyere I., & Asare, A. (2020). Natural Regeneration of Indigenous Tree Species in *Broussonetia papyrifera* Invaded Sites in Pra-Anum Forest Reserve. *Hindawi International Journal of Forestry Research* Volume 2020, Article ID 6347962, 9 pages <https://doi.org/10.1155/2020/6347962>.
- Asare, A., Asante, W. A., Owusu-Prempeh, N., Opuni Frimpong, E., & Adusu, D. (2020). Comparative Analysis of Understorey Floristic Diversity and Carbon Stocks in Poorly and Intensively Managed *Tectona grandis* Plantations. *International Journal of Forestry Research*, 2020. Volume 2020, Article ID 8868824, 13 pages <https://doi.org/10.1155/2020/8868824>
- Thomas, A.-D., Ofosu, A.E., Emmanuel, A., De-Graft, A.J., Ayine, A.G., Asare, A. and Alexander, A. (2020). Comparison and Estimation of Four Infiltration Models. *Open Journal of Soil Science*, 10, 45-57. <https://doi.org/10.4236/ojss.2020.102003>
- Asare, A., Asamoah, B. D., & Sanful, P. O. (2019). Assessment of Heavy Metal Contaminants Using Pollution Indices in Ankobra River at Prestea Huni-Valley District, Ghana. *Journal of Geoscience and Environment Protection*, 7, 25-35. <https://doi.org/10.4236/gep.2019.79003>
- Krampah, F., Lartey-Young, G., Sanful, P. O., Dawohoso, O., & Asare, A. (2019). Hydrochemistry of Surface and Groundwater in the Vicinity of a Mine Waste Rock Dump: Assessing Impact of Acid Rock Drainage (ARD). *Journal of Geoscience and Environment Protection*, 7, 52-67. <https://doi.org/10.4236/gep.2019.71005>

Conferences/Workshops/Seminars

- 2020: Presentation on “Drivers of Land Use and Land Cover Change using GIS and Logistic Regression Approach” during RELAB Project Annual meeting in June, 2020.

Consultancy/Outreach Programmes/Extension Services:

- Work Package Four (WP4) Memeber , Building Resilience of Lake Bosumtwi to Climate Change (RELAB Project) www.relabproject.uenr.edu.gh: (Jan 2018 – Dec 2022).

8. Mr. Joseph Asako Azumyarn (Assistant Lecturer)

Research Activities/Interests

- Spatial and temporal distribution of fires in dry and humid savanna ecological zones of Ghana
- Assessing the driving factors, underlying causes and impacts of fires in dry and humid savanna ecological zones of Ghana

- Determining the Fuel dynamics to predict fire behaviour in dry and humid savanna ecological zones of Ghana.
- Evaluate the firefighting systems in the dry and humid savanna zones of Ghana.
- Assessing the trend of fire in Ghana

9. Mr. Daniel Adusu (Assistant Lecturer)

Research Activities/Interests

- Reclamation and restoration of degraded lands.
- Ecological assessment in forest ecosystems.
- Remediation of degraded soils.
- Environmental quality monitoring and auditing.
- Forest carbon stocks estimation
- Soil macrofauna, and nutrient cycling assessment

Publication(s)

- Damphey, F. G., Adofo, E., Duah-Gyamfi, A., Adusu, D., & Opuni-Frimpong, E. (2021). Logging effects on seedling regeneration and diversity in a tropical moist semi-deciduous forest in Ghana. *Geology, Ecology, and Landscapes*, 1-12.
- Asare, A., Asante, W. A., Owusu-Prempeh, N., Opuni Frimpong, E., & Adusu, D. (2020). Comparative Analysis of Understorey Floristic Diversity and Carbon Stocks in Poorly and Intensively Managed *Tectona grandis* Plantations. *International Journal of Forestry Research*, 2020.
- Yalley, M. K., Adusu, D., Bunyamin, A. R., Okyere, I., & Asare, A. (2020). Natural Regeneration of Indigenous Tree Species in *Broussonetia papyrifera* Invaded Sites in Pra-Anum Forest Reserve. *International Journal of Forestry Research*, 2020.
- Opuni-Frimpong, E., Gabienu, E., Adusu, D., Opuni-Frimpong, N. Y., & Damphey, F. G. (2021). Plant diversity, conservation significance, and community structure of two protected areas under different governance. *Trees, Forests and People*, 4, 100082.

Conferences/Workshops/Seminars

- International Forestry Students Association – Northern Africa Regional Meeting.
- Understanding climate change with space science (Participant).
- CDM workshop on carbon emission reduction in Ghana (Participant)
- Proposal writing and data analysis workshop (Participant)
- Mining and its environmental and social impacts in Ghana (Participant)

- Seminar on university governance, research skills development, university examinations, career progression, and development of good working relations (Participant)

Outreach Programmes/Extension Services

- A study on gentrification and inclusive city development in the Greater Accra Metropolitan Area (GAMA)- Good Governance Africa.
- Training workshop on the roles and responsibilities of municipal and metropolitan actors in local economic development – Good Governance Africa.
- Resource extraction and sustainable development of mine-take communities in Ghana - Good Governance Africa.

10. Ms. Sylvia Adipah (Assistant Lecturer)

Research Activities/Interest

- Environmental Science and Engineering
- Climate Change and Water Resources
- Waste Management and Recycling
- Water Pollution Control
- Environmental and Fire Risk Analysis
- Health and Safety Management
- Environmental Hazards and Disaster Management
- Management in the built environment

Publication(s)

- HYDRUS-2D simulation of nutrient fluxes from deep trenched vip faecal sludge-Ongoing research
- Preparation of cationic polyacrylamide and its related application in wastewater treatment-Ongoing research
- Performance of KOH as homogeneous and heterogeneous catalyst for biodiesel production via transesterification of waste Adansonia digitata non-edible oil. Ongoing research
- Highly promising non-edible plant oil for biodiesel production: A critical review of current work on neem (Azadirachta indica) and its biodiesel-Ongoing research

Workshop/Seminar

- A workshop organized by Centre for Grants, Research and Innovation. Training programme for newly appointed Lecturers. September 10, 2021.
- Tain Hydro-Solar Energy Project Collaboration Between TABCON Energy and UENR. September 25, 2021.

11. Mr. Solomon Akubire Afour (Assistant Lecturer)

Research Interests

- Fire outbreaks and its implications on Ghana's infrastructural deficits
- Improving the fire resistivity of local building materials
- The effects of wildfires on food production
- Determining the fire toxicity of building and common household materials
- Effectiveness of fire safety laws and regulations in Ghana
- Minimising market fires in Ghana
- Reducing domestic fire outbreaks
- Types of common hazardous materials in Ghana and the country's preparedness to handle incidents involving them
- Effective fire safety measures for Ghanaian homes
- Improving fire investigation in Ghana
- Gas explosions, local causes, and preventive measures

12. Mr. Ernest Gambrah (Senior Technician)

Research Activities/Interest

1. Fire Risk Analysis
2. Job Hazard Analysis and Management
3. Occupational Health and Safety Management
4. Disaster Management and Vulnerability Analysis
5. Urban Planning and Management.
6. GIS and Remote Sensing Application for Disaster Mitigation

Publication(s)

- » Carlis-Paittoo, B., & Gambrah, E. (2019). Incident Command System Implementation in Ghana: A Case Study of Sunyani Municipality.

Conferences

- » Co-Presenter. Incident Command System Implementation in Ghana: A Case Study of Sunyani Municipality International Conference on Applied Science and Technology Conference. Abstract Presentation. 2018.

Workshop/Seminar

- » Research proposal writing, chemistry department- University of Energy and Natural Resources (UENR)-Sunyani, Ghana.
- » Participated in the Second AfriGEOSS Symposium workshop organized by GEO Group on Earth Observation at Tyco, Sunyani, Ghana.
- » Tertiary Student Consult Forum on the Need to Invest Oil Revenues in the Agriculture and Educational Sector by Africa Centre for Energy Policy. UENR-Sunyani, Ghana.
- » Participated in the Success Africa, a nationwide series of personal development Conference on Leadership, Entrepreneurship and Career Development.
- » Understanding DVBS2, DVBT2 & DVB-H Satellite Technology trainee, organised by the Earth Observation Research and Innovation Centre (EORIC). University of Energy and Natural Resources, Sunyani.

Outreach Programme and Extension Services

- » Facilitated Student Field Practicals -Department of Environmental Management
- » Regional Trainer- Population and Housing Census, 2021
- » Supervisor- Population and Housing Census, 2021
- » Registration Officer- National Identification authority(NIA), Ghana ,2020
- » Facilitated the National Forest Plantation Program,Forestry Commission, Ghana, 2015
- » Performed Forest Reserve Boundary Cleaning and Inspection Forestry Commission, Ghana, 2015

Mr. Clement Gyamfi (Senior Administrative Assistant)

DEPARTMENT OF FISHERIES AND WATER RESOURCES

Introduction

The Department was established in 2013 with three (3) academic staff (Lecturers) and one (1) non-academic staff (Technician) at her inception. Eleven (11) students which included nine (9) male and two (2) female students were the first graduates in BSc. Natural Resources (Fisheries option) in 2016.

Activities of the Department

- Teaching of courses for undergraduate students in Aquaculture, Fisheries and Water Resources. This is coupled with practical exposure to each course both on the field and in the laboratory.
- Industrial attachment of students in second semester level 300 to enhance

their field experience with stakeholders in the aquaculture, fisheries and Water resources sectors.

Academic Programmes

II. Department of Fisheries and Water Resources headed by

Dr Seyramsarah Blossom Setufe

iii. Undergraduate Programmes:

g. BSc. In Natural Resources Management (with specialization in Aquaculture and fisheries)

h. BSc Aquaculture and Aquatic Resource Management (In-view)

iv. Postgraduate Programmes

v. MPhil Sustainable Aquaculture (In-view)

vi. MPhil Fisheries Management (In-view)

Staff and Students Statistics

The staff and student's statistics of the Department is given in Table 1 and Table 2 respectively.

Table 1: Staff in the Department of Fisheries and Water Resources

s/n	Name	Rank/Designation
1	Dr. Daniel Akoto Sarfo	Senior Lecturer (HoD)
2	Prof. Simon Abugre	Associate Professor
3	Dr. (Mrs.) Mercy Derkyi	Senior Lecturer
4	Mr Alexander Baffour Afrifa	Senior Lecturer (contract)
5	Mr Isaac K. Abebrese	Senior Lecturer (contract)
6	Mrs N.Y. Opuni-Frimpong	Lecturer
7	Dr. Michael Asigbaase	Lecturer
8	Mr. Anthony Baidoo	Assistant Lecturer
9	Mr Edward Kander	Principal Technician
10	Mr. Emmanuel Sackey	Senior Technician
11	Mr. Sellasie Akoto	Senior Technician
12	Ms Amanda Sarfo Boateng	Senior Administrative Assistant
13	Ms. Yvette Adu- Gyamfi	National Service
14	Joseph Tetteh	National Service

Table 2: Student Population in the Department of Fisheries and Water Resources

Year/Level	Male	Female	Total
300	7	7	14
400	5	2	7
Total	12	9	21

Research Collaborations (Local and International)

Name: Dr Seyramsarah Blossom Setufe

(Local and International)

- West African Marine Fish DNA Barcoding Network (WAMBA) (2021-2024)
- Management and Resilience of Small-Pelagic Fisheries in West Africa (GREPPAO)

Workshops/Conferences/Public Lectures

- 8th Virtual Conference of Nigerian Women in Agricultural Research and Development (NiWARD) Conference and Annual General Meeting. “Sustainable Agricultural Development through innovative global linkages” November 9th- November 11th, 2020 in Unilorin, Nigeria.
- First Hybrid Aquaculture Conference in West Africa. World Aquaculture Society. Chamber of Aquaculture, University of Ghana, Legon. Zoom. 14-16 May, 2021.
- African Women in Agricultural Research and Development (AWARD): AWARD virtual Gender in Agriculture course for Senior Managers and Leaders , June, 24, 2021.
- Ghanaian Women in Agricultural Research and Development (GHAWARD): Role Modelling & Awareness Creation Event. 29th- 31st, June, 2021.
- Workshop on the use of Fish Farm Tracker for Fish Farmers organized by CSIR / Fisheries Commission Sunyani, August, 2021.
- The DIFS: Department of Ichthyology and Fisheries Science, Centre of Excellence for Training in Marine Fisheries and Aquaculture: Rhodes University sponsored by African Union/ Aquaculture African. Zoom. 27th of October, 2021.
- Scopus Research Toolbox in Pretoria, South Africa. Zoom. 11th Nov. 2021.

Proposals

- Project Title: Development of *Clarias gariepinus* Juvenile of Improved Economic Traits (Growth Rate, Survival, and Disease Resistance) for

Accelerated fish production in Ghana submitted to African Commonwealth of Universities (ACU) (Awaiting Result).

- Impacts of the lockdown during Covid-19 Pandemic on Fishermen, Fish Processors and Fish farmers in the West Coastal Region of Nigeria submitted to West African Research Association Travel Grant (WARC) (Awaiting Result)

Publication(s) (For the year under review)

- SeyramSarah Blossom Setufe (2020): Freshwater Fish Species Composition and Their Abundance at Buipe Landing Site of Black Volta in the Savannah Region. Book of Abstracts at the 8th NiWAARD Annual Conference & General Meeting hosted by University of Ilorin, Nigeria. Theme: Sustainable Agricultural Development through Innovation and Global Linkages from (9th -11th November, 2020).
- Samuel K. K. Amponsah, Berchie Asiedu, Selasi Yao Avornyo, SeyramSarah Blossom Setufe, Nana Ama Boadu Afranewaa and Pierre Failler. (2021): Growth, Mortality and Exploitation Rates of African Moonfish (*Selene dorsalis*, Gill 1863) Encountered in the Coast of Ghana (West Africa). *European Journal of Biology and Biotechnology*. 2.2: 6-10.
- Patrick Senam Kofi Fatsi, Shaharior Hashem, Ebenezer Koranteng Appiah, Emmanuel Tetteh-Doku-Mensah, SeyramSarah Blossom Setufe, Hidetoshi Saito Koichiro Kawai. (2021): Morphological divergence within the largest genetically consistent group of wild Tilapia. *Environ. Biol. Fish.* Pg: 1-17.
- Olusola S. E., Ayebedun O.V., Abbah J.O., & Setufe S.B. (2021): Effects of Dietary Water Leaves (*Talinum triangulare*) and Malabar Spinach (*Basella alba*) Extracts Singularly or in combination on Growth, Immune Response and Disease Resisance of *Clarias gariepinus* Fingerlings. *Applied tropical Agriculture*, Volume 26, Issue 1.(in-press)
- SeyramSarah Blossom Setufe, William Junior Kumordzi, Solomon Essel, Samuel Kweku Konney Amponsah, Berchie Asiedu, Samuel Hennneh (2021): Analysis of Cost and Challenges Affecting the Profitability of Frozen Fish Enterprise in Sunyani Municipality. *Journal of University of Energy and Natural Resources*. (in-press).
- Setufe SeyramSarah Blossom, Ajani Emmanuel Kolawole, Emikpe Benjamin Obukowho (2021): Antibacterial potentials of *Lactobacillus plantarum* from fermented food origin as probiotic candidate in the treatment of African catfish (*Clarias gariepinus*) bacterial diseases. *African Journal of Biomedical Research*. (in-press)

Articles under Review

- SeyramSarah Blossom Setufe, Ansong Richard Selorm, Patrick Senam Kofi Fatsi, Olusola Sunday Emmanuel, Ibrahim Adeshina (2021) :Effects

of Stocking Density on the Growth Performance of Nile tilapia fingerlings (*Oreochromis niloticus*) fed various Commercial feeds in Earthen Pond. Tanzanian Journal of Agricultural Sciences

- Seyramsarah Blossom Setufe, Amponsah Samuel Konney Kweku, Bilikoni Jacob, Patrick Senam Kofi Fatsi (2021): A snapshot of the fish community in the Buie catchment area of the Black Volta River in Ghana". Journal of Fisheries and Coastal Management.
- Nkrumah Oduro and Seyramsarah Blossom Setufe (2021): An Assessment of Land use and Land cover changes at Pra River Basin. Tanzanian Journal of Agricultural Sciences.
(2021): Socio-Economic Analysis of Frozen Fish Enterprise in the Sunyani Municipality. Journal of University of Energy and Natural Resources.
- Seyramsarah Blossom Setufe, Eric Adu Acheampong, Samuel Kweku Konney Amponsah & Samuel Henneh (2021): "Pandemic Risk, Response and Resilience of Fishermen in the Coastal Region of Ghana": A Case Study of Stratum V11 of Volta Lake at Yeji Fishing Communities Chapter in a Book titled Pandemics Risk, Response and Resilience" to be published by Elsevier.
- Ibrahim Adeshina, Seyramsarah Blossom Setufe*, Kaosarat Omolara Abdulwaheed (2021): Distribution and Associated factors of *Gyrodactylus* sp. in African catfish (*Clarias gariepinus*) in Ilorin, Kwara State. Journal of Parasitology.
- Ibrahim Adeshina, Seyramsarah Blossom Setufe*, Zainab Omobolanle Aderibigbe (2021): occurrence of *Pseudomonas aeruginosa* in farm raised *Clarias gariepinus* in Saki town, Oyo State. Journal of Parasitology.
- Akanmu Olumuyiwa Ayodeji, Setufe Seyramsarah Blossom, Ejalonibu Fatimah Funmilayo & Ipinmoroti Mabel Omowumi (2021): Effect of Replacing Fishmeal with hydrolyzed feather meal on the growth performance and blood constituents of *Clarias gariepinus* (Burchell 1822). Nigerian Journal of Fisheries.

Community Engagements

- Coordination of Aquaculture Teaching and Research Centre of University of Energy and Natural Resources
- Review of Publications in Aquaculture, Fisheries and Water Resources
- Mentorship of Senior Secondary School Girls at Notre Dame Senior High School
- Research and grants committee member, School of Natural Resources
- Research and grants committee member, Department of Fisheries and Water Resource
- Coordinator, Fisheries and Aquaculture Society (FAS) UENR CHAPTER
- Treasurer, Fisheries and Aquaculture Society of Ghana (FaSOG)
- Member, Ghanaian Women in Agriculture and Research development

(GHAWARD)

- Member, Ghana Science Association (GSA)

Visits

- Pilot Aquaculture Centre, Kumasi
- Yeji Fishing Communities

Name: Prof. Berchie Asiedu

Research Collaborations (Local and International)

- West African Marine Fish DNA Barcoding Network (WAMBA) (2021-2024)
- Management and Resilience of Small-Pelagic Fisheries in West Africa (GREPPAO)
- The Network for advancing Sustainable Hydropower for Africa, Asia and South America (SHAASAN)

Workshops/Conferences/Public Lectures

- Presentation of Science Letter “WTO must ban harmful fisheries subsidies” to the Director-General of World Trade Organization. 5th November 2021 (Virtual) Presentation of Science Letter “WTO must ban harmful fisheries subsidies” to the Director-General of World Trade Organization. 5th November, 2021 (Virtual)
- Asiedu, B. (2021). Alternative Livelihood: A tool for Sustainable Fisheries Management in Ghana. Theme: environmentally sustainable, climate-resilient livelihood opportunities for artisanal fishing communities in Ghana. Mensvic Grand Hotel, East Legon, Accra. 3rd- 5th March, 2021.

