



**UNIVERSITY OF GHANA**  
**RESEARCH**  
**REPORT**  
**2015/2016**



**ORID**

Office of Research, Innovation & Development

# UNIVERSITY OF GHANA

The University of Ghana was founded in 1948 as the University College of the Gold Coast. Between 1948 and 1961, the University entered into a special relationship with the University of London to offer limited programmes of study.

By an Act of Parliament on 1st October 1961, the University attained sovereign status with the authority to offer more comprehensive programmes and award its own degrees. The sovereign status together with the aspirations of the new independent state of Ghana formed a catalyst for its rapid growth in the 1960's and the emergence of its distinctive identity as a world-class centre of academic excellence and a leader in career training and professional development. Over the last sixty-five years, the University of Ghana has evolved into one of Africa's leading universities, recognized worldwide for the academic and research excellence of its faculty, student body and for the professional success of its alumni.

## ***Our Vision***

Our vision is to become a "World Class research intensive University" over the next decade.

## ***Our Mission***

We will create an enabling environment that makes University of Ghana increasingly relevant to national and global development through cutting-edge research as well as high quality teaching and learning.

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## Foreword

The 2015–2016 academic year marks another milestone of research activities at the University of Ghana (UG). As we advance to consolidate our efforts as one of the best research intensive institutions in Africa, the University has made huge investments in both infrastructure and human resource development. In this regard, the University of Ghana acknowledges the need for its faculty to produce cutting-edge research and at the same time foster strategic alliances with both local and international partners and donors to ensure a productive development of our country and that of the world.

In this manner, the University also recognises the significance of enhancing the skills and knowledge of both the academic and non-academic staff in order to contribute to the developmental agenda of the nation.

This research report therefore highlights some of the key research activities conducted at the University of Ghana during the 2015-2016 academic year.



# UNIVERSITY OF GHANA RESEARCH PERFORMANCE INDEX



Ranked 7th in African by Times Higher Education Ranking in April 2016

Publications increased by 83.3% from 2011-2015

Citation impact was above world average of 1.05

Between 2011-2015 UG collaborated with 1,025 institutions

56.2% UG publications were co-authored internationally

Source: Elsevier Scival Data

# SNAPSHOT OF RESEARCH ACTIVITIES FOR 2015/2016

Cross-cutting Research Areas Funded by Competitive External Grants: Climate Change, Food Security and Safety, Gender and Women's Studies, Policy Research, Mining, Impact of Dams

6

8

Research Intensive UG Centres, Institutes and Schools Based on Reported Budgets of at least \$500,000: ISSER, NMIMR, WACCBIP, WACCI, School of Agriculture, School of Public Health, School of Medicine and Dentistry, School of Biological Sciences

Major University Partners and Collaborators include: The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), The International Institute of Tropical Agriculture (IITA), Yale University, Kwame Nkrumah University of Science and Technology (KNUST)

4

16

Countries in Africa, Europe and Asia in which UG has a Research Presence Through Multi-country Collaborative Research Studies and Partnerships: Burkina Faso, Cote d'Ivoire, Kenya, Mali, Niger, Nigeria, Senegal, South Africa, Belgium, Netherlands, Germany, China, India, Australia, Canada, United Kingdom

Major Donors Providing Funding to Multiple UG Units: National Science Foundation, Volkswagen, National Institutes of Health, World Health Organisation (WHO), Bill and Melinda Gates Foundation, Department of International Development (DFID), USAID, International Growth Centre, International Institute for Tropical Agriculture (IITA), EU

10

9

Development Partners, Industry and Civil Society Collaborators: Ministry of Finance, Ghana Health Service, Ministry of Fisheries and Aquaculture Development, Ghana Meteorological Agency, Komfo Anokye Teaching Hospital, Agogo Hospital Research Centre, FAO, UNICEF, Ark Foundation

## Summary of Research Funding per College for 2015/16 Academic Year

Colleges	US Dollars	Cedis (Equivalent)
College of Basic and Applied Sciences	6,222,343.31,	24,516,032.64,
College of Health Science	11,870,229.56	46,768,704.46
College of Humanities	13,998,408.37	55,153,728.98
<b>Total</b>	<b>32,090,981.24</b>	<b>126,438,466.08</b>

## Dominant Research Areas Funded with Competitive External Grants

	Climate Change	Impact of Dams	Food