Proposals

- Proposal to the Feed the Future Innovation Lab for Markets, Risks and Resilience (MRR)

Grant and Awards

- 2021 FORCE11 Scholarly Communication Institute (FSCI) Award.

Publication

- Asiedu, B., Okpei, P., Nunoo, F.K.E. and Failler, P. (2021). A fishery in distress: an analysis of the small pelagic fishery of Ghana. Marine Policy, 129, 104500
- Asiedu, B., Amponsah, S.K.K., Failler, P. and Commey, N. A. (2021). Population dynamics of *Ilisha africana* in Coastal Waters of Ghana. Fisheries & Aquaculture Journal, Vol. 12 Iss. 1 No: 288 1–7

- Ofori-Danson, P.K., Asiedu, B., Alhassan, E.H., Atsu, D.K. and Amponsah, S.K.K. (2021). Pre-impoundment fish stock assessment of the Black Volta: a contribution to fisheries management of Bui Reservoir in Ghana. *West African Journal of Applied Ecology*, 29(1): 35 – 48
- Anokyewaa, M. A., Amoah, K., Li, Y., Lu, Y., Kuebutornye, F.K.A., Asiedu, B. and Seidu, I. (2021). Prevalence of virulence genes and antibiotic susceptibility of *Bacillus* used in commercial aquaculture probiotics in China. *Aquaculture Reports*, 21, 100784
- Amponsah, S.K.K., Asiedu, B., Avornyo, S.Y, Setufe, S.B., Afranewaa, B.A.N. and Failler, P. (2021). Growth, Mortality and Exploitation Rates of African Moonfish (*Selene dorsalis*, Gill 1863) encountered in the Coast of Ghana (West Africa). *European Journal of Biology and Biotechnology*, 2(2), 6-10. <https://doi.org/10.24018/ejbio.2021.2.2.154>
- Amponsah, S.K.K, Commey, N. A., Asiedu, B., and Hasan Fazli (2021). Assessing the stock status of Atlantic bumper, *Chloroscombrus chrysurus*, Linnaeus 1766, from the coastal waters of Ghana. *Int. J. Aquat. Biol.*, 9(4): 248-253
- Sumaila, R.U., Skerrett, D, Schuhbauer, A., Villasante, S., Cisneros-Montemayor, A.M., Sinan, H., Burnside, D., Asiedu, B. and 289 additional authors. (2021). *Science*, 374 (6567), • DOI: 10.1126/science.abm1680.

Community Engagements

- Review of Scientific Publications in Fisheries, Aquaculture, Ocean Governance.

Visits

- Tema, Shama, Apam, Elmina, Ahiwem (all in Ghana) – Small pelagic fishery Project.

Name: Dr. Peter Sanful

Research Collaborations (Local and International)

- Building Resilience of Lake Bosumtwi to Climate Change (RELAB) Project(on-going)

Workshops/Conferences/Public Lectures

- Danida media and science communication workshop - December 2020
- Institutional visits to promote knowledge exchange and mechanisms for uptake of RELAB research results among major stakeholders involved in management and development of lake Bosomtwi watershed - Environmental Protection Agency, Water Resources Commission, Ghana Tourism Authority,

Fisheries Commission, AROCHA Ghana, Bosomtwe District Assembly, Bosom-Freho District Assembly - March 2021.
Stakeholder conference with above institutions - June 2021

Visits

- Research stay in Denmark - September to November 2021

Name: Mr. Amos Asase

Research Collaborations (Local and International)

- West African Marine Fish DNA Barcoding Network (WAMBA-net) Project.
- Building Resilience of Lake Bosomtwe to Climate Change (RELAB) Project.

Workshops/Conferences/Public Lectures

- 18th World Lake Conference. Theme; Governance, Resilience and Sustainability of Lakes for a Better Society. Guanajuato, Mexico 9-11th November, 2021
- Food Systems Dialogues for the Fisheries Sector organized by the National Development Planning Commission 6th October, 2021.
- First Hybrid Aquaculture Conference for the West African Region. Theme: New Strategies to Promote Inclusion and Transparency in Aquaculture Management in West Africa. Cedi Conference Centre Accra. 14-16th May, 2021.

Funding of Research Activities

The Danida Fellowship Centre (DFC) via RELAB funded my PhD research stay at Denmark

Publication(s)

- Asase, A., Darko, J. E., Temta, W. B., Asare, D. and Henneh S. (2021). Effects of frequency of eggs and fry harvest on seed production and growth of Nile tilapia. International Journal of Fisheries and Aquatic Studies, 9(5): 18-22. doi.org/10.22271/fish.2021.v9.i5a.2558.

Community Engagements

- Member, Academic Board, University of Energy and Natural Resources.
- Member, School Board, School of Natural Resources, UENR.
- Member, Quality Assurance Committee, School of Natural Resources, UENR
- Patron, Natural Resources Students Association (NARSA).
- Examinations Officer, Department of Fisheries and Water Resources, UENR

Visits

- Guest Researcher (PhD student), Department of Ecoscience, Institute of Aquatic Ecology, Aarhus University, Denmark. September 2021 – present.

Name: Dr Andrews Apraku

Workshops/Conferences/Public Lectures

- Biofloc Aquaculture for fish farmers or wizards. Johannesburg, South Africa. Zoom workshop - Aquaculture Africa Magazine, 23/09/2021.
- Practical Understanding of Aquafeed Formulation- Johannesburg, South Africa. Zoom workshop- Aquaculture Africa Magazine, 4 June, 2021.
- Aquatic Animal Health. Johannesburg, South Africa. Zoom workshop - Aquaculture Africa Magazine, 02/04/2021.
- Ocean Decade Laboratory- An Inspiring and Engaging Ocean. Zoom workshop- United Nation Decade of Ocean Science and Sustainable Development, 6-7 July, 2021.
- First Hybrid Aquaculture Conference in West Africa. World Aquaculture Society. Chamber of Aquaculture, University of Ghana, Legon. Zoom. 14-16 May, 2021.

Publication(s)

- Abdullateef Yusuf, Xuxiong Huang, Naison Chen, Songlin Li, Andrews Apraku, Weilong Wang, Adekunle David Micah (2020). Growth and metabolic responses of juvenile largemouth bass (*Micropterus salmoides*) to dietary vitamin c supplementation levels. *Aquaculture*, 534(9):736243 DOI: 10.1016/j.aquaculture.2020.736243.

Articles under review

- Andrews Apraku^{1,4}, Xuxiong Huang ^{1,2,3*}, Berchie Asiedu⁴, Christian L. Ayisi⁵. Fish oil replacement with virgin coconut and corn oil: Impact on growth performance, lipogenic and digestive enzyme activity, and mRNA expression of genes involved in lipid metabolism of Nile tilapia. *WJAA*-2020-0231.R1.

Community Engagements

- Member, Research and grants committee, School of Natural Resources
- Member, Research and grants committee, Department of Fisheries and Water Resource
- Member, Aquaculture Research and Development Team, Department of Fisheries and Water Resource

Name: Dr. Lesley Ntim

Research Collaborations (Local and International)

Center for Coastal Management (UCC) –Analysis of the Croaker Fishery along the Value Chain

Workshops/Conferences/Public Lectures

- Sub-Saharan virtual conference on water resources management in Africa (28th-29th October, 2021)
- Applying Design Thinking to Research, Social Development and Poverty Reduction in Coastal Communities (22nd September, 2021)
- Occasional Lecture on Building with Nature, a concept for climate resilient infrastructure in the coastal areas (18th August, 2021).

Articles under review

- Profitability analysis of Croakers along the value chain in the Central and Western Regions of Ghana.
- Economic reliance on Croakers by fishermen in the Central and Western Regions of Ghana.

Community Engagements

- Anlo Beach (W/R): Education on climate change and sea level rise, and its impact in the fishing community.
- Anlo Beach (W/R): Education of value chain actors on fishing seasons and sizes harvested.

Visits

- Four coastal communities in the Central and Western Regions of Ghana- Abrofu Mpoano in Cape Coast, Elmina landing quay, Anlo Beach and Sekondi landing quay.
- Centre for Aquaculture Research site (DFWR).

Name: Dr Awo Incoom

Workshops/Conferences/Public Lectures

- 6th general Assembly and International Conference for the Organisation for Women in Science for the Developing world, 2021.
- Training programme for Professional Development on Examination Policy and Results Management in the University Students Information Systems (USIS), 2021.

Community Engagements

- Member - African Association of Remote Sensing for the Environment
- Member, Research and grants committee, School of Natural Resources
- Member, Research and grants committee, Department of Fisheries and Water Resource

Name: Mr. Samuel Konney Kweku Amponsah

Research Collaborations (Local and International)

- West African Marine Fish DNA Barcoding Network – International
- Management and Resilience of Small-Pelagic Fisheries in West Africa (GREPPAO)

Workshops/Conferences/Public Lectures

- International Research Group -South WAMBA-net, 3-4 November, 2021, Senegal.

Proposals

- Conservation of critically endangered scalloped hammerhead shark (*Sphyrna lewini*) through community engagement in Dixcove, Ghana.

Grant and Awards

- Ideawild Grant for research equipment worth 700 USD.

Publication(s)

- Ofori- Danson, P.K., Asiedu, B., Alhassan, E.H., Atsu, D.K. and Amponsah, S.K.K (2021). Pre-impoundment Fish Stock Assessment of the Black Volta: A Contribution to Fisheries Management of Bui Reservoir in Ghana. West African Journal of Applied Ecology, vol. 29(1), pp. 35 – 48.
- Addo, S., Mullah, S., Ofori-Danson, P.K., Amponsah, S.K.K. and J. O. Nyarko, J.O. (2021). Prevalence of parasitic infections on cultured Nile tilapia, *Oreochromis niloticus* (Linnaeus, 1758) In Bong County, Liberia. Ghana J. Sci. 62 (1), pp. 13 – 25.
- Amponsah, S.K.K., Avornyo, S.Y., Ofori-Danson, P.K., Henneh, S. and Afranewaa, N.A.B. (2021). Assessing the population characteristics of Carangids in the Coast of Ghana, West Africa. Research in Marine Sciences, 6(2): pp. 965-976.
- Asiedu B, Amponsah S.K.K., Failer P, Avornyo SY and Commey AN (2021). Population Dynamics of *Ilisha africana* in Coastal Waters of Ghana. Fish and Aquaculture Journal 12: 100288
- Amponsah S.K.K., Commey NA, Avornyo SY and Afranewaa NAB (2021).

Length–weight relationships of six marine fish species from the coast of Ghana. *Journal of Applied Ichthyology* 00:1–3.

- Amponsah, S. K. K., Asiedu, B., Avornyo, S. Y., Setufe, S. B., and Failler, P. (2021). Growth, Mortality and Exploitation Rates of African Moonfish (*Selene dorsalis*, Gill 1863) Encountered in the Coast of Ghana (West Africa). *European Journal of Biology and Biotechnology*, 2(2), 6-10.
- Amponsah, S.K.K and Amarquaye, N.C. (2021). Species composition, abundance and diversity of beach seine catches at Sakumono landing beach, Ghana. *International Journal of Fauna and Biological Studies*. 8(1): 15-21.
- Amponsah, S.K.K, Amarquaye, N., Alaba Olopade, O., Baset, A. (2020). Length-based population dynamics of Lesser African Threadfin (*Galeoides decadactylus*, Bloch, 1795) from the coastal waters of Ghana. *Journal of Wildlife and Biodiversity*,
- Forson S. and Amponsah S. K. K. (2020). Biological parameters of False scad (*Decapterus rhonchus*) encountered in the coastal waters of Elmina, Ghana. *Research in Agriculture, Livestock and Fisheries*, 7 (3): 507-515.
- Amponsah, S.K.K., Commey, N.A., Asiedu, B. and Fazli, H. (2021). Assessing the stock status of Atlantic bumper, *Chloroscombrus chrysurus*, Linnaeus 1766, from the coastal waters of Ghana. *Int. J. Aquat. Biol.*, 9(4): 248-253

Community Engagements

- Engaging fishermen along the coast of Ghana on the migration and value chain of small pelagic fishery.

Visits

- Pilot Aquaculture Centre, Kumasi
- Yeji Fishing Communities
- Tema, Shama, Apam, Elmina, Ahiwem (all in Ghana) – Small pelagic fishery Project

Name: Ms. Paulina Okpei

Research Collaborations (Local and International)

- Management and Resilience of Small Pelagic Fish Stocks in West Africa (GREPPAO-Project)

Workshops/Conferences/Public Lectures

- Training programme for Professional Development on Examination Policy and Results Management in the University Students Information Systems (USIS) 2021.

Community Engagements

- Engaged with several fish value chain actors in some communities along the four coastal regions in Ghana, to elicit information on the small pelagic fisheries value chain and to examine relationships between actors, quality issues and sanitary conditions in coastal fishing communities (from 25th to 29th October, 2021)

Visits

- Field visits to Shama, Elmina, Apam, Ahwiam, Tema, Keta and Denu, important coastal communities in Ghana from 28th June -2nd July, 2021, 9th -13th August, 2021 and 25th - 29th October, 2021 for the GREPPAO Project.

CENTRE FOR CLIMATE CHANGE AND GENDER STUDIES (3CGS)

Introduction

The Centre for Climate Change and Gender Studies was established in 2016 with the mandate to advance research, teaching, capacity building and policy advocacy on issues of Climate Change and Gender.

Administration of the Centre

The Centre Administration is constituted by the following personnel:

- | | |
|--------------------------------------|---------------------------|
| 1. Prof. Berchie Asiedu | Head |
| 2. Dr. Issah Seidu | Research Fellow |
| 3. Rachel Yeboah Nketiah | Assistant Research Fellow |
| 4. Ama Ntiwaa Antwi-Boasiako Panford | Senior Admin. Assistant |
| 5. Ama Acheampomaa Asiedu | Volunteer |
| 6. Daniel Yobi | Intern |

Staff and Students Statistics

Staff	4
Volunteer	1
Intern	1

Research Collaborations (Local and International)

International

- Partnership with the University of British Columbia UBC), Vancouver, Canada, Faculty of Science on Solving Sustainability Challenges at the Food-Climate-Biodiversity Nexus
- Partnership with the Institute of Oceans and Fisheries, University of British Columbia, Vancouver, Canada
- Partnership with Centre for Transitional Environmental Accountability (CTEA), China on Climate Justice Research
- Prof. Emmanuel Danquah, Prof. Samuel Oppong and Dr. Evans Nkruamah (Department of Wildlife and Range Management, KNUST), Mr. David Kwarteng (Institute of Nature and Environmental Conservation).
- Prof. Nicholas Dulvy (Simon Fraser University, Canada), and David Van Beuningen (Wildlife Conservation Society)
- KIT (Royal Tropical Institute) - Cocoa Target Project II. (August, 2021)
Understanding the circumstances under which Nursery Operations Be Attractive Business Opportunities for Rural Women and Youths in Atwima Mponua District, Ashanti Region, Ghana.

- KIT (Royal Tropical Institute) - Cocoa Target Project I. (February, 2021)
- Planting Materials: Farmers' perception, challenges, opportunities and innovations in Ahafo-Ano South West and East Districts of Ashanti Region of Ghana

Workshops/Conferences/Public Lectures

- Presentation of Science Letter "WTO must ban harmful fisheries subsidies" to the Director-General of World Trade Organization. 5th November, 2021 (Virtual)
- Seidu, I. 2021. Importance of shark fisheries for the livelihoods of coastal communities in Western Ghana. Presented at the Southern African Shark and Ray Symposium. 19- 22 November 2021. Cape Town, South Africa.
- Press Conference on the UNFCCC Conference of the Parties (COP) 26 on Climate Change - November, 2021
- Seidu I. 2021, (Guest speaker): Local Ecological Knowledge as potential tools to fill in the gaps for Ghana shark fisheries. IUCN/SSC Shark Specialist Group Crash Course on the Human Dimensions of Shark Conservation. Presented via ZOOM, July 27- August 5, 2021.
- The Natural Resources Students Association (NARSA) Seminar - August, 2021.
- Seidu I. 2021: Fishing and shark fisheries in Ghana: Preliminary Results. IUCN/SSC Shark Specialist Group Workshop to Assess West African Endemic and near Endemic Shark and Ray species. Presented via ZOOM, 7- 21 July, 2021.
- Asiedu, B. (2021). Alternative Livelihood: A tool for Sustainable Fisheries Management in Ghana. Theme: environmentally sustainable, climate-resilient livelihood opportunities for artisanal fishing communities in Ghana. Mensvic Grand Hotel, East Legon, Accra. 3rd- 5th March, 2020

Proposals

- October 2021: Solving Sustainability Challenges at the Food-Climate-Biodiversity Nexus (Consortium). Amounted requested CAD 2.4 million (Pending)
- October 2021: Saving the Critically Endangered Giant Guitarfishes in Ghana (Funding organization- Conservation Leadership Program Grant). Amounted requested \$15000 (Pending)
- September 2021: Distribution, threats and conservation actions for the rare endemic *Leptopholcus kintampo* in Ghana Funding organization- Mohammed Bin Zayed Species Conservation Fund). Amount requested- \$16000 (Pending)
- June 2021: Climate stressors, population status and conservation of *Chabanaud's Fringe-fingered Lizard (Acanthodactylus boueti)* in

Ghana (Funding organization- Mohammed Bin Zayed Species Conservation Fund). Amount requested \$18000.

- April 2021: Ecology, threats, population status and conservation of the Endangered Endemic *Enteromius subinensis* in the Subin River, Ghana (Funding organization- Rufford Foundation). Amount requested £6000
- Solving Sustainability Challenges at the Food-Climae-Biodiversity Nexus
- Climate Justice Research

Grant and Awards

- Centre for Transitional Environmental Accountability (CTEA) sub-grant of \$5,000

Funding of Research Activities

- Centre for Transitional Environmental Accountability (CTEA) sub-grant of \$5,000

Publications (for the year under review)

Staff of the Centre produced ...10..... refereed journal articles and ...1... book.

- Asiedu, B., Okpei, P., Nunoo, F.K.E. and Failler, P. (2021). A fishery in distress: an analysis of the small pelagic fishery of Ghana. *Marine Policy*, 129, 104500
- Asiedu, B., Amponsah, S.K.K., Failler, P. and Commey, N. A. (2021). Population dynamics of *Ilisha africana* in Coastal Waters of Ghana. *Fisheries & Aquaculture Journal*, Vol. 12 Iss. 1 No: 288 1–7
- Ofori-Danson, P.K., Asiedu, B., Alhassan, E.H., Atsu, D.K. and Amponsah, S.K.K. (2021). Pre-impoundment fish stock assessment of the Black Volta: a contribution to fisheries management of Bui Reservoir in Ghana. *West African Journal of Applied Ecology*, 29(1): 35 – 48
- Anokyewaa, M. A., Amoah, K., Li, Y., Lu, Y., Kuebutornye, F.K.A., Asiedu, B. and Seidu, I. (2021). Prevalence of virulence genes and antibiotic susceptibility of *Bacillus* used in commercial aquaculture probiotics in China. *Aquaculture Reports*, 21, 100784
- Amponsah, S.K.K., Asiedu, B., Avoronyo, S.Y., Setufe, S.B., Afranewaa, B.A.N. and Failler, P. (2021). Growth, Mortality and Exploitation Rates of African Moonfish (*Selene dorsalis*, Gill 1863) encountered in the Coast of Ghana (West Africa). *European Journal of Biology and Biotechnology*, 2(2), 6-10. <https://doi.org/10.24018/ejbio.2021.2.2.154>
- Amponsah, S.K.K., Commey, N. A., Asiedu, B., and Hasan Fazli (2021). Assessing the stock status of Atlantic bumper, *Chloroscombrus chrysurus*, Linnaeus 1766, from the coastal waters of Ghana. *Int. J. Aquat. Biol.*, 9(4): 248-253

- Sumaila, R.U., Skerritt, D., Schuhbauer, A., Villasante, S., Cisneros-Montemayor, A.M., Sinan, H., Burnside, D., Asiedu, B. and 289 additional authors. (2021). Science, 374 (6567), • DOI: 10.1126/science.abm1680
- Seidu, I., Brobbey, L. K., Danquah, E., Oppong, S. K., van Beuningen, D., Seidu, M., & Dulvy, N. K. 2021 (2021). Fishing for survival: importance of shark fisheries for the livelihoods of coastal communities in Western Ghana. Fisheries Research.
- Manu, M., Ashiagbor, G., Seidu, I., Groen, T., Gyimah, T., Toxopeus, B. (2021) (in press) Odonata as bioindicator for monitoring disturbance of Owabi Wetland Sanctuary, Ghana. Aquatic insects.
- Seidu I (2021). Using local ecological knowledge to fill in the knowledge for Ghana shark fisheries. IUCN Shark Specialist Group Shark News.
- Rachel Nketiah (2021). Human Rights and the Gender Dynamics of Climate Change in Ghana: The Legal and Policy Context (Under Review)

Community Engagements

- Science festival
- Research Agenda Team Member for School of Natural Resources
- Academic tutorship for Levels 300 and 400
- Committee member to organize symposium for stakeholders in Natural Resources
- Press Conference on Climate Change
- Public Education on Climate Change
- Review of Scientific Publications in Climate Change, Nature Food, Ocean and Coastal Management

Visits

- Atwima Mponua District, Ashanti Region, Ghana. (August, 2021)
- Ahafo-Ano South West and East Districts of Ashanti Region of Ghana (February, 2021)

Future Plans of the Centre

- Run Short Courses in Climate Change, Gender and its related issues
- Develop courses in climate change and information Technology
- Initiate Annual Academic-Industry Perspectives Roundtable Meeting
- Develop Policy Briefs/ Advisory Notes to Ministries and Agencies

SCHOOL OF AGRICULTURE AND TECHNOLOGY

SCHOOL OF AGRICULTURE AND TECHNOLOGY

Introduction

The School of Agriculture and Technology was established in the 2014/2015 academic year at the Dormaa Ahenkro Campus of UENR. The School of Agriculture and Technology is poised to provide a vibrant and robust leadership to the agricultural industry to meet the increasing demand for food and raw materials for industrial and export purposes. The School seeks to become the leading institution in the provision of hands-on agriculture and its related fields of education. As a result, the programmes offered by the School 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. Additionally, our programmes assist students in developing the core skills in job creation and employment-related experiences that employers value, professional organisations and academic institutions.

Departments and Research Centres/Institutes

Currently, the School has the following Departments/Centre:

- » Department of Agricultural Economics, Agribusiness and Extension
- » Department of Horticulture and Crop Production
- » Department of Animal Production and Health
- » Centre for Agricultural Technology, Research and Production

DEPARTMENT OF AGRICULTURAL ECONOMICS, AGRIBUSINESS AND EXTENSION

The Department offers both undergraduate and postgraduate market-driven programmes in Agribusiness Management. The programmes are B.Sc. Agribusiness, MBA Agribusiness Management and MPhil Agribusiness Management. Our programmes are designed to cover all business, economics and community development disciplines so that students can apply concepts from these disciplines to agribusiness and allied industries. Our programmes aim to train students who wish to undertake managerial-level, agripreneurship, research, agricultural planning, policy, trade, teaching and consultancy careers in food production, processing, agricultural output and input marketing, agricultural finance, supply chain, food and agribusiness allied sectors.

The Department has well-motivated, dynamic and young but experienced and dedicated lecturers who provide excellent theoretical and practical content of courses in agribusiness, applied economics and community development.

Our innovative programmes, distinguished faculty and competitive students place

the Department among one of the best in the provision of agribusiness, applied economics and community development education in the sub-region.

DEPARTMENT OF HORTICULTURE AND CROP PRODUCTION

The Department of Horticulture and Crop Production was established in the 2014/2015 academic year to offer agricultural education to students for future careers as professional crop sciences. The Department offers a 4-year Bachelor of Science undergraduate degree in Agriculture with Horticulture and Crop Production options. The programme's coverage is intended to 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. The Department also runs postgraduate studies (MSc, MPhil and PhD) in Crop Science with specialisation in Entomology, Postharvest technology, Agronomy, and Pathology.

DEPARTMENT OF ANIMAL PRODUCTION AND HEALTH

The Department of Animal Production and Health was established as one of the Agriculture majors' options in the 2014/2015 academic year. The aim is to educate students in becoming well-trained, skilled and critical thinking professionals who can 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 specialisation are Animal nutritional science, Genetics and Breeding and Animal Health.

CENTRE FOR AGRICULTURAL TECHNOLOGY, RESEARCH AND PRODUCTION (CATREP)

The School of Agriculture and Technology (SOAT) of the University of Energy and Natural Resources (UENR) was established in the 2014/15 academic year in Dormaa-Ahenkro. The SOAT seeks to bring a paradigm shift in agricultural teaching, research, and outreach to promote the Ghanaian agricultural sector's performance, modernisation, efficiency, and competitiveness. 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. As a necessary means to achieve hands-on and practical training and promote agricultural technologies and research, the University has set the Centre

for Agriculture Technology, Research and Production (CATReP).

The CATReP will have two main components, thus, the research and business sections. The model centre will incorporate agriculture technology training, dissemination, and consultancy models, which will allow us to leverage our experiences in agriculture to assist farmers, agricultural extension agents, and NGOs implementing different agriculture projects in the country's northern zone. The training and consultancy services under the Agriculture Technology Training and Dissemination Centre will involve students, staff and other critical stakeholders in the agriculture value chain.

Academic Programmes under each Department

Name of Department	Programmes	Head of Department
Agricultural Economics, Agribusiness and Extension	B.Sc. Agribusiness MBA Agribusiness Management MPhil Agribusiness Management	Dr. Tekuni Nakuja
Department of Horticulture and Crop Production	B.Sc. Agriculture (Options in Horticulture and Crop Production) M.Sc., MPhil and PhD Crop Science (Entomology, Pathology, Post-harvest and Agronomy)	Prof. Charles Adarkwah
Department of Animal Production and Health	B.Sc. Agriculture (Animal Production option)	Mr Ernest Dakwa Yeboah

CENTRE

Name of Centre	Staff	Position
Centre for Agricultural Technology, Research and Production	Mr Bernard Quaye	Centre Manager
	Joel Amponsah	Senior Technician Assistant
	Salifu Faisal	Senior Technician Assistant

ADMINISTRATION OF THE SCHOOL

The following personnel constitutes the School Administration:

Dr. Richard Kwasi Bannor
Mr. Ernest Bachela Mbawini
Ms. Joyce Yeboah
Bennet Kwakye
Samuel Asante Boateng
Edith Adasi Ayarkwa

Dean
Faculty Officer
Senior Administrative Assistant
Senior Administrative Assistant
Senior Administrative Assistant
Senior Administrative Assistant

STAFF STATISTICS

S/N	Ranks	Male	Female	Total Number
	Full Professor	1		1
1.	Associate Professors	1	0	1
2.	Senior Lecturers	3	0	3
3.	Lecturers	24	4	28
	Assistant Lecturers	1	2	3
4.	Assistant Research Fellow	1	0	1
6.	Senior Research Assistants/Technicians	5	0	5
7.	Junior Assistant Registrars	2		2
8.	Senior Administrative Assistants.	2	2	4
9.	Grand Total	39	6	48

STUDENTS STATISTICS

Department of Horticulture and Crop Production/Animal Production and Health			
Diploma in Agriculture			
Level	Male	Female	Total
100	29	8	37
200	22	12	34
Sub Total	51	20	71
B.Sc. in Agriculture			
100	54	9	63
200	52	11	63
300	70	8	78
400	89	9	98

Sub Total	265	37	302
Postgraduate			
MSc Crop Science			
Level	Male	Female	Total
1st Year	1	0	1
2nd year	2	0	2
Sub total	3	0	3
MPhil. Crop Science			
1st Year	15	1	16
2nd year	33	2	35
Sub Total	48	3	51
PhD Crop Science	Male	Female	Total
1st Year	4	0	4
2nd year	5	0	5
Sub Total	9	0	9
Department of Agricultural Economics, Agribusiness and Extension			
BSC Agribusiness			
Level	Male	Female	Total
100	68	13	81
200	33	17	50
300	36	11	47
400	29	11	40
Sub Total	166	52	218
Postgraduate			
MBA Agribusiness			
1st Year	3	3	6
2nd year	3	0	3
Sub Total	6	0	6
MPhil Agribusiness			
1st year	21	2	23
2nd Year	21	0	21
Sub Total	42	2	44
Grand Total	590	114	704

Achievements:

1. The Department of Horticulture and Crop Production has won a seedling lab Instrumental Access award (2021) of a 20 footer container worth of laboratory equipment to improve teaching and research in the school
2. The Department of Horticulture and Crop Production was also part of the team for the Fertilizer Response Trials in maize, rice and soya beans in Bono Region of Ghana, a sub-contract awarded to UENR by the International Fertilizer Development Centre (IFDC) under the Fertilizer Research and Responsible Implementation (FERARI) programme
3. Research Team led by Prof. John Kuwornu is part of the Project titled “Bundling Small-Scale Irrigation and Drought Index Insurance to Manage Smallholder Income Risk and Expanding Their Access to Agricultural Credit” funded by USAID through the International Centre for Evaluation and Development (ICED) over the period May 2021 – April 2024.

Research Collaborations (Local and International)

1. Members in the Department of Horticulture and Crop Production have collaboration with two Professors from the Georgina Mace Centre for the Living Planet, Faculty of Natural Sciences, Imperial College London, UK, one collaboration from a scientist at the Department of Chemical and Behavioural Sciences, International Centre for Insect Physiology and Ecology, Nairobi, Kenya and another collaboration with a faculty member at Dep’t of Animal Sciences, Jomo Kenyatta University of Agriculture and Technology, Nairobi, Kenya. These collaborations have produced a paper titled “The nutritional profiles of five important edible insect species from West Africa – an analytical and literature”. The paper has just been accepted for publication with Frontiers Nutrition journal. Members of the Animal Science Department collaborated with faculty in University of Cape Coast and Council for Scientific and Industrial Research,
2. Members in the Departments of Agricultural Economics, Agribusiness and Horticulture and Crop Production collaborated with GIZ ComCashew to develop the curricula HND and BTech on Tree Crop Development and Processing and Cashew Processing as well as the Learning Materials and Assessment Instruments for the same

WORKSHOPS/CONFERENCES/PUBLIC LECTURES

Department of Horticulture and Crop Production

1. 7th April, 2021: Online Webinar on “A discussion on the challenges of predatory journals” hosted by Schoombee Lucia, Scopus, Johannesburg, South Africa.

2. 3rd March, 2021: Online webinar on “Scopus training for UENR SESSION 2” hosted by Moodley Daneshree, Scopus, South Africa.
3. 30th March, 2021: Scientific manuscript writing workshop, organised by Ghana Science Association, via zoom.
4. Cashew Research Engagement Workshop organised by Directorate of Crop Services (DCS)- MOFA on 14-15th October, 2021 - Venue: Anita Hotel Kumasi Regional Joint Sector Review (RJSR) in the agricultural sector, August, 2021, Sunyani (Participant)
5. Workshop on finalisation of learning materials and assessment instruments for curriculum on cashew at advanced levels. Organised by Com Cashew of GIZ. Date: 23th to 27th September, 2021 at Accra.
6. Workshop on validation of unit specifications and development of learning materials for curriculum on cashew at advanced levels. Organised by Com Cashew of GIZ. Date: 27th August to 1st September, 2021 at Aburi.
7. E-lecture on molecular genomics to phonemics and phenotyping for quantitative crop improvement. Organised by JR Biotek Foundation Date: 15th February 2021.
8. African Plant Breeding Association Conference October 25- 29, 2021 at Kigali Rwanda.
9. GAYO (Green Africa Youth Organization) Food Systems Summit 2021: 14th September 2021
10. Postgraduate Seminar (Presentation of Research Proposal): 18th September 2021
11. Digital Earth Africa – UENR Workshop: 7th October 2021
12. Training on Course manuals for Colleges of Education Tutors in Ghana affiliated to Kwame Nkrumah University of Science and Technology (KNUST). 4th October, 2021.
13. African Virology Congress (AVC); Advances in Virology, which was held from 3rd - 4th November, 2021 at Ange Hill Hotel, East Legon, Accra, Ghana.
14. 3rd International Plant Genetics & Genomics Symposium – IPGG (Participant). October 31 – November 3, 2021.
15. G2P-Sol Advanced Training School II Virtual Event (Participant). Breeding Solanaceae Fruit: Eggplant, Pepper and Tomato held on October 11-13, 2021.
16. Accelerating Genetic Gains Webinar Series: Early Career Maize Breeding Online Course (Participant) September 3 - September 26, 2021.
17. Inaugural Meeting of the Africa Community of Practice on Forgotten and Underutilised Food Commodities (ACoPFF) 1 – Webinar (Member) August 16, 2021
18. Quality assurance for grants and research proposal (Participant). Institute for Interdisciplinary Research (IIR), University for Development Studies – Tamale: 24th June, 2021 – Webinar
19. e-Lecture: JR Biotek Foundation. Introduction to Molecular Biology

- (Participant) | Monday, 22nd March, 2021
20. Taylor & Francis: Peer Review Excellence: How to Become a Peer Reviewer (Participant). 24th September 24th, 2021 – Webinar
 21. Taylor & Francis: How to Publish Scholarly Books in Science and Technology. (Participant) 22nd September, 2021.
 22. Quality assurance for grants and research proposal (Participant). Institute for Interdisciplinary Research (IIR), University for Development Studies – Tamale: 24th June, 2021 – Webinar
 23. The Chicago Council on Global Affairs. “2021 Global Food Security Symposium Changing the Game for Food Systems Innovation.” (Participant) 11th May, 2021 - Webinar

DEPARTMENT OF AGRICULTURAL ECONOMICS, AGRIBUSINESS AND EXTENSION

1. Participant: 4th Annual Conference of Ghana Association of Agricultural Economists (GAEE), University for Development Studies (UDS), August 4-7, 2021.
2. International Association of Agricultural Economists Conference, August 17-31, 2021, Virtual (No. 314946).
3. Training in Ghana Harmonized Competency-based Curriculum Development in October, 2020.
4. Workshop on finalisation of learning materials and assessment instruments for curriculum on cashew at advanced levels. Organised by Com Cashew of GIZ. Date: 23th to 27th September, 2021 at Accra.
5. Workshop on validation of unit specifications and development of learning materials for curriculum on cashew at advanced levels. Organised by Com Cashew of GIZ. Date: 27th August to 1st September, 2021 at Aburi.
6. All-In Capacity Building Workshop Valley View University, Accra, Ghana

Proposals

The Department of Animal Production and Health is engaged in the under listed proposals

1. The use of agro-industrial by-products in reducing the cost of swine and poultry feed

ORGANISATION	LAST NAME	FIRST NAME	CURRENT POSITION	FIELD OF RESEARCH	CONTRIBUTION TO THE PROJECT
University of Energy and Natural Resources (UENR)	Hagan	Bernard	Lecturer	Animal breeder/ Statistician	Principal Investigator
UENR	Asiedu	Peter	Lecturer	Swine nutrition	Technical lead
UENR	Yeboah	Ernest	Lecturer	Animal nutrition	Monogastric nutritionist
UENR	Asomah	Christian	Lecturer	Poultry production	Poultry specialist
Innovation Height Limited	Adu	Emmanuel	Chief Research Scientist	Animal nutrition and reproduction physiologist	Reproduction specialist
CSIR-Animal Research Institute	Osei	Doris	Senior Research Scientist	Animal Physiologist	Physiology expert

2. New product development: The use of hatchery waste meal as replacement for fishmeal in swine diet

ORGANISATION	LAST NAME	FIRST NAME	CURRENT POSITION	FIELD OF RESEARCH	CONTRIBUTION TO THE PROJECT
University of Energy and Natural Resources (UENR)	Asiedu	Peter	Lecturer	Swine Nutrition	Principal Investigator
UENR	Hagan	Bernard	Lecturer	Animal breeder/ Statistician	Technical lead
UENR	Yeboah	Ernest	Lecturer	Animal nutrition	Monogastric Nutritionist
Innovation Height Limited	Adu	Emmanuel	Chief Research Scientist	Animal nutrition and reproduction physiologist	Reproduction specialist
CSIR-Animal Research Institute	Adu-Aboagye	Gabriel	Research Scientist	Poultry nutritionist	Hatchery specialist
CSIR-Animal Research Institute	Osei	Doris	Senior Research Scientist	Animal Physiologist	Physiology expert

3. New Product development: reduction of human effort in livestock (poultry) aged litter removal

ORGANISATION	LAST NAME	FIRST NAME	CURRENT POSITION	FIELD OF RESEARCH	CONTRIBUTION TO THE PROJECT
University of Energy and Natural Resources (UENR)	Yeboah	Ernest	Lecturer	Animal Nutritionist/Swine Production Expert	Principal Investigator
UENR	Asumah	Christian	Lecturer	Animal Breeder/Poultry Production Expert	Technical lead
UENR	Hagan	Bernard	Lecturer	Animal breeder/Statistician	Animal Breeder
UENR	Asiedu	Peter	Lecturer	Animal Nutritionist	Swine specialist
UENR – Agric. Engineering	Akolgo	Gilbert	Lecturer	Agriculture Engineer	Engineer
CSIR-Animal Research Institute	Osei	Doris	Senior Research Scientist	Animal Physiologist	Physiology expert

Grant and Awards

1. Dr. Jacob Paarechuga Anankware is a principal scientist in a DANIDA funded project valued at US\$1.89 million.
2. ‘Bundling Small-Scale Irrigation and Drought Index Insurance to Manage Smallholder Income Risk and Expanding Their Access to Agricultural Credi’ funded by USAID through the International Centre for Evaluation and Development (ICED) over the period May 2021 – April 2024.

FUNDING OF RESEARCH ACTIVITIES

Department of Horticulture and Crop Production

Fertiliser Response Trials in maize, rice and soya beans in Bono Region of Ghana, a sub-contract awarded to UENR by the International Fertilizer Development Centre (IFDC) under the Fertilizer Research and Responsible Implementation (FERARI) programme.

PUBLICATIONS FOR YEAR UNDER REVIEW

Department of Horticulture and Crop Production

Prof. Charles Adarkwah

Research Interest

Integrated pest management and biological control of arthropod pests. Specifically, the 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 optimise pest management strategies.

Publications

1. Tetteh, O. N. A., Huyskens-Keil, S., Amaglo, N. K., Amagloh, F. K., Oduro, I. N., Adarkwah, C., ... & Foerster, N. (2021). Effect of terroir on the glucosinolate content of *Moringa oleifera* grown in three agro-ecological zones of Ghana. *Journal of Applied Botany and Food Quality*, 94, 82-91.
2. Adarkwah, C., Adjei, R. R., Anankware, J. P., Obeng-Ofori, D., Ulrich, C., & Schöller, M. (2021). Bio-insecticidal effectiveness of three formulations of diatomaceous earths against *Callosobruchus maculatus* (F.) (Coleoptera: Chrysomelidae) in stored cowpea", *Journal of Plant Diseases and Protection*. <https://doi.org/10.1007/s41348-021-00443-0>

Dr James Owusu-Kwarteng

Research Interest

Food Safety; Food and Industrial Microbiology; Food Fermentation; Probiotics, Prebiotics and Health; Agri-food Processing Value Chains; Food Processing Technology; Quality Assurance.

1. Sawadogo-Lingani, H., Owusu-Kwarteng, J., Glover, R.L.K., Diawara, B., Jakobsen, M., Jespersen, L. (2021). Sustainable production of African traditional beers with focus on dolo, a West African sorghum-based alcoholic beverage. *Frontiers in Sustainable Food Systems*, 5:672410
2. Motey, G.A., Owusu-Kwarteng, J., Obiri-Danso, K., Ofori, L.A., Jespersen, L. (2021). In vitro properties of potential probiotic lactic acid bacteria originating from Ghanaian indigenous fermented milk products. *World Journal of Microbiology and Biotechnology*, 37 (52), 1-13.
3. Sarpong, F., Setorglo, J., Owusu-Kwarteng, J., Amaglo, N.K., Amenorfe, L. (2021). Guar gum and sodium chloride coating delays chlorophyll degradation in okra during storage at 25°C. *International Journal of Vegetable Science*, 27 (2), 198-208

4. Dufailu, O.A., Yaqub, M.O., Owusu-Kwarteng, J., Addy, F. (2021). Prevalence and characteristics of *Listeria* species from selected African countries. *Tropical Diseases, Travel Medicine and Vaccines*, 7 (26), doi.org/10.1186/s40794-021-00151-5.

Dr. Samuel Kwesi Asomaning

Research Interest

Broadly varied research interests in the area of soil science. Specifically, my research interests are centered on soil fertility management and plant nutrition and soil chemistry, with special interest in soil phosphorus management, soil phosphorus fractionation and soil phosphorus sorption studies.

Dr Jacob P. Anankware

Research Interest

Entomology, Entomophagy, IPM and Stored product entomology He focuses on insect rearing for food, feed and nutrition.

Publications

1. Asomah S., Anankware, J. P., Adjei, R. R. (2021): Impact of organic and inorganic fertilisers on the growth and yield of cabbage in Ghana. *International Journal of Horticultural Science*, 27, 46-49. <https://doi.org/10.31421/ijhs/27/2021/8923>
2. Adarkwah, C., Adjei, R. R., Anankware, J. P., Obeng-Ofori, D., Ulrich, C., & Schöller, M. (2021). Bio-insecticidal effectiveness of three formulations of diatomaceous earths against *Callosobruchus maculatus* (F.) (Coleoptera: Chrysomelidae) in stored cowpea", *Journal of Plant Diseases and Protection*. <https://doi.org/10.1007/s41348-021-00443-0>

Dr. Patrick Mawuenyegan Norshie

Research Interest

Plant Pathology, Nematology, Integrated Crop Pest and Disease Management, Environmental Profiling of Crop Protection Compounds

Publications

1. Muntala, A., Gyasi, S. K., Norshie, P. M., Larbi-Koranteng, S., Ackah, F. K., Ntiamoah, D. A., & Mohamed, M. A. (2021). Diseases and Insect Pests associated with Cashew (*Anacardium occidentale* L.) Orchards in Ghana. *European Journal of Agriculture and Food Sciences*, 3(5), 23-32.

2. Santo, K. G., Norshie, P. M., Muntala, A., & Afreh, D. N. (2021). Performance of Rain-Fed Peanut under Manual Weeding and Different Plant Densities in Ghana. *Researchjournali's Journal of Agriculture*, Vol. 8 | No. 9.
3. Santo, K. G., Afreh, D. N., Norshie, P. M., & Muntala, A. (2021). Growth and Yield Traits of Two Improved Cassava (*Manihot esculenta* Crantz) Cultivars under Poultry Manure and NPK Fertilizers. *Scholars Journal of Agriculture and Veterinary Sciences*, DOI: 10.36347/sjavs.2021.v08i02.004.

Dr Abdul-Aziz Khalid

Research Interest

Soil Physics/hydrology , soil physical processes, measurement of soil organic carbon, water entry and retention, nutrient uptake of plants, soil and water conservation, soil structure and compaction, conservation tillage and climate change

Dr Francisca Abah Ansah

Research Interest

Mycotoxin and pathogen control; crop postharvest value chains and nutrition; mobile and scanning technologies for biosecurity, food quality and chemical residue analysis; organic and indigenous produce; packaging and shelf life studies;

Publications

1. Keteku-Atiemo, M. A., Bordoh, P. K. & Ansah, F. A. (2021). Assessment of Postharvest Losses of Tomato at the Market Level in the Dormaa Municipality. *Postharvest Forum, International Journal of Postharvest and Food security Research*. In press
2. Ansah, F.A, Musah, K., Bordoh, P.K. & Obeng-Ofori, D. (2021). Variation in harvest hour affects major biochemical attributes of tomato (*Solanum lycopersicum* L)'. *International Journal of Postharvest Technology and Innovation*. In press.

Dr. Paa Kwesi Bordoh

Research Interest

Crop Quality and edible coating, Controlled and modified atmosphere packaging of fresh produce, Postharvest management of fresh produce, Storage and processing of Agric. produce, LAMP technique for early detection of postharvest diseases.

Publications

1. Keteku-Atiemo, M. A., Bordoh, P. K. & Ansah, F. A. (2021). Assessment of Postharvest Losses of Tomato at the Market Level in the Dormaa Municipality. Postharvest Forum, International Journal of Postharvest and Food security Research. In press
2. Ansah, F.A, Musah, K., Bordoh, P.K. & Obeng-Ofori, D. (2021). Variation in harvest hour affects major biochemical attributes of tomato (*Solanum lycopersicum* L)'. International Journal of Postharvest Technology and Innovation. In press.

Dr. Abdulai Muntala

Research Interest

Molecular characterisation, identification and detection of fungi, bacteria and viruses using both conventional and real-time PCR, Pulsed-Field Gel Electrophoresis to determine diversity among plant pathogens, Assessment of Incidence and Severity of plant pathogens, Pathogenicity assessment of plant pathogens.

Publications

1. Muntala, A., Gyasi, S. K., Norshie, P. M., Larbi-Koranteng, S., Ackah, F. K., Ntiamoah, D. A., & Mohamed, M. A. (2021). Diseases and Insect Pests associated with Cashew (*Anacardium occidentale* L.) Orchards in Ghana. *European Journal of Agriculture and Food Sciences*, 3(5), 23-32.
2. Santo, K. G., Norshie, P. M., Muntala, A., & Afreh, D. N. (2021). Performance of Rain-Fed Peanut under Manual Weeding And Different Plant Densities In Ghana. *Researchjournali's Journal of Agriculture*, Vol. 8 | No. 9.
3. Larbi-Koranteng, S., Awuah, R. T., Kankam, F., Muntala, A., Quain, M. D., Nyadanu, D., & Yükselbaba, U. (2021). Morphological, biochemical and molecular identification of rhizobacteria isolates with potential for biocontrol of fungal plant pathogens. *Archives of Phytopathology and Plant Protection*, 1-14.
4. Santo, K. G., Afreh, D. N., Norshie, P. M., & Muntala, A. (2021). Growth and Yield Traits of Two Improved Cassava (*Manihot esculenta* Crantz) Cultivars under Poultry Manure and NPK Fertilizers. *Scholars Journal of Agriculture and Veterinary Sciences*, DOI: 10.36347/sjavs.2021.v08i02.004.

Dr. Daniel Ntiamoah Afreh

Research Interest

Soil fertility management, Conservation Agriculture, Sustainably increasing crop productivity through appropriate technology and management, Appropriate

cropping systems that can ensure food security with less GHG emission, maintaining a healthy crop environment through Climate-Smart Agriculture.

Publications

1. Santo, K. G., Norshie, P. M., Muntala, A., & Afreh, D. N. (2021). Performance of Rain-Fed Peanut under Manual Weeding and Different Plant Densities In Ghana. Research journal's Journal of Agriculture, Vol. 8 | No. 9.
2. Santo, K. G., Afreh, D. N., Norshie, P. M., & Muntala, A. (2021). Growth and Yield Traits of Two Improved Cassava (*Manihot esculenta* Crantz) Cultivars under Poultry Manure and NPK Fertilizers. Scholars Journal of Agriculture and Veterinary Sciences, DOI: 10.36347/sjavs.2021.v08i02.004.
3. Muntala, A., Gyasi, S. K., Norshie, P. M., Larbi-Koranteng, S., Ackah, F. K., Afreh, D. N., & Mohamed, M. A. (2021). Diseases and Insect Pests associated with Cashew (*Anacardium occidentale* L.) Orchards in Ghana. European Journal of Agriculture and Food Sciences, 3(5), 23-32.

Dr. Kwadwo Gyasi Santo

Research Interest

Sustainable crop production for enhanced food security, Impact of cocoa-cashew intercropping on crop yield, Response of hybrid maize to fertiliser briquettes under rain-fed and irrigated conditions, Growth and yield response of soybeans to organo-mineral fertilisers, Response of groundnut to phosphate fertilisers, Response of carrot to different rates of poultry manure, Weed management and spatial arrangement in groundnut production, Maize-cowpea intercropping in managing fall armyworm, Push-pull approach in managing fall armyworm, Controlling nematodes with citronella in carrot production

Publications

1. Gyasi Santo, K., Norshie, P.M., Muntala, A., Afreh, D.N. (2021). Performance of rain-fed peanut under manual weeding and different plant densities in Ghana. Researchjournal's Journal of Agriculture, 8(9):1-10.
2. Addo, I., Gyasi Santo, K., Khalid, A.A. and Ackah, E. (2021). Effects of different soil amendments and age of transplant on the post-harvest quality and shelf life of sweet pepper (*Capsicum annum*) fruits. Bulletin of the National Research Centre, 45(170):1- 8. DOI: <https://doi.org/10.1186/s42269-021-00630-x>
3. Muntala, A., Gyasi Santo, K., Mawuenyegan Norshie, P., Larbi-Koranteng, S., Kwekucher Ackah, F., Afreh Ntiamoah, D. and Atef Mohamed, M. (2021). Diseases and Insect Pests associated with Cashew (*Anacardium occidentale* L.) Orchards in Ghana. European Journal of Agriculture and Food Sciences,

3(5):23-33. DOI: <http://dx.doi.org/372.24018/ejfood.2021.3.5.357>

4. Mpanga, I.K., Adjei, E., Dapaah, H.K., Gyasi Santo, K. (2021). Poultry Manure Induced Garden Eggs Yield and Soil Fertility in Tropical and Semi-Arid Sandy-Loam Soils. Nitrogen, 2:321-331. <https://doi.org/10.3390/nitrogen2030022>.
5. Gyasi Santo, K., Afreh, D.N., Norshie, P.M., Muntala, A. (2021). Growth and yield traits of two improved cassava (*Manihot esculenta* Crantz) cultivars under poultry manure and NPK fertilisers. Scholars Journal of Agriculture and Veterinary Sciences, 8(2):20-32.

Dr. Esther Fobi Donkor

Research Interest

Improving the yield and nutritional contents of underutilised and neglected crops and Africa through conventional and molecular breeding for climate change challenges; Improving the yield and nutritional content of field crops using molecular tools and conventional breeding; Breeding for resistance to biotic and abiotic stress conditions; Multi-location evaluation of field crops for stability and resilience to climate change challenges.

Publications

1. Donkor, E. F., Nyadanu, D., Akromah, R. & Osei, K. (2021) Genetic control and assessment of breeding value of selected exotic and local genotypes of taro (*Colocasia esculenta*) for yield and yield components. Euphytica 217:92. <https://doi.org/10.1007/s10681-021-02828-6>
2. Donkor, E. F., Nyadanu, D. & Dapaah H.K. (2021) Evaluation of tigernut accessions in Ghana for proximate and mineral composition. African Crop Science Journal 29(1), 31-44. [dx.doi.org/10.4314/acsj.2021.v29i1.3](https://doi.org/10.4314/acsj.2021.v29i1.3)
3. Oduro, E., Donkor, E. F. & Ackah, E. (2021). Causes and suggested remedies to taro (*Colocasia esculenta*) endangerment in four regions of Ghana. Bulletin of the National Research Centre 45:129. doi.org/10.1186/s42269-021-00587-x
4. Donkor, E. F., Adjei, R. R., Boadu, S. E., Boateng A. S., & Durowaa, O. A. (2021). Genetic variability, heritability and path analyses of yield and yield related traits of newly developed rice (*Oryza sativa* L.) genotypes in lowland ecology in Ghana. Journal of Innovative Agriculture, 8(1):16-20. [http://doi.org/10.37446/jinagri/8.1.2021.16-20](https://doi.org/10.37446/jinagri/8.1.2021.16-20)

Dr. Kwabena Atakora

Research Interest

Yield stability methods for field crops and Climate change effects on agriculture;

Integrated Nutrient Management for horticultural crops; Physiology, plant soil relations and Multi-locational trials of crops.

Mr. Joseph Nyarko

Research Interest

Current focus is on virus diseases of pineapple; Virus diseases of horticultural, vegetable and food crops; Virus characterization, diagnostics, plant-virus-vector interactions, development of integrated crop improvement strategies; Climate change, epidemiology of viral and fungal diseases and food security.

Mr. Remember Roger Adjei

Research Interest

Plant Breeding, Plant Genetics, Underutilised Crops, Biotechnology, Integrated Pest Management and Biological Control of Stored Product Insect Pests.

Publications

1. Asomah S., Anankware, J. P., Adjei, R. R. (2021): Impact of organic and inorganic fertilisers on the growth and yield of cabbage in Ghana. *International Journal of Horticultural Science* 27: 46-49. <https://doi.org/10.31421/ijhs/27/2021/8923>
2. Adarkwah, C., Adjei, R. R., Anankware, J. P., Obeng-Ofori, D., Ulrich, C., & Schöller, M. (2021). Bio-insecticidal effectiveness of three formulations of diatomaceous earths against *Callosobruchus maculatus* (F.) (Coleoptera: Chrysomelidae) in stored cowpea", *Journal of Plant Diseases and Protection*. <https://doi.org/10.1007/s41348-021-00443-0>
3. Donkor, E. F., Adjei, R. R., Boadu, S. E., Boateng A. S., & Durowaa, O. A. (2021). Genetic variability, heritability and path analyses of yield and yield related traits of newly developed rice (*Oryza sativa* L.) genotypes in lowland ecology in Ghana. *Journal of Innovative Agriculture*, 8(1):16-20. <http://doi.org/10.37446/jinagri/8.1.2021.16-20>

Mr. Shadrack Asomah

Research Interest

Entomophagy, Storage Insect Pests Control and Integrated Pest Management (IPM)

Publications

1. Asomah, S., Anankware, J. P., Adjei, R. R. (2021): Impact of organic and inorganic fertilisers on the growth and yield of cabbage in Ghana. *International Journal of Horticultural Science* 27: 46-49. DOI: <https://doi.org/10.31421/ijhs/27/2021/8923>

org/10.31421/ijhs/27/2021/8923.

2. Baffour E. K., Debrah S. K., Maaleku B. K., Asomah S., & Adjei P. Y. (2021): Impact of different packaging materials on the fruit quality of tomatoes from Akumadan (Offinso North District, Ashanti region of Ghana). *Agricultural Science Research Journal* 11(6):147-153. DOI: 10.5281/zenodo.5085910.svg

DEPARTMENT OF AGRICULTURAL ECONOMICS, AGRIBUSINESS AND EXTENSION

PROF. JOHN K.M. KUWORNU

RESEARCH INTERESTS

Agribusiness marketing, Marketing channels, Agribusiness management, Value chain analysis, Agricultural Finance, Climate change economics, Development studies and Development economics.

RESREARCH PUBLICATION

1. Bannor, R.K., Oppong-Kyeremeh, H. Kuwornu, J.K.M. (2021). Examining the Link between the Theory of Planned Behavior and Bushmeat Consumption in Ghana. *Journal of Sustainable Forestry*, 1-23.
2. Ho, T. D., Kuwornu, J. K., Tsusaka, T. W., Nguyen, L. T., & Datta, A. (2021). An assessment of the smallholder rice farming households' vulnerability to climate change and variability in the Mekong delta region of Vietnam. *Local Environment*, 1-19.
3. Apipoonyanon, C., Szabo, S., Tsusaka, T. W., Leeson, K., Gunawan, E., & Kuwornu, J. K. (2021). Socio-economic and environmental barriers to increased agricultural production: New evidence from central Thailand. *Outlook on Agriculture*, 50(2), 178-187.
4. Roy, D., Datta, A., Kuwornu, J. K., & Zulfiqar, F. (2021). Comparing farmers' perceptions of climate change with meteorological trends and examining farm adaptation measures in hazard-prone districts of northwest Bangladesh. *Environment, Development and Sustainability*, 23(6), 8699-8721.
5. Zakaria, A., Alhassan, S. I., Kuwornu, J. K., & Azumah, S. B. (2021). Beyond Participation: The Effect of Fertilizer Subsidy on the Adoption of Certified Seeds Among Rice Farmers in Northern Ghana. *The European Journal of Development Research*, 33(3), 684-709.
6. Yaseen, M., Ahmad, M. M., Soni, P., Kuwornu, J. K., & Saqib, S. E. (2021). Factors influencing farmers' utilisation of marketing information sources: some empirical evidence from Pakistan. *Development in Practice*, 1-13.
7. Alhassan, S. I., Shaibu, M. T., Kuwornu, J. K., Damba, O. T., & Amikuzuno, J. (2021). The nexus of land grabbing and livelihood of farming households

- in Ghana. *Environment, Development and Sustainability*, 23(3), 3289-3317.
8. Ho, T. D., Kuwornu, J. K., & Tsusaka, T. W. (2021). Factors Influencing Smallholder Rice Farmers' Vulnerability to Climate Change and Variability in the Mekong Delta Region of Vietnam. *The European Journal of Development Research*, 1-31.
 9. Martey, E., & Kuwornu, J. K. (2021). Perceptions of Climate Variability and Soil Fertility Management Choices Among Smallholder Farmers in Northern Ghana. *Ecological Economics*, 180, 106870.
 10. Ngandee, S., Taparugssanagorn, A., Anutariya, C., & Kuwornu, J. K. (2021). Assessment of rice yield prediction models based on big data analytics for better supply chain decision-making in Thailand. *International Journal of Value Chain Management*, 12(3), 221-240.
 11. Bello, S. D., Salin, K. R., & Kuwornu, J. K. (2021). Willingness to adopt aquaculture as an alternative livelihood option-a case study of the fishers and livestock farmers of Adamawa State, Nigeria. *International Journal of Value Chain Management*, 12(1), 28-44.

DR. RICHARD KWASI BANNOR

RESEARCH INTERESTS

E-Commerce, Agricultural and Digital Marketing, Supply and Value Chains, Consumer Studies and Agroh uman Resource Management.

RESREARCH PUBLICATION

1. Badu, R., Teye, M., Bannor, R.K. and Fuseini, A (2021). Meat consumers and Islamic scholars' understanding of humane slaughter, and effects of pre-slaughter stunning on meat purchasing decisions in Ghana. *Journal of Islamic Marketing*, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/JIMA-02-2021-0041>
2. Bannor, R.K., Oppong-Kyeremeh, H., Kuwornu, J.K.M. (2021). Examining the link between The Theory of Planned Behaviour and bushmeat consumption across the three ecological zones of Ghana. *Journal of Sustainable Forestry*, doi.org/10.1080/10549811.2021.1944881
3. Mensah, P.E., Bannor, R.K. Oppong-Kyeremeh, H. and Chaa, S.K. (2021). An assessment of the postharvest losses to support innovation in the egg value chain in Ghana. *African Journal of Science, Technology, Innovation and Development*, 1-13. <https://doi.org/10.1080/20421338.2021.1920679>
4. Bannor, R.K and Abele, S., C. (2021). Consumer characteristics and incentives to buy labelled regional agricultural products. *World Journal of Entrepreneurship, Management and Sustainable Development*, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/WJEMSD-12-2020-0173>

5. Bannor, R. K., Ibrahim, N., & Amrago, E. C. (2021). Examining the Influence of Commercialisation and Postharvest Losses on the Choice of Marketing Outlet among Poultry Farmers. *Scientific African*, e00792. doi.org/10.1016/j.sciaf.2021.e00792
6. Bannor R.K., Mohit, S and Oppong-Kyeremeh, H. (2021). Extent of urban agriculture and food security: evidence from Ghana and India. *International Journal of Social Economics*, 48(3), 437-455. <https://doi.org/10.1108/IJSE-08-2020-0519>
7. Bannor, R. K., Ros-Tonen, M. A., Mensah, P. O., Derkyi, M., & Nassah, V. F. (2021). Entrepreneurial behaviour among non-timber forest product-growing farmers in Ghana: An analysis in support of a reforestation policy. *Forest Policy and Economics*, 122, 102331.
8. Oppong-Kyeremeh, H., & Bannor, R. K. (2021). Fruits and Vegetables Consumption Behaviour: A Case Study of Rural and Urban Households in the Techiman Municipality, Ghana. *Agricultural Research*, 10(2), 334-346.

HELENA OPPONG-KYEREMEH

RESEARCH INTERESTS

Value Chain Analysis, Marketing of Agricultural Produce, Food Security, Gender Issues in Agribusiness, Poverty and Consumer Studies

RESREARCH PUBLICATION

1. Bannor, R. K., Oppong-Kyeremeh, H. & K. M. Kuwornu, J. (2021). Examining the Link between the Theory of Planned Behavior and Bushmeat Consumption in Ghana. *Journal of Sustainable Forestry*, 1-23. doi.org/10.1080/10549811.2021.1944881
2. Mensah, E. P., Bannor, R. K., Oppong-Kyeremeh, H. & Kyire, S. K. C. (2021). An assessment of postharvest losses to support innovation in the egg value chain in Ghana. *African Journal of Science, Technology, Innovation and Development*, 1-13. <https://doi.org/10.1080/20421338.2021.1920679>
3. Oppong-Kyeremeh, H. & Bannor, R. K. (2021). Fruits and Vegetables Consumption Behaviour: A Case Study of Rural and Urban Households in the Techiman Municipality, Ghana. *Agricultural Research*, 10 (2), 334-346.
4. Bannor, R. K., Sharma, M. & Oppong-Kyeremeh, H. (2021). Extent of urban agriculture and food security: evidence from Ghana and India. *International Journal of Social Economics*, 48(3), 437-455.

DR TEKUNI NAKUJA

RESEARCH INTEREST/ACTIVITIES

International Trade, Food security and Agricultural Policy

RESREARCH PUBLICATION:

1. Kyere, G.H., Nakuja, T., Anang, A.S., Mensah, N.O. (2021). Robustness of food security and policy trust on smallholder participation in Ghana's Planting for Food and Jobs programme. *African Journal of Agricultural Research* (accepted paper)
2. Degboe, E.F., Mensah, N.O., Asare, J.K., Nakuja, T, Tutu, F.O. (2021). Assessing risk perception and determinants of branding as a risk mitigation tool among rice farmers in Ghana. *Global Journal of Agricultural Research*, 9(4): 1-24.
3. Mensah, N. O., Asare, J. K., Amrago, E. C., Anang, S. A. and Nakuja, T. (2021). Prospects, determinants and challenges of implementing food banking: evidence from Ashanti Region of Ghana, *World Journal of Science, Technology and Sustainable Development*, DOI 10.1108/WJSTSD-01-2021-0009.
4. Anang, S. A., Nakuja T., and Sarpong, A. (2021). Willingness of cocoa farmers to participate in crop insurance in the Dormaa Municipality of the Bono region, Ghana, *Journal of Development and Agricultural Economics*, 13(1): 45-55.
5. Zoogah, A.T., Nakuja, T. (2020). Modernising extension service to improve rice productivity: Lessons from Ghana's Planting for Food and Jobs programme. *Journal of Agricultural Extension and Rural Development*, 12(4): 110 -115. <https://doi.org/10.5897/JAE RD2020.1164>

DR. SAMUEL AFOTEY ANANG

RESEARCH INTERESTS

Agriculture cooperative societies, Livelihoods and Rural Development, Precision Agriculture and food security, Sustainable Agriculture, Gender issues and empowerment and poverty Reduction research.

RESREARCH PUBLICATION

1. Mensah, N. O., Anaman, R., Nyarko- Fordjour, K., Anang, S. A., Donkor, A., Twintoh, J. (2021) 'Creating Sustainable Income through the Cashew Nuts Value Chain (Evidence from Ghana)' *Journal of Nuts*, 12(3): 253-271.
2. Mensah, N. O., Amrago, E.C., Mensah, E.T.D., Asare, J. K., and Anang, S. A. (2021)' Prospects, determinants and profitability of aquaculture insurance

- among fish farmers in the Eastern Region of Ghana' *World Journal of Science, Technology and Sustainable Development*, <https://www.emerald.com/insight/2042-5945.htm>, DOI 10.1108/WJSTSD-02-2021-0018.
3. Mensah, N. O., Asare, J. K., Amrago, E. C., Anang, S. A. and Nakuja, T. (2021) 'Prospects, determinants and challenges of implementing food banking: evidence from Ashanti Region of Ghana', *World Journal of Science, Technology and Sustainable Development*, <https://www.emerald.com/insight/2042-5945.htm>, DOI 10.1108/WJSTSD-01-2021-0009.
 4. Mensah, N. O., Twintoh, J.J, Ernest Christlieb Amrago, E. C., Donkor, A., and Anang, S. A. (2021) 'Forestry insurance preference among tree growers in the Ashanti Region of Ghana: a tobit and multinomial regression approach', *Managerial Finance*, <https://www.emerald.com/insight/0307-4358.htm>, DOI 10.1108/MF-10-2020-0535.
 5. Anang, S. A. and Kabore, A. A. (2021) 'Factors influencing credit access among small-scale Poultry farmers in the Sunyani West District of the Bono region, Ghana', *Journal of Agricultural Extension and Rural Development*, 13(1): 23-33.
 6. Anang, S. A., Nakuja T., and Sarpong, A. (2021) 'Willingness of cocoa farmers to participate in crop insurance in the Dormaa Municipality of the Bono region, Ghana', *Journal of Development and Agricultural Economics*, 13(1): 45-55.
 7. Anang, S.A. and Aryeh-Adjei, A.A. (2020) 'Assessment of livelihood opportunities among farmers in the Shai Osudoku district of the Greater Accra Region, Ghana', *Int. J. Agricultural Resources, Governance and Ecology*, 16(3/4): 171-190.

DR BISMARCK AMFO

RESEARCH INTERESTS/ACTIVITIES

Migration and labour economics, and farm performance/productivity.

Research publications

1. Amfo, B., Abdul-Rahaman, A. and Issaka, Y.B. (2021). Rice planting technologies and farm performance under different production systems in Ghana. *International Journal of Productivity and Performance Management*, Vol. ahead-of-print, No. ahead-of-print. <https://doi.org/10.1108/IJPPM-03-2021-0166>
2. Amfo, B., Aidoo, R. and Osei Mensah, J. (2021). Food coping strategies among migrant labourers on cocoa farms in southern Ghana. *Food Security*, 13 (2021), 875-894. <https://doi.org/10.1007/s12571-021-01186-4>
3. Amfo, B., Osei Mensah, J., Ali, E.B., Dagunga, G., Etuah, S. and Aidoo, R. (2021). Rice farm income diversification in Ghana and implications on household consumption expenditure. *International Journal of Social*

- Economics, 48(10): 1423-1442. <https://doi.org/10.1108/IJSE-04-2021-0207>
4. Amfo, B. and Ali, E.B. (2021). Beyond adoption: the interaction between organic and inorganic fertiliser application, and vegetable productivity in Ghana. *Renewable Agriculture and Food Systems*, 36(6): 605-621. <https://doi.org/10.1017/S1742170521000235>
 5. Amfo, B., Ali, E.B. and Atinga, D. (2021). Climate change, soil water conservation, and productivity: evidence from cocoa farmers in Ghana. *Agricultural Systems*, 191, (2021): 103172. <https://doi.org/10.1016/j.agsy.2021.103172>
 6. Ali, E.B., Anufriev, V.P. and Amfo, B. (2021). Green economy implementation in Ghana as a road map for a sustainable development drive: a review. *Scientific African* 12(2021): e00756. <https://doi.org/10.1016/j.sciaf.2021.e00756>
 7. Ali, E.B. and Amfo, B. (2021). Comparing the values of economic, ecological and population indicators in high- and low-income economies. *Ekonomika regiona [Economy of Region]* 17(1): 72-85. <https://doi.org/10.17059/ekon.reg.2021-1-6>
 8. Avane, A., Amfo, B., Aidoo, R. and Osei Mensah, J. (2021). Adoption of organic fertiliser for cocoa production in Ghana: perceptions and determinants. *African Journal of Science, Technology, Innovation and Development*. <https://doi.org/10.1080/20421338.2021.1892254>

DR NICHOLAS OPPONG MENSAH

Research Interest/Activities

1. Agricultural tax, food banking, land grabbing, risk management, investments behavior and financial resilience, agricultural supply and value chains and agricultural entrepreneurship

Research publications

1. Oppong Mensah, N., Christlieb Amrago, E. C., Kofi Asare, J., Yeboah, E., & Donkor, A. (2020). Determinants of job satisfaction amongst employees in the poultry sub-sector of Ghana: a test of equity theory. *Applied Studies in Agribusiness and Commerce*, 14(3-4) Retrieved from <https://ojs.lib.unideb.hu/apstract/article/view/9837>
2. Quansah, C., Mensah, N.O. Frimpong, A, and Mensah, R.O. (2020). Effects of Large-Scale Land Acquisition on the Livelihood Outcomes of Smallholder Farmers in the Pru District of Ghana *International Journal of Business and Social Science* Vol. 11 • No. 8 doi:10.30845/ijbss.v11n8p7
3. Nicholas Oppong Mensah; Richmond Anaman; Kingsford Nyarko-Fordjour; Samuel Afotey Anang; Anthony Donkor; Jacqueline Twintoh (2021) "Creating Sustainable Income through the Cashew Nuts Value Chain

- (Evidence from Ghana)" JOURNAL of Nuts Vol.12, Issue 3 Pages 253-271DOI 10.22034/JON.2021.1931764.1115
4. Mensah, N.O., Asare, J.K., Amrago, E.C., Donkor, A., Tutu, F.O. and Ansah, E.O. (2021), "Examining stakeholder's contribution and developing a framework for food banking implementation in Ghana", International Journal of Development Issues, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/IJDI-05-2021-0108>
 5. Mensah, N.O., Asare, J.K., Amrago, E.C., Anang, S.A. and Nakuja, T. (2021), "Prospects, determinants and challenges of implementing food banking: evidence from Ashanti Region of Ghana", World Journal of Science, Technology and Sustainable Development, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/WJSTSD01-2021-000>
 6. Mensah, N.O., Twintoh, J.J., Amrago, E.C., Donkor, A. and Anang, S.A. (2021), "Forestry insurance preference among tree growers in the Ashanti Region of Ghana: a tobit and multi-nomial regression approach", Managerial Finance, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/MF-10-2020-0535>
 7. Mensah, N.O., Amrago, E.C., Mensah, E.T.D., Asare, J.K. and Anang, S.A. (2021), "Prospects, determinants and profitability of aquaculture insurance among fish farmers in the Eastern Region of Ghana", World Journal of Science, Technology and Sustainable Development, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/WJSTSD02-2021-0018>
 8. Edinam F. D., Mensah N.O., Asare J.K. Nakuja, T. and Tutu F.O(2021) "Assessing Risk Perception and Determinants of Branding as a Risk Mitigation too among Rice Producers in Ghana". Global Journal of Agricultural Research Vol.9, No4, pp.1-24, 2021 Print ISSN: 2053-5805(Print), Online ISSN: 2053-5813

MR. ANTHONY DONKOR

Research Interest/Activities

Optimisation Techniques and operations research.

RESREARCH PUBLICATION

1. Oppong Mensah, N., Christlieb Amrago, E. C., Kofi Asare, J., Yeboah, E., & Donkor, A. (2020). Determinants of job satisfaction amongst employees in the poultry sub-sector of Ghana: a test of equity theory. Applied Studies in Agribusiness and Commerce, 14(3-4). Retrieved from <https://ojs.lib.unideb.hu/apstract/article/view/9837>
2. Nicholas Oppong Mensah; Richmond Anaman; Kingsford Nyarko-Fordjour; Samuel Afotey Anang; Anthony Donkor; Jacqueline Twintoh

- (2021) "Creating Sustainable Income through the Cashew Nuts Value Chain (Evidence from Ghana)" JOURNAL of Nuts Vol.12, Issue 3Pages 253-271DOI 10.22034/JON.2021.1931764.1115
3. Mensah, N.O., Asare, J.K., Amrago, E.C., Donkor, A., Tutu, F.O. and Ansah, E.O. (2021), "Examining stakeholder's contribution and developing a framework for food banking implementation in Ghana", International Journal of Development Issues, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/IJDI-05-2021-0108>
 4. Mensah, N.O., Twintoh, J.J., Amrago, E.C., Donkor, A. and Anang, S.A. (2021), "Forestry insurance preference among tree growers in the Ashanti Region of Ghana: a tobit and multi-nomial regression approach", Managerial Finance, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/MF-10-2020-0535>

FRANK OSEI TUTU

Research Interests

Corporate governance, corporate finance, microfinance, taxation

International financial reporting standards

Research Publications

1. Bannor, R.K, Osei Tutu, F, Oppong-Kyeremeh, H and Agyina, D. (2020). Seedling Production and Choice among Cashew Farmers in Ghana ; A Profitability Analysis. World Journal of Entrepreneurship Manangement and Sustainability Development. Vol 16 No 2, 2020 pp 109 – 129
2. Oppong Mensah, N, Osei Tutu, F, Donkor, A, Yeboah, E and Kaanye Dier, R. (2019) Determinants of Credit Access of Cocoa Farmers. Evidence from Bono Region, Ghana Applied Studies in Agribusiness and Commerce Vol 13, pp73-78
3. Oppong Mensah, N, Osei Tutu, F, Donkor, A, Amrago, E. (2020). Perception and Willingness to Contribute Towards Food Banking in the Ashanti Region of Ghana, World Journal of Entrepreneurship Manangement and Sustainability Development. (in progress)
4. Oppong Mensah, N, Osei Tutu, F, Donkor, A, Amrago, E. (2020). Poultry Farmers Willingness to Pay For Agricultural Tax ; Evidence from Bono Region, Ghana. World Journal of Entrepreneurship Manangement and Sustainability Development. (in progress)

DR. DOMINIC BOATENG-GYAMBIBY

Research Interest/Activities

Agricultural Extension Systems , Innovation Communications, Agricultural Insurance, Digital Agriculture, Precision Agriculture and food security, Occupational Health and Safety in the Agriculture

Research Publications

Ankrah, D. A., Kwapong, N. A., Eghan, D., Adarkwah, F., & Boateng-Gyambiby, D. (2021). Agricultural insurance access and acceptability: examining the case of smallholder farmers in Ghana. *Agriculture & Food Security*, 10(1), 1-14. <https://doi.org/10.1186/s40066-021-00292-y>

DR DANIEL AIDOO-MENSAH

Research Interest/Activities

1. NGOs management, financial literacy and savings, enterprise diversification

Publications

Aidoo-Mensah, D.(2020). Factors determining the financial product types and demand in a post disaster situation identified by a pairwise ranking approach: a case study of a fishing community in Hambantota district in Sri Lanka in *Applied Economics and Business*, 2020 4(2) 19-41

DR LESLEY HOPE

Research Interests/Activities

Impact Assessment, Markets, Socioeconomic studies

DR MAANIKUU PATRICK MUOTONO IZIDEEN

Research Interests/Activities

Adoption, climate change, gender, rural financing

DR BOAHEN ATTA OPPONG

Research Interest/Activities

Technical efficiency, Insurance, Poverty, Marketing, Finance

DEPARTMENT OF ANIMAL PRODUCTION AND HEALTH

Mr Christian Asumah

1. Asumah, C., Yeboah, E. D., Inusa, S. O., Hagan, B. A. and Frimpong, Y. O.(2021). Management, Prospects and Constraints Of Quail Farming In The Tamale Metropolis Of Ghana. 1 st Joint GSAP/GASA Conference on the theme “sustainable rearing for food and jobs in the Era of Covid-19: The role of stakeholders in the animal industry” held on 24 th -27 th August, 2021, Tamale. Pp 514-521.
2. Hagan, B.A., Asumah, C., Yeboah, E.D. and Lamptey, V.K. (2021). Modeling The Growth of Four Commercial Broiler Genotypes Reared in the Tropics.1 st Joint GSAP/GASA Conference on the theme “sustainable rearing for food and jobs in the Era of Covid-19: The role of stakeholders in the animal industry” held on 24 th -27 th August, 2021, Tamale. Pp 130-141

Dr Peter Asiedu

1. G.Z. Bumbie, T.N.N Nortey, P. Asiedu, A. Naazie, K.O. Amoah, S.W.A. Rhule, and Z. Tang (2021). Influence of Corn Cobs Inclusion in Pig Diets on Growth Performance and Carcass Characteristics. International Journal of Scientific Engineering and Applied Science, 7 (2) 123-137. www.ijseas.com
2. I-L. B. Amoah, P. Asiedu, C. T. Arthur And I. F. Aboagye* (2020). Effect of Formaldehyde Treatment on Bacteria-Infected Hatching Eggs of Gallus Gallus Domesticus Linnaeus, 1758. Ghana J. Sci. 61 (2), 2020, 82 – 90. <https://www.ajol.info/index.php/gjs/article/view/204486>
3. P. Asiedu. E.K. Adu, F.N.A. Odoi, P. Wallace, A.A. Prah A. A and D.Y. Osei (2021). Quantities of hatchery waste generated, handling and disposal practices of selected hatcheries in the Greater Accra Region of Ghana. Proceedings of the 1st Joint GSAP/GASA conference, University for Development Studies, Tamale, 24th – 27th , August, 2021. Pp 542 to 552.

Dr Bernard Ato Hagan

1. Hagan, B. A., Moro-Mendez, J., & Cue, R. I. (2021). Realised genetic selection differentials in Canadian Ayrshire, Jersey, and Brown Swiss dairy cattle populations. Journal Dairy Science, 104(2): 1951-1966.
2. Hagan, B.A., Asumah, C., Yeboah, E.D. and Lamptey, V.K. (2021). Modeling the growth of four commercial broiler genotypes reared in the tropics. Proceedings of the 1 st Joint Ghana Society and Animal Production and Ghana Animal Science Association Conference; Theme: Sustainable Rearing for Food and Jobs in the Era of COVID-19: The role of stakeholders in the Animal Industry. University for Development, Tamale, Ghana, 24 th – 27 th August, 2021 .Asumah, C., Yeboah, E.D., Inusa .O., Hagan, B.A. and Frimpong,

Y.O. (2021). Management, prospects and constraints of quail farming in the Tamale Metropolis of Ghana. Proceedings of the 1 st Joint Ghana Society and Animal Production and Ghana Animal Science Association Conference; Theme: Sustainable Rearing for Food and Jobs in the Era of COVID- 19: The role of stakeholders in the Animal Industry. University for Development, Tamale, Ghana, 24 th – 27 th August, 2021.

Mr Ernest D. Yeboah

1. Asumah, C., Yeboah, E. D., Inusa, S. O., Hagan, B. A. and Frimpong, Y. O.(2021). Management, Prospects And Constraints Of Quail Farming In The Tamale Metropolis Of Ghana. 1 st Joint GSAP/GASA Conference on the theme “sustainable rearing for food and jobs in the Era of Covid-19: The role of stakeholders in the animal industry” held on 24 th -27 th August, 2021, Tamale. Pp 514-521.
2. Hagan. B.A., Asumah, Yeboah, E.D. and Lamptey, V.K. (2021). Modeling The Growth of Four Commercial Broiler Genotypes Reared in the Tropics.1 st Joint GSAP/GASA Conference on the theme “sustainable rearing for food and jobs in the Era of Covid-19: The role of stakeholders in the animal industry” held on 24 th -27 th August, 2021, Tamale. Pp 130-141

VISITS

Department of Horticulture and Crop Production

Field trip to Vegetable Producers and Exporters Association of Ghana VEPEAG in Accra, Swiss Hall at the Cargo Section of the Kotoka International Airport and Agri Sustainable Ghana Limited in Dahwenya: 21-23rd July 2021

FUTURE PLANS OF THE SCHOOL

1. Establishment of cash crop plantation such as cashew, cocoa and oil palm.
2. Procurement of a tractor for the school farm.
3. Plans to activate the establishment of Centre for Biotechnology
4. Establishment of scion bank at the Centre for Agriculture Technology, Research and production
5. Certified Seed maize production at CATReP
6. Creation of under listed departments
 - Department of Food Science and Technology
 - Department of Agribusiness Management and Consumer Studies
 - Department of Agricultural and Resource Economics
7. Development of new programmes in
 - BSc Food Science
 - BSc/MPhil Agricultural and Resource Economics
 - BSc Horticulture and Landscape Design

- BSc Agricultural Technology
- PhD Agribusiness Management

SCHOOL OF GEOSCIENCES

SCHOOL OF GEOSCIENCES

Introduction

The School of Geosciences is one of the two Schools operating in the Dormaa Ahenkro Campus of the University of Energy and Natural Resources. The School of Geosciences became fully functional on 1st August, 2020, following the appointment of a dean to head the school. The mandate of the School of Geosciences is to promote teaching and research in the core sciences of the earth such as geo-information science, geological science, atmospheric and climate science, geophysics, geochemistry, meteorology, environmental science, as well as hydrogeology and oceanography.

The School of Geosciences is systematically positioning itself to contribute meaningfully towards the realisation of the University mandate of generating, advancing and applying knowledge to solve critical energy and natural resources challenges of society. Products of the School of Geosciences would be equipped with knowledge and skills to effectively conduct environmental scan, locate water, various forms of mineral deposits as well as energy resources and facilitate the sustainable extraction and utilisation of these vital resources for national development. The knowledge generated through environmental assessment would also go a long way to help in understanding and protecting the planet and planetary resources.

Department and Research Centres/Institutes

The School has three (3) departments as follows:

1. Department of Planning and Sustainability

The Department of Planning was established in 2018 as a first step towards the establishment of a School of Built Environment in the University of Energy and Natural Resources. The Department is currently housed in the School of Geoscience in the Dormaa Campus. The Department started with the BSc Planning and Sustainability Studies, and the MSc/MPhil Environmental Planning and Development programmes. The programmes and teaching philosophy emphasize experiential learning and reflexive research where the staff and students find sustainable solutions to real-world environmental, social and economic problems. The faculty members actively conduct research on a range of environmental, social and economic issues from contemporary planning and sustainability perspectives. Combining research and syllabi from the core sciences, social sciences and humanities, the Department seeks to produce graduates who are broadly trained and informed citizens, researchers, managers, and stewards of the environment and resources. The Department of Planning and Sustainability therefore provides inter- and multi-disciplinary education and foster scholarly activities within the department, with other centres and departments within the University, and the

broader planning and sustainability fraternity. The Department aims to be a vital component of the academic and research assets of the University. The Department will run programmes in Planning, Sustainability and Urban Development at the undergraduate and post-graduate levels to address some of the country's most pressing economic, social and ecological challenges.

2. Department of Atmospheric and Climate Science

The vision of the Department is to be recognized as a premier academic location for higher education and innovative research in tropical atmospheric and climate sciences within Africa and beyond. In achieving this status, the Department aims to promote advanced education of highly skilled manpower and conduct cutting-edge interdisciplinary research in atmospheric modelling, land-atmosphere interactions, atmospheric pollution and climate sciences; promote the fundamental understanding and prediction of weather and climate change, and the identification of climate threats that directly affect humans and the terrestrial ecosystem; and develop and apply theories, concepts, methods and tools in climate change studies and research for awareness creation and climate change communication to the public.

3. Department of Geographic Science

The Geographic Science Department was established in the 2018/2019 Academic Year. The Department focuses on key programmes which are of direct and immediate interest to current national developmental goals. The Department aims generally at the provision of specialized training in geospatial and allied academic disciplines in order to help address pressing environmental, energy and developmental challenges. At present, the department has only one academic programme running (i.e., A 2-year Diploma in Geoinformation Science). The Department has developed undergraduate and Postgraduate Programmes in Geoinformation Science, and Geomatics, and are waiting for GTEC approval to run them.

Academic Programmes

1. Department of Planning and Sustainability.
 - I. Undergraduate Programmes
 - a. BSc Planning and Sustainability
 - II. Postgraduate Programmes
 - a. MPhil Environmental Planning and Development
2. Department of Atmospheric and Climate Science
 - I. Undergraduate Programmes
 - a. Climate Change and Sustainable Development
 - II. Postgraduate Programmes

- a. MPhil/MSc Climate Change
- 3. Department of Geographic Science**
 - I. Undergraduate Programmes
 - a. Diploma in Geoinformation Science (Running)
 - b. Diploma in Geomatics (Waiting for Accreditation)
 - c. BSc in Geoinformation Science (Waiting for Accreditation)
 - d. BSc in Geomatics (Waiting for Accreditation)
 - II. Postgraduate Programmes
 - a. MSc/MPhil in Geoinformation Science (waiting for Accreditation)
 - b. MSc/MPhil in Geomatics (Waiting for Accreditation)

Administration of the School

The School Administration is constituted by the following personnel:

Dr. Jonas A. Akudugu	Ag. Dean
Ms. Joyce Dogenereba	Faculty Officer
Mr. Musah Konlan	Senior Administrative Assistant
Ms. Farida Elorm Sekou	Senior Administrative Assistant
Mr. Derrick Oppong Kumi	Senior Administrative Assistant

Staff and Student Statistics

S/N	Ranks	Male	Female	Total Number
1.	Associate Professors	0	0	0
2.	Senior Lecturers	2	0	2
3.	Lecturers	6	4	10
4.	Assistant Lecturers	1	0	1
5.	Technical Instructors	1	0	1
6.	Senior/ Technicians	1	0	1
7.	Junior Assistant Registrar	0	1	1
8.	Senior Administrative Asst.	2	1	3
9.	Grand Total	13	6	19

Student Population of the School

Department of Planning and Sustainability- BSc Planning and Sustainability				
Level	Male	Female	Total	Remarks
100	52	23	75	
200	72	36	108	

300	46	25	71	
400	30	6	36	First Batch
Sub Total	200	90	290	
MPhil Environmental Planning and Development				
First Year	8	4	12	
Second Year	12	1	13	
Sub Total	20	5	25	
Department of Geographic Science- Diploma in Geoinformation Science				
Level	Male	Female	total	
100	11	8	19	
200	16	7	23	
Sub Total	27	15	42	
Department of Atmospheric and Climate Science- Climate Change and Sustainable Development				
Level	Male	Female	Total	
100	34	30	64	
200	29	11	40	
300	15	8	23	
Sub total	77	50	127	
Grand total	324	160	484	

Research Collaborations/International Collaborations and Partnership Department of Planning and Sustainability

The Department of Planning and Sustainability collaborates with the following institutions in the delivery of its mandate:

1. The National Development Planning Commission
2. The Ghana Institute of Planners
3. The Land Use and Spatial Planning Authority (National, Regional and District levels)
4. The Regional Planning Coordinating Unit, Bono Regional Coordinating Council

5. Various Metropolitan, Municipal and District Assemblies
6. Department of Planning, KNUST
7. Department of Planning and Land Administration, UDS

Workshops/Conferences/Public Lectures.

Department of Atmospheric and Climate Science

- School of Science, University of Energy and Natural Resources, Sunyani. Smart Systems Symposium 2021: “The Use of Smart Technologies to Control Illegal Mining and Logging in Ghana”, 10th September 2021, UENR Auditorium, Sunyani.
- ActionAid/University of Energy and Natural Resources (UENR), Climate Justice Seminar: “Socio-economic and Environmental effects of Climate Change on Women and Households in the Bono enclave of Ghana”, July 29, 2021, St. John’s Conference room, Eusbett Hotel, Sunyani.
- Ghana Science Association (GSA), Manuscript Writing Workshop, 30th March 2021, Speakers: Prof. Kwaku Tano-Debrah (Dean of Graduate Studies, UG/Editor-In-Chief, Journal of GSA) and Prof. Gordon Awandari (Director of WACCIP), Virtual
- Web of Science (Clarivate), Every researcher needs to showcase their work, 30th March 2021, Host: Bob Green, Webinar
- University of Energy and Natural Resources/Elsevier, Training on Scopus Database, 3rd March 2021, Virtual
- Ghana Meteorological Agency (GMet)/Kwame Nkrumah University of Science and Technology (KNUST), Meteorological Virtual Seminar Series-Ghana, 24th February 2021
- IT Directorate, University of Energy and Natural Resources, Moodle E-Learning Training, 23rd February 2021, Virtual
- African Institute of Mathematical Sciences (AIMS) Global, Next Einstein Forum (NEF) Global Gathering 2020, 8th – 10th December 2020, Virtual
- The World Bank/ The Regional Center for Mapping of Resources for Development (RCMRD), Satellite Monitoring for Forest Management, 10th December 2020, Virtual
- Ghana Meteorological Agency (GMet)/Regional Institute for Population Studies (RIPS), University of Ghana, GMet Weather Information Dissemination System, 4th November 2020, Virtual
- Quality Assurance Practice Unit (QAPU), UENR, Workshop on Institutional Intellectual Property (IP), 10th March 2020, Sheila’s Executive Hotel, Sunyani-Fiapre
- Regional Center for Energy and Environmental Sustainability (RCEES),

UENR/University of Twente (UT), Netherlands, Geostatistical Modelling, Prediction and Simulation of Environmental Data, 4th-7th February 2020, RCEES Conference Room, University of Energy and Natural Resources (UENR), Sunyani.

- Center for Climate Change and Gender Studies (3CGS), UENR/ The Association of Commonwealth Universities (ACU)/ Climate Impact Research Capacity and Leadership Enhancement (CIRCLE), Climate Smart Innovations from Below: Strengthening Stakeholders' Capacity to manage Forest-Agriculture Landscape through Learning Platform-Training for the Sunyani Learning Platform 2020 (SLP 2020) Executives- Proposal Writing and Fundraising, 31st January, 2020, Graduate School Conference Room, University of Energy and Natural Resources (UENR), Sunyani.
- Center for Climate Change and Gender Studies (3CGS), UENR/ The Association of Commonwealth Universities (ACU)/ Climate Impact Research Capacity and Leadership Enhancement (CIRCLE), Climate Smart Innovations from Below: Strengthening Stakeholders' Capacity to manage Forest-Agriculture Landscape through Learning Platform-Sunyani Learning Platform 2020 (SLP 2020), 23rd January, 2020, University of Energy and Natural Resources (UENR) Auditorium, Sunyani.

Department of Geographic Science

Dr. Peter Damoah-Afari

- Chairperson: Inter-Party Dialogue Committee Meeting on Violent Extremism. The National Commission for Civic Education (NCCE), Dormaa Central Municipal Assembly. 10th November, 2021.
- Participant: Google Earth Engine for Machine Learning & Change Detection. Udemy, Paid Online Course, 18-30th October, 2021. <https://www.udemy.com/>
- Participant: Training on Vegetation Mapping Using Google Earth Engine, German Aerospace Center (DLR) in Collaboration with West African Science Service Center for Climate Change and Adapted Land Use (WASCAL), AgRAIN Remote Sensing Workshop (Online), 19th & 20th October, 2021.
- Participant: Introduction to NASA Resources for Climate Change Applications (Session A), Applied Remote Sensing Training (ARSET) Program, NASA, Introductory Webinar, 29th & 30th September, 2021.
- Participant: Training Workshop on Risk Control, Risk Management and Social Accountability. The Institute of Local Government (ILGS), Dormaa Central Municipal Assembly, Dormaa-Ahenkro, Ghana, 26th May, 2021.
- Participant: Remote Sensing: A Replacement for Ground-Based Monitoring

of Critical Infrastructure? UP42 GmbH Webinar, 12th May, 2021.

- Participant: Training on Climate-related cloud-based data collection, processing, and management, West African Science Service Center for Climate Change and Adapted Land Use (WASCAL), 3rd - 5th May, 2021.
- Participant: ESRI Imagery and Remote Sensing Educators Summit (Online), Environmental Systems Research Institute (ESRI), 28-29th April, 2021.
- Participant: Detecting Disinformation and Hostile Information Activities in Aerial Imagery and Geospatial Data. Open Aerial Imagery Association Webinar, 16th December, 2020.
- Participant: Open Sources of Aerial Imagery and Geospatial Data. Open Aerial Imagery Association Webinar, 9th December, 2020.
- Participant: Detecting Disinformation and Hostile Information Activities in Aerial Imagery and Geospatial Data. Open Aerial Imagery Association Webinar, 16th December, 2020.
- Participant: Open Sources of Aerial Imagery and Geospatial Data. Open Aerial Imagery Association Webinar, 9th December, 2020.
- Participant: Training Workshop on Environmental and Social Safeguard. Ghana Secondary Cities Support Programme (GSCSP), Bono Regional Coordinating Council, University of Ghana Learning Centre (Adult Education), Sunyani, Ghana, 26th November, 2020.
- Participant: Capacity Building Training Workshop. Training in Policy Development; Interpretation Relationship; Time Management; Monitoring and Evaluation; Supervision; and Communication Skills. The Institute of Local Government (ILGS), Dormaa Central Municipal Assembly, Dormaa-Ahenkro, Ghana, 15th September, 2020.
- Participant: 2020 Orientation and Training Programme for Members of Metropolitan, Municipal and District Assemblies (MMDAS). The Ministry of Local Government and Rural Development (MLGRD) in Collaboration with the Institute of Local Government (ILGS), Dormaa Central Municipal Assembly, Dormaa-Ahenkro, Ghana, 19th – 20th August, 2020.

Dr. Prisca Ama Anima

- Presenter: Regional Conference in West Africa. Emerging Population. Health and Development Concerns in Africa. 23rd to 25th June, 2021.
- Participant: Female Academic Careers in Africa: Strategies and funding with Maria Sibylla Merian Institute for Advanced Studies: 26th June, 2021.
- Participant: Perception on sustainable environmental management: Panel discussion with Maria Sibylla Merian Institute for Advanced Studies: 07th September, 2021.
- Presenter: Impacts of Covid on Academic Activities with DAAD Alumni. 3rd September at Tamale.

Dr. Lily Lisa Yevugah

- Participant: Bridging Observation and numerical modelling of the Ocean using machine learning. AI for Good. 10th November 2021
- Participant: Digital Earth Africa (Workshop); De Africa and EORIC – October 7, 2021
- Participant: 2021 Land Surveying Division Annual Seminar; Ghana Institution of Surveyors (GhIS) – 23rd – 25th August 2021
- Participant: R Discovery Global Symposium for Literature Search: R Discovery – May 2021
- Participant: Use of CORS for RTK and static survey and its associated benefits: Land Surveying Division, Ghana Institution of Surveyors (GhIS) - 20th May 2021
- Participant: Workshop: Satellite data analysis and Machine Learning Class with QGIS PART 2; AI for Good, 11th May, 2021.
- Participant: Workshop: Satellite data analysis and Machine Learning Class with QGIS PART 1; AI for Good: 13th April 2021.

Proposals

Department of Planning and Sustainability

A number of proposals have been written by staff members to seek funding to undertake research.

Department of Atmospheric and Climate Science.

The department is currently collaborating with the Tree Ring Laboratory of the Lamont-Doherty Earth Observatory, Columbia University (CU), US to work on a proposal to reconstruct the Climate of West Africa through dendrochronology measurements. The proposal is due to be submitted before the second quarter of 2022.

Grants and Awards

Department of Geographic Science

- Award of Honour: Received from the Students' Representative Council (SRC) of UENR for "Your Unwavering Support and Unrelenting Guidance that Helped in Leading Our Path of Success."

Funding of Research Activities

Department of Planning and Sustainability

Staff of the department have been working in teams on the following research clusters:

- Cluster 1: Urban planning and environmental resource governance
- Cluster 2: Local economic growth and community resilience.

Department of Geographic Science

1. Institutional Membership

- » Western North America Interferometric Synthetic Aperture Radar (WInSAR) Consortium Institutional Member
 - WInSAR Member Category: Adjunct II
 - Institution: University of Energy and Natural Resources (UENR)
 - Representative: Peter Damoah-Afari
 - Permitted to use InSAR Scientific Computing Environment (ISCE) Software: Yes

2. Donation of Surveying Equipment from the Following Persons:

- » Mr. Stephen Kportufe (Former Student of Dr. Peter Damoah-Afari):
 - David white Level Instrument Meridian LT6-900; Model No.: 8834; Serial No.: D1715040.
 - David White Levelling Staff (Imperial units); Model No: 7703.
 - Mound City Levelling Staff (Imperial units); Model No: 903043; Part No.: 907344
 - Sokkia Ranging/Prism Rod with Bubble; Model No.: AP67; Serial No.: D71014
- » Mr. Krijn Driessen (Water Wox, Ghana Water; a Friend of Dr. Lily Lisa Yevugah)
 - Eyeskey Military Lensatic Compass

PETER DAMOAH-AFARI

Research Activities/Interests

- SAR Interferometry for Deformation Monitoring and Measurements.
- Integration of GIS and Remote Sensing for Environmental Monitoring.
- Hyperspectral Remote Sensing for Vegetation, Mineral and Pollution Mapping.
- Land Registration and Cadastre for Sustainable Development.

DR. LESLIE DANQUAH

Research Activities/Interests

- Child Environmental Health
- Domestic Water Use
- Domestic Water Quality Assessment and Monitoring.

DR. PRISCA AMA ANIMA

Research Activities/Interests

- Environmental Studies
- Livelihoods
- Resource Management and Sustainable development.

DR. LILY LISA YEVUGAH

Research Activities/Interests

- Integration of GIS and Remote Sensing for Environmental Monitoring.
- Geospatial Technology for environmental pollution and degradation monitoring and mapping
- Land Management for Urban and Sustainable Development

Publications (for the year under review)

Publication	Department			
	Planning and Sustainability	Atmospheric and Climate Science	Geographic Science	Sub total
Journal Articles	14	19	2	35
Journal under review	0	0	5	5
Edited books	3	1	0	4
Book chapters	7	0	0	7
Conference paper	0	1	0	1
Total	24	21	7	52

Community Engagements

Department of Planning and Sustainability

Staff of the department and students engage with the MMDAs and the communities within our catchment for our planning studio work. Data collected from the communities for studio purposes are shared with the MMDAs and other decision-making bodies.

Department of Atmospheric and Climate Science

- DACS fully participated in the 5th STEM Festival
- DACS through Dr. Naomi Kumi embarked on an outreach programme to Koroaso Community School, Dormaa Central Municipal where students were introduced to the Department and its programmes and were also exposed to the Importance of Education.

Department of Geographic Science

Dr. Peter Damoah Afari

UENR:

- Acting Head: Department of Geographic Science (Aug. 2021 – Date).
- Member: Budgetary sub-committee of the Academic Board (Nov. 2021 – Date)
- Member: Committee to Look at UENR Graduate School IT Challenges (July – Aug. 2021).
- Head: Department of Geographic Science (Aug. 2020 – July, 2021).
- Fellow: Regional Center for Energy and Environmental Sustainability (RCEES) (2019 – Date).
- Member: Committee to Design a Strategic Plan/Implementation Plan for the School of Geosciences, UENR (April 2021 – Date).
- Member: Committee to Review a Proposal for MSc/MPhil/PhD in Sustainable Mining (March 2021).
- Member: Committee for the Development of Diploma/BSc/MSc/MPhil/PhD in Geomatics (April 2021 - Date).
- Member: Committee for the Development of Diploma/BSc/MSc/MPhil/PhD in Geography and Sustainable Development (April 2021 – Date).
- Chairperson: Undergraduate and Postgraduate Programmes in Geoinformation Science Development Committee (August 2020 – Date).
- Member: School of Geosciences Board (2020 – Date).
- Member: Academic Board (2019 – Date).
- Member: Students' Hostel and Accommodation Management Committee,

Dormaa Campus (2019 – Date).

Dormaa Central Municipal Assembly:

- Member: Executive Committee, Dormaa Central Municipal Assembly (2020 – Date).
- Member: Public Relations and Complaints Committee, Dormaa Central Municipal Assembly (2020 – Date).
- Government Appointee from Dormaa Traditional Council: Dormaa Central Municipal Assembly (2020 – Date).
- Chairperson: Development Planning Sub-Committee, Dormaa Central Municipal Assembly (2020 – Date).
- Member: Works Sub-Committee, Dormaa Central Municipal Assembly (2020 – Date).
- Member: District Scholarship Review Committee, Dormaa Central Municipality (2019 – Date).
- Member: District Census Implementation Committee (DCIC), 2021 Population and Housing Census, Dormaa Central Municipal Assembly (May 2021 - Date).
- Member: Inter-Party Dialogue Committee. The National Commission for Civic Education (NCCE), Dormaa Central Municipal Assembly (2020 – Date).
- Chairperson: Election 2020 Parliamentary Debate in Dormaa Central Constituency (2020).
- Chairperson: District Registration Review Committee (DRRC), Dormaa Central Municipality (2020).

Dormaa Traditional Council:

- Sanaahene (Financial Secretary / Treasurer) (Dec. 2015 – Date)
- Member: Judicial Committee to Settle Chieftaincy Dispute in Kofi Badukrom in the Dormaa Traditional Area (March 2021 - Date).

Dr. Leslie Danquah

- Post Graduate Coordinator: School of Geosciences.
- Undergraduate Students' coordinator: Department of Geographic Science
- Member: Committee for the Development of Diploma/BSc/MSc/MPhil/PhD in Geomatics (April 2021 - Date).
- Member: Undergraduate and Postgraduate Programmes in Geoinformation Science Development Committee (August 2020 – Date).
- Member: Committee for the Development of Diploma/BSc/MSc/MPhil/PhD in Geography and Sustainable Development (April 2021 – Date).

- Member: School of Geosciences Board
- Member: School of Graduate Studies Board.

Dr. Prisca Ama Anima

- Board Member: Centre for Distance Education and E- Learning (August 2021- Date)
- Chairperson: Committee for the Development of Diploma/BSc/MSc/MPhil/ PhD in Geography and Environmental Studies (April 2021 – Date).
- Member: Committee for the Development of Diploma/BSc/MSc/MPhil/PhD in Geomatics (April 2021 - Date).
- Member: Committee that developed Diploma/BSc/MSc/MPhil Programme in Applied Meteorology and Climate Science (2021)

Dr. Lily Lisa Yevugah

UENR:

- Chairperson: Committee that developed Diploma/BSc/MSc/MPhil Programme in Geomatics (2021)
- Member: Committee that developed Diploma/BSc/MSc/MPhil Programme in Applied Meteorology and Climate Science (2021)
- Member: Committee that developed Diploma/BSc/MSc/MPhil Programme in Geography and Sustainable Development (2021)
- Member: The 2021 STEM Festival Committee (2021)

Other:

- » Board Member: The Gaudete Institute (June 2021- Date)
- » Reviewer: The Inspirer: Newsletter of the Women in Science, Technology, Engineering and Mathematics in Ghana (WISTEM) (September, 2021)
- » Member: Information Technology (IT) Committee, Ghana Institution of Surveyors (2019 – Date)

Visits

Department of Planning and Sustainability

The following individuals have visited the Department within this academic year.

1. The Bono Regional Director of the Land Use and Spatial Planning Authority
2. The Bono Assistant Regional Economic Planning Office
3. The Dormaa East District Planning Officer; and
4. The Dormaa Central Municipal Planning Officer

Future Plans of the School

The future plans of the departments within the school of Geoscience are outlined below:

Department of Planning and Sustainability

The future plans of the department are:

1. Deepen research through teamwork and collaboration
2. Improve teaching and learning and enhance staff/students engagement
3. Strengthen our collaboration with stakeholders and communities within our catchment
4. Promote postgraduate research by introducing a PhD programme

Department of Atmospheric and Climate Science

- The department is planning to institute regular Webinars, Seminars and Symposium Sessions beginning in the 2021/2022 academic year. Researchers from Ghana and abroad will be invited to present their work during these seminars.
- The department intends to establish an Association of Women in Climate Science (AWiCS). This association is meant to purposefully to motivate our young women in the department to climb higher in the field of climate science and related areas.
- The department plans to establish a Peer-Review Committee whose main function will be to see to the up-to-date progression in the thesis work of both undergraduate and graduate students. This is to ensure the smooth exit of our students, particularly, our graduate students.
- As a way of student motivation, the department has agreed to adopt the institution of an academic excellence award scheme for best-performing students at each undergraduate study level within the department. Additionally, there will be another award for the best graduating student.
- The department intends to roll up a BSc Applied Meteorology and Climate Science programme in the 2022/2023 Academic year.
- The department plans to have at least one MoU signed with relevant industrial bodies as well as academic institutions to enhance its visibility and also to forge more research collaboration both at the local and international levels.

Department of Geographic Science

- As part of the Strategic Plan of the University, 2016-2026, the Department has planned to mount the following academic programmes:
 - » BSc in Geoinformation Science,
 - » Diploma/BSc in Geomatics
 - » MSc/MPhil in Geoinformation Science
 - » MSc/MPhil in Geomatics

The National Accreditation Board (NAB) and National Council for Tertiary Education (NCTE) documents for the above programmes have been submitted to the Quality Assurance Section of the University for Accreditation purposes.

- The Department plans to run short courses (Certificate and Diploma) in Digital Cartography, Drone Mapping, Geographic Information Systems (GIS), and Remote Sensing.
- The department in consultation with the university management will be exploring the ratification of MOUs with international and local institutions for the purposes of enhancing research capacity, promoting interdisciplinary research and improving instrumentation.
- The Department has plans to establish a state-of-the-art GIS and Remote Sensing Laboratory that is equipped with some necessary equipment and software.

SCHOOL OF ARTS AND SOCIAL SCIENCES

SCHOOL OF ARTS AND SOCIAL SCIENCES

Introduction

The School of Arts and Social Sciences (SASS) was established in the 2018/2019 academic year with the mandate of training young people intellectually and practically to establish their own enterprises or support existing ones.

Presently, the School comprises two departments and five subunits. These are the Department of Entrepreneurship and Business Sciences (DEBS), with Entrepreneurship and Economics as units, and the Department of Languages and General Studies (DLGS) with French, English and General Studies as units.

Departments and Research Centres/Institutes

The Department of Entrepreneurship and Business Sciences runs both undergraduate and diploma programmes in entrepreneurship and enterprise management. It has, for some time now, been engaging with the Ghana Tertiary Education Commission for permission to introduce bachelors programmes in Economics and Accounting.

The Department of Languages and General Studies has been running the Ghanaian and African Studies programme as well as communication skills in English and French Languages. It also has responsibility for the organization of the International Language Proficiency Examination such as TEF, TEFAQ, DFP, DELF and DALF.

Academic Programmes

1. Department of Entrepreneurship and Business Sciences; Head: Dr Emmanuel Opoku Marfo
Undergraduate Programmes
 - i. BSc. Resource Enterprise and Entrepreneurship
 - ii. Diploma in Enterprise Management
2. Department of Languages and General Studies; Headed by Mr. Richard Baffour Okyere
3. Centre for Entrepreneurship and Business Incubation; Head: Mr. Reginald Djimatey

Administration of the School

The following personnel constitute the School Administration:

1. Professor Yaw Ofosu-Kusi: Dean
2. Nana Dr Boakye Yiadom Kusi: Faculty Officer
3. Miss. Stephanie Aidoo: Senior Administrative Assistant

Staff and Students Statistics

1. Department of Entrepreneurship and Business Sciences: Total number of Staff is 16, consisting of 14 lecturers and 2 administrative staff
2. Department of Languages and General Studies: Total number of staff is 20, consisting of 19 lecturers and one administrative staff
3. The total student population of the School is 1,353

Research Collaborations (Local and International)

2018 – 2020: British Academy's Tracking the UK's International Challenges: 'Children's Rights, Perceptions of Justice, Rights, and Equality: The Challenge of Children's Representation' (Professor Yaw Ofosu-Kusi in conjunction with Dr Afua Twum Danso Imoh (University of Bristol, UK), Prof. Karl Hanson (University of Geneva, Switzerland), Professor Bengt Sandin (Linkoping University, Sweden), Dr Jonathan Josefsson (Linkoping University, Sweden), Prof. Sarada Balagopalan (Rutgers University, USA), and Dr Didier Reynaert (University College Ghent, Belgium)

Workshops/Conferences/Public Lectures

Public Lecture

The Department of Entrepreneurship and Business Sciences (DEBS) hosted a Carnegie scholar, Prof Kwamina Panford of Northeastern University, Boston, USA for two months during which he delivered a public lecture on "The Triple Threats to Ghana's Economic Horizon: Policy Implications and Role of UENR" on 5th August 2021.

Workshop/Training for Students

DEBS organised a workshop for final year students on the theme "Emotional Intelligence" on 5th June 2021 to prepare them for post-graduation challenges of the labour market. The following are some individual attendance and participation in workshops and conferences.

Prof. Yaw Ofosu-Kusi

1. Changing Childhoods in Africa, Organized by Centre for Innovation and Research in Childhood and Youth (Speaker), University of Sussex, UK, Thursday 18 November 2021
2. African Childhoods Through the lens of Slow Violence, Presented at the webinar: Slow Violence: A Reimagining Childhood Studies Seminar Series, 10th February, 2021, University College London.
3. Deliberative Disobedience as a Strategy for Claiming Authority and Representation in the Family, Presented at the British Academy's Tracking

the UK's International Challenges Conference, 28th – 31st January 2020, African Regents Hotel, Accra, Ghana.

Dr. Emmanuel Opoku Marfo

1. "Women In Entrepreneurship and Regulatory Constraints: Evidence From Sub-Saharan Africa, 2020 Virtual Global Development Finance Conference, University of Cape Town, South Africa, 18-19 November 2020
2. Africa entrepreneurship and innovation Series, The Centre for Enterprise and Innovation at De Montfort University, June 29, 2021 15:00 (GMT),
3. International Centre for Transformational Entrepreneurship (ICTE) Think Tank Webinar: Transformational Entrepreneurship and the post Covid19 Global Economy, Coventry University, Principal Partner; Date: May 24, 2021, at 12.30pm UK Time.
4. MoNaL- Mobility Sustainably thought through the life cycle, Kick-Off Workshop; Mobility for Sub Sahara Africa, Bochum University of Applied Sciences-Germany/University of Energy and Natural Resources, @Eusbett Hotel, Sunyani, Ghana. Date: April 19, 2021

Dr. Emmanuel Adu Boahen

Department of Economics Alumni Congress and International Conference, Venue: Department of Economics, Ghana. Date: July 29-30, 2021

Dr. Paul Adjei Kwakwa

Sustainable Development Conference at Volta Hotel, Akosombo, Eastern Region, Ghana. Date: July 22-25, 202.

Dr. David Boohene

1. RESILIENT GHANA National Mentorship Programme 2021: Beyond Nuts and Bolts of Budgeting (Budgeting- Series II). Presented by Dr. David Boohene via ZOOM; May 29, 2021
2. RESILIENT GHANA National Mentorship Programme 2021: Nuts and Bolts of Budgeting (Budgeting- Series I). Presented via ZOOM; May 22, 2021

Mr. Daniel Berko

Postgraduate Online Training Workshop: Information Finding Tools: Endnote, Sabinet and EbscoHost, University of Kwazulu Natal, South Africa. May & June 2021

Mr. Michael Ayikwei Quarshie

1. Accounting and Accountability in Emerging Economies Conference 2021, University of Essex, Essex, England, June 28-30th, 2021.

2. Institute of Internal Auditors Ghana, IIA Ghana: Operational Risk Management, 4th November, 2021.
3. Institute of Internal Auditors Ghana, IIA Global: The Relevance Factor, 23rd September, 2021.
4. The Article Publishing Process: An Elsevier Workshop, Researcher Academy on Campus, Elsevier, 27th August, 2020

Publications for the 2020/2021 Academic Year

Staff of the School produced 51 refereed journal articles, 7 conference papers and 2 books for the period under review. Some of the publications are:

Prof. Yaw Ofosu-Kusi

1. Ofosu-Kusi, Y. & Motoji, M. (2020) (Eds.) The Challenge of African Potentials: Conviviality, Informality and Futurity, Bamenda, Cameroon: Langaa RPCIG & Centre for Africa Area Studies (CAAS) Kyoto University, Japan
2. Kleeberg-Niepage, A., Ofosu-Kusi, Y., Rademacher, S. & Tressat, M. (eds.) (2020) Children, Childhood and the Future: Cross-cultural Perspectives, Newcastle-upon-Tyne: Cambridge Scholars Publishing

Dr. Emmanuel Opoku Marfo

Awuah, L. S., Amoako, K. O., Yeboah, S., Marfo, E. O., & Ansu-Mensah, P. (2021). Corporate Social Responsibility (CSR): motivations and challenges of a Multinational Enterprise (MNE) subsidiary's engagement with host communities in Ghana. *International Journal of Corporate Social Responsibility*, 6(1), 9. doi:10.1186/s40991-021-00064-8.

Ansu-Mensah, P., Marfo, E. O., Awuah, L. S., & Amoako, K. O. (2021). Corporate social responsibility and stakeholder engagement in Ghana's mining sector: a case study of Newmont Ahafo mines. *International Journal of Corporate Social Responsibility*, 6(1), 1. DOI: 10.1186/s40991-020-00054-2

Amoako, K. O., Amoako, I. O., Tuffour, J., & Marfo, E. O. (2021). Formal and informal sustainability reporting: an insight from a mining company's subsidiary in Ghana. *Journal of Financial Reporting and Accounting*, Vol.19(4) ISSN 1985-2517, DOI 10.1108/JFRA-12-2020-0368

Dr. Emmanuel Adu Boahen

- Berko, D., Dankwa, B. J. & Adu Boahen, E. (2021). Sale of Loans and Credit Risk Management Practices of Savings and Loans Companies: Evidence from an Emerging Economy. *International Journal of Business and Management Review*. 9(3)1-15.

Adu Boahen, E., Opoku, K. (2020). Effects of School Attendance on Literacy and on Child labour: Evidence from Capitation Grant in Ghana. *International Journal of Social Economics*. 48(11) 1567-1588.doi.org/10.1108/IJSE-09-2020-0669

Opoku, K., Mugizi, F.M.P. & Adu Boahen, E. (2021). Gender differences in formal wage employment in urban Tanzania. WIDER Working Paper 2021/99. Helsinki: UNU-WIDER.

Adu Boahen, E., Opoku, K. (2021). Gender Wage Gaps in Ghana: A Comparison Across Different Selection Models. WIDER Working Paper 2021. doi.org/10.35188/UNU-WIDER/2021/944-0

Adu Boahen, E., Opoku, K., Schotte, S. (2020). Duration of Pre-University Education and Labour Market Outcomes: Evidence from a Quasi-Experiment in Ghana. *Journal of International Development*. 33(1):208-232. doi.org/10.1002/jid.3519

Dr. Michael Kwame Asiedu

Asiedu, M.K. (2020). Foreign Aid, Trade Openness and Economic Performance in Sub-Saharan Africa: A Panel Cointegration Analysis, *Journal of Economics and Sustainable Development* (Accepted for publication in the next Issue)

Dr. Paul Adjei Kwakwa

Kwakwa, P. A. (2021). The carbon dioxide emissions effect of income growth, electricity consumption and electricity power crisis. *Management of Environmental Quality: An International Journal*. 32 (3) 470-487

Kwakwa, P. A., Adzawla, W., Alhassan, H. & Achaamah, A. (2021). Natural resources and economic growth: Does political regime matter for Tunisia? *Journal of Public Affairs*, DOI: 10.1002/pa.2707

Kwakwa, P. A., Adusah-Poku, F. & Adjei-Mantey, K. (2021). Towards the attainment of sustainable development goal 7: what determines clean energy accessibility in sub-Saharan Africa? *Green Finance*, 3(3): 268–286

Kwakwa, P. A., Adusah-Poku, F., & Adjei-Mantey, K. (2021). Towards Sustainable Environment: Does Electricity Crisis Matter for the Effect of Industrialisation and Urbanisation on Carbon Dioxide Emissions?. In *Responsible Management in Emerging Markets* (pp. 297-323). Palgrave

Macmillan, Cham.

Adusah-Poku, F., Adjei-Mantey, K., & Kwakwa, P. A. (2021). Are energy-poor households also poor? Evidence from Ghana. *Poverty & Public Policy*, 13(1), 32-58.

Alhassan, H., Kwakwa, P. A., & Dagunga, G. (2021). “Waste Not, Want Not”: Assessing the Determinants of Food Waste Separation and Reuse in Ghana. In *Responsible Management in Emerging Markets* (pp. 243-272). Palgrave Macmillan, Cham.

Twum, K. K., Kwakwa, P. A., Ofori, D., & Nkukporu, A. (2021). The relationship between individual entrepreneurial orientation, network ties, and entrepreneurial intention of undergraduate students: implications on entrepreneurial education. *Entrepreneurship Education*, 1-28.

Ansu-Mensah, P., Kwakwa, P. A., & Maku, S. N. T. (2021). Determinants of the Business Performance of Small and Medium Enterprises in an Emerging Market Economy., *International Journal of Management Knowledge and Learning*, 10,219–23

Dr. Peter Kwasi Oppong

Oppong, P. K., Mensah, J. & Addae, M. (2021). The Importance of Value, Image, Credibility and Trust to Repurchase Intentions in Over-the-Counter Herbal Market in Sub-Saharan Africa. *Open Journal of Business and Management*, 9, 2080-2099.

Oppong, P. K, Gyawu, A., & Yawson, C. A. (2021). The Relationship between Word-of-Mouth, Satisfaction, Trust and Loyalty in Herbal Medicine Industry. *Economics and Business Quarterly Reviews*, 4(2), 47-58.

Dr. David Boohene

Boohene, D. & Amita, M. (2020). Alternative Learning and Assessment Module for Educational Institutions Subsequent COVID-19 Pandemic. (ANUJAT),8(1): 127-135 <http://doi.org/10.47987/SOJH4508>

Mr. Daniel Berko

Berko, D., Dankwah, B. J. & Adu Boahen, E., (2021). Sale of Loans and Credit Risk Management Practices of Savings and Loans Companies: Evidence from an Emerging Economy. *International Journal of Business and Management Review*. 9(3)1-15.

Hammond, P., Berko, D., & Amissah, E. (2020). Sources of Lifecycle Funding and Entrepreneurial Firms' Size as Measured by the Number of Employees. *Research Journal of Finance*, 8(3), ISSN 2348-0963

Abiire, A. M., Berko, D., Adeniyi A., Atindaana, P. A. (2020). A Qualitative Analysis of Revenue Mobilization at Local Government Level in Ghana: Evidence from Bongo District. *Research Journal of Finance and Accounting*, 11(16), ISSN 2222-1697.

Mr. Paul Hammond

Hammond, P., Berko, D. and Amissah, E. (2020). Source of lifecycle funding and entrepreneurial firm's size as measured by the number of employees. *Researchjournal's journal of finance*, Vol. 8, No. 3

Amissah, E., Hammond, P. and Djimatey, R. (2020). The Effects of International Financial Reporting Standards on Reporting Quality of Financial Institutions in Ghana. *International Journal of Accounting and Financial reporting*, Vol.10, No.2. Pp94-118

Solomon Crusader Abo, S.C., Hammond, P., and Amissah, E. (2021). Bilinear Regression Methods for Macroeconomic Impact on Corruption in Ghana. *International Journal of Economics, Business and Management Research*. Vol. 5, No.10; pp 139-156

Amissah, E., and Hammond, P., (2021). Reporting Quality and Audit Fees of Financial Institutions in Ghana [Paper presentation. 6th International Conference on Business Management and Entrepreneurial Development (ICBMED 2021), pp. 145-149. University of Professional Studies, Accra, Ghana.

Mr. Edmond Emissah

Hammond, P., Berko, D. and Amissah, E. (2020). Source of lifecycle funding and entrepreneurial firm's size as measured by the number of employees. *Researchjournal's journal of finance*, Vol. 8, No. 3

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Regression Methods for Macroeconomic Impact on Corruption in Ghana. International Journal of Economics, Business and Management Research. Vol. 5, No.10; pp 139-156

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Mr. Justice Boateng Dankwah

Dankwah, J. B., & Mensah, K. (2021). Political marketing and social media influence on young voters in Ghana. SN Social Sciences, 1(6), 1-19

Berko, D., Dankwah, B. J. & Adu Boahen, E. (2021). Sale of Loans and Credit Risk Management Practices of Savings and Loans Companies: Evidence from an Emerging Economy. International Journal of Business and Management Review. 9(3)1-15.

Mr. Michael Ayikwei Quarshie

Bukari, S., Quarshie, M. A., & Opoku F. K. (2021). Exploring the perspectives of physically challenged women entrepreneurs in the Sekondi-Takoradi Metropolis, Ghana. Journal of Enterprising Communities: People and Places in the Global Economy, Emerald Publishing Limited 1750-6204 DOI 10.1108/JEC-03-2021-0042

Quarshie, M. A., & Djimatey, R. (2020). Financial Performance and Liquidity Trends of Banks in an Emerging Economy: Evidence from Ghana. Asian Journal of Social Sciences and Management Studies, 7(2), 135-142.

Quarshie, M. A., Attafuah, A., & Sarfo, G. (2020). Motivation and Labour Turnover in the Health Sector: Perception of Healthcare Professionals at the Dunkwa-on-Offin Government Hospital, Central Region, Ghana. Asian Journal of Social Sciences and Management Studies, 7(2), 104-113. <https://doi.org/10.20448/journal.500.2020.72.104.113>

Ms. Genevieve Gyasi

Gyasi, G. (2020). "The Impact of Fiscal Deficit on Economic Growth: Using the Bounds Test Approach in The Case of Morocco" MPRA Paper 98925, University Library of Munich, Germany

Gyasi, G. (2020). "The Impact of Trade Agreement Policy on Employment," MPRA Paper 101307, University Library of Munich, Germany

Department of Languages and General Studies

Mr. Richard Baffour Okyere

R.B. Okyere D.Tahiru. (2020), Quand les écrivains engagés tournent vers la diplomatie : le cas d'Oyono, Césaire et de Senghor, Benin, Laboratoire de Sociolinguistique, Dynamique des Langues et Recherches en Yoruba (LASODYLA-REYO), ReSciLac Vol.11, issue 4, pp :322- 331, ISSN : 1840-8001

J.A, Abdulai, R.B. Okyere (2020), L'étiquetage morphosyntaxique supervisé des parties de discours du twi, une langue du Ghana, Global Scientific Journal, Vol 8, issue 6, ISSN 232091 86

R.B. Okyere, J. A. Abdulai. (2020), Etude des jeux et enjeux de la diplomatie dans l'œuvre : la guerre de Troie n'aura pas lieu de Jean Giraudoux, Journal of Humanities and Social Sciences, Intertextuel, Numéro 3, ISSN : 2663-239X, www.inter-textual.univ-ao.edu.ci

J.O. Adinkra, F.D. Appiah, R.B, Okyere. (2021), Impact de la musique de Lucky Mensah, Kwame Asare Obeng (A+), Shatta wale et Barima Sidney sur la scène politique ghanéenne, Laboratoire de Sociolinguistique et didactique-SocioD No :6, (Lasodyla-Reyo) ISSN :1840-7994

R.B.Okyere, Appiah, F. D.(2021), Resolving crisis through literary diplomacy: A case study of the Trojan War will not take place by Jean Giraudoux, 4th School of languages conference, Legon.

Mr. Francis Douglas Appiah

Appiah, F. D. & Adinkra, J. K. O. (2020). Analyse diachronique et synchronique des noms des partis politiques ghanéens de la quatrième république. In SociD, Sociolinguistique & Didactique, janvier 2020, No 5, ISSN : 1840-7994, pp. 44-48. Université d'Abomey-Calavi, Bénin : LASODYLA-REYO.

Mr. Appiah, F.D. (2020). Infériorité ou supériorité de la femme dans le système matriarcal akan: Une investigation à travers les proverbes akan. In ReSciLaC, Revue Pluridisciplinaire, juin 2020, No 11, ISSN: 1840-8001, pp.244-252. Université d'Abomey-Calavi, Bénin: LASODYLA-REYO.

Mr. Appiah, F. D., Adinkra, J. K. O. & Okyere, R. B. (2021). Impact de la musique de Lucky Mensah, Kwame Asare Obeng (A+), Shatta Wale, et Barima Sidney sur la scène politique ghanéenne. In SociD, Sociolinguistique & Didactique, janvier 2021, No 6, ISSN : 1840-7994, pp. 39-48. Université d'Abomey-Calavi, Bénin : LASODYLA-REYO.

Mr. Tahiru Djato

T. Djato, (2020), Image de l'Afrique et des Antilles dans l'œuvres de Aimé Césaire, Benin, Laboratoire de Sociolinguistique, Dynamique des Langues et Recherches en Yoruba (LASODYLA-REYO), ReSciLac Vol.11, issue 4, pp :322- 331, ISSN : 1840-8001

Mr. Johnson Baah

Baah, J., Agyemang, C. A., Anning, P., & Issaka, M. (2020). Inherent Complements as Source of Disambiguation of Multi-meaning Verbs in Bono. Research Journal in African Languages, 1(2)

Mr. Justine K.O. Adinkra

Adinkra, J.K.O. & Appiah, F.D. (2020): Analyse diachronique et synchronique des noms des partis politiques ghanéens de la quatrième république in SociD, Sociolinguistique & Didactique, janvier 2020, No 5, ISSN : 1840-7994, pp. 44-48. Université d'Abomey-Calavi, Bénin : LASODYLA-REYO.

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Afram, C. S. & Adinkra, J. K. O. (2020): La problématique du travail de groupe en classe de langue in Journal of Humanities and Social Sciences-Inter-Textual, décembre 2020, No 3, ISSN :2663-239X, pp.150-155. Bouaké : Université Alassane Ouattara.

Adinkra, J. K. O., Appiah, F. D. & R.B.Okyere, R. (2021): L'impact de la musique de Lucky Mensah, Kwame Asare Obeng (A+), Shatta Wale et Barima Sidney sur la scène politique ghanéenne in SociD, Sociolinguistique & Didactique, janvier 2021, No 6, ISSN : 1840-7994, pp. 39-48. Université d'Abomey-Calavi, Bénin : LASODYLA-REYO.

Mr. Mohammed Issaka

Baah, J., Agyemang, C. A., Anning, P., & Issaka, M. (2020). Inherent Complements as Source of Disambiguation of Multi-meaning Verbs in Bono. *Research Journal in African Languages* , 1(2).

Mr. Isaac Asare-Aboagye

Asare-Aboagye, I., & Acquah, E. O. (2020). On Distinctive Features and Categorization of Tewbabi Folk-game Songs. *International Journal of Innovative Research and Development*, Vol. 9 Issue 7

Miss Gertrude Grumah

Amenorvi, C. R., & Grumah, G. Y. (2020). Money talks: a multimodal ethnographic study of Ghana's currency. *Inkanyiso: Journal of Humanities and Social Sciences*, 12(1), 72-85

Amenorvi, C. R., & Grumah, G. Y. (2020). Gender and Sexuality Linguistic Taboos: A Case of Mɔ̃ and Nnyabi in Ewe and Mampulli. *Hybrid Journal of Literary and Cultural Studies*, 2(3), 6-26.

Miss Cecilia Owusu Debrah

Baah, J., Agyemang, C. A., Anning, P., & Issaka, M. (2020). Inherent Complements as Source of Disambiguation of Multi-meaning Verbs in Bono. *Research Journal in African Languages*, 1(2).

Mr. Kwasi Sarfo

Sarfo, K. & Roberts, C. O. (2021). Land tenure dynamism in yam farming in the Atebubu-Amanten District, Ghana. *The International Journal of Humanities & Social Studies*, 9(6), 97-106. doi:10.24940/theijhss/2021/v9/i6/164094-396963-3-SM

Roberts, C. O., Sarfo, K., & Kwakye, I. N. (2021). Coping Mechanisms to Mitigate Occupational Stress by Women in Accra Metropolis. *Open Journal of Social Sciences*, 9(6), 207-227. doi: 10.4236/jss.2021.96017

Miss Alberta Dansoah Nyarko Ansah

Appiah, P., Owusu, E., Adade-Yeboah, A., & Ansah, A. D. N. (2021). The Illiterate African Woman as Depicted in Ama Ata Aidoo's *Anowa*. *International Journal of English and Comparative Literary Studies*

Mr. Paul Anning

Baah, J., Agyemang, C. A., Anning, P., & Issaka, M. (2020). Inherent Complements as Source of Disambiguation of Multi-meaning Verbs in Bono. Research Journal in African Languages, 1(2)

Community Engagements**Department of Languages and General Studies****Mr. Richard B. Okyere**

Engagement with the bible society of Ghana for a stakeholder discussion on codification of the Bono language and the writing of the Bono Bible

Mr. Isaac Asare-Aboagye

1. Member: External Examiner on Music Practical Test for Senior High Schools (SHS), WAEC, Ghana: 2012 – date.
2. Judge: Ahafo Regional Inter-Schools Debate, (SHS), at Hwidiem SHS, Hwidiem, Ghana: 2021

Miss Cecilia Owusu Debrah

Adjudicator: Bono Regional Inter-Schools Debate, (SHS), 2021 - GNAT Hostel, Sunyani.

Mr. Kwasi Sarfo

1. Regional Trainer- 2021 Population and Housing Census, Ghana Statistical Service, Bono Region- 1st June -11 June 2021
2. Monitor- Differentiated Learning Training Workshop for UNICEF School, Ghana Education Service, Tano North- 4th-9th May 2021
3. Debate Adjudicator- Inter-Zonal Debate Competition for Second Cycle Schools in the Bono Region- 29th January 2021

Department of Entrepreneurship and Business Sciences**Dr Emmanuel Opoku Marfo**

1. Ahafo Regional Representative; National development Planning Commission
2. Member, Advisory Board, Yamfo College of Health

Mr. Daniel Berko

Member, UTAG Committee on Projects

Mr. Reginald Djimatey

President (UENR Chapter); University Teachers Association of Ghana (UTAG)

Future Plans of the School

1. A new programme, BSc. Economics, is expected to be introduced very soon; a BSc. Accounting programme is also under development
2. The Department of Entrepreneurship and Business Sciences has already developed MBA/MSc., MPHIL and PhD programmes in business and management courses such as Entrepreneurship, Accounting and Finance, Human Resource Management and Marketing and is eagerly awaiting approval from the relevant authorities.
3. Preparations are also far advanced for the introduction of a post-graduate programme in Law with a focus on energy and natural resources.
4. A proposal is being developed for the establishment of a think tank, Centre for Natural Resources and Energy Policy Studies, at the School
5. The Department of Languages and General Studies is developing a handbook for the teaching and learning of French and Academic Writing for the 2021/2022 academic year.

UNIVERSITY LIBRARY

UNIVERSITY LIBRARY

1.0 Introduction

This report gives an overview of the activities that transpired in the University Library during the 2020/2021 academic year. The library is managed by a team of well-trained and dedicated staff who are ever ready to provide assistance and guide users on the effective use of the services of the library.

2.0 Directorate/Division and Staff

The library is managed by a team of well-trained and dedicated staff who are ever ready to provide assistance and guide users on the effective use of the services of the library.

1. Ms. Mercy Ama Asafu-Adjaye	Assistant Librarian
2. Ms. Harriet Fosua Attafuah	Assistant Librarian
3. Mrs. Pearl Owusua-Amanquah	Snr. Library Assistant
4. Mr. Richard Aa-som Gu-imenga	Snr. Library Assistant
5. Mr. John Adamba	Snr. Library Assistant
6. Ms. Mary Asare	Snr. Library Assistant
7. Mr. Samuel Appiah Twumasi	Snr. Library Assistant
8. Ms. Elizabeth Boakyewaa Peprah	Snr. Library Assistant
9. Mr. Richard Adu-Gyamfi	Snr. Library Assistant
10. Mr. Ebenezer Amoah Cheremeh	Snr. Library Assistant

3.0 Major Activities over the Past Year

Completed Activities

- Training for Graduate students on effective electronic information searching;
- Training for University staff on “Practical Tips for Managing Research on Africa Using Bibliography/Sources that Work”. Facilitated by Prof Kwamina Panford;
- the library spearheaded the subscription to Scopus as one of the largest, most reputable abstract and citation databases for academic literature; and
- library Automation Completed

Ongoing Activities

- All library services
- Migration of library resources onto the Koha open source software
- User education

4.0 Other Activities

Some staff of the UENR Library attended some programmes and workshops during the period under review. Below are the various programmes and workshops attended;

- » Workshops/Conferences/ Seminars
- a. Ghana Library Association (GLA) Workshop on “Writing manuscripts that get published”- (Virtual);
- b. Ghana Library Association (GLA) Workshop on Developing Effective Poster Presentation Skills”- (Virtual);
- c. Pro Quest Education training on Discover Ebook Central Platform- (Virtual);
- d. Scopus Training for Staff (Virtual)
 - conducting a successful literature search: A researcher’s guide to tools, terms and techniques-
 - How to find the H Index of an Author
 - How to view citations of an Author
 - How to evaluate an article using research metrics
 - How to evaluate journal metrics
 - How to evaluate an institutional profile
 - Developing effective search strings
 - Creating search alerts
- e. Governing Council Meeting for Academic Libraries in Ghana;
- f. Ghana Library Association (GLA) Annual General Meeting- (Virtual)

5.0 Challenges

The library faces numerous challenges that affect its smooth running. Among such challenges are;

- **Inadequate Space**

The inadequate space in the library limits the number of users who could access the library resources at a time and also makes retrieval of books difficult because most of the materials are stored in boxes since 2016.

- **Access to the Library’s Electronic Resources is limited**

The library’s electronic section needs computers to access the subscribed academic databases by the University. However, the electronic section of the library has only three computers. As a result, accessing the databases is limited.

Secondly, access to the academic databases is limited to the University’s IP address only, which is on- campus. As a result, users are unable to access the academic databases off-campus.

- **Lack of an Assigned Security Officer to the Library**

Libraries need to create a safe and secure environment for the Library materials,

patrons, as well as its staff. The lack of an assigned security officer to the Library makes handling of users difficult. This is because, the library staff have consistently suffered abuse (both physical and verbal) from some users which required the intervention of a security officer.

- **Noise Emanating from Campus Programmes**

Libraries need to create a safe, serene and conducive environment for patrons or users to study. However, noise emanating out of programmes organised at the University's Auditorium, which is directly opposite the Library and the Cafeteria especially on weekends, and weekdays in the evenings distract the smooth studies in the library.

- **Future Plans of the Office/Directorate/Division**

It is therefore hoped that:

- 1) The library's major challenge which is Inadequate Space is resolved by fast tracking the completion of the new library building;
- 2) a Remotexx software be purchased for the library to grant access to the academic databases off-campus;
- 3) subscription for Electronic Books be initiated to supplement the hardcopy resources available;
- 4) a bindery be set up for the library to serve as an Income Generation Enterprise for the library and University at large. This will aid all graduating students the opportunity to bind their thesis at the library. Also, the entire University community as well as the general public can patronise this service. As a result, generate income for the university;
- 5) training would be organised for all level 100 students (in batches) and introduce them to the academic library setting, resources available and the various informal retrieval tool;
- 6) the library would collaborate with the Students Representative Council and organize frequent trainings on effective Information search for students;
- 7) training would be organised for school librarians in collaboration with the Ghana Library Association (GLA);
- 8) training be organised for level 300 students on the various referencing styles to help them in their research writing;
- 9) market the library services and resources often;
- 10) a digitization section be created to digitize resources that are not born digital which are deteriorating;
- 11) setting up an Institutional Repository to showcase the intellectual output of the University which would lead to visibility of the university and the staff; and

- 12) an initiative dubbed “Time with the Librarian” for the University Basic School which is aimed at introducing the pupils to the concept of “libraries”, its “Resources” and “Benefits”

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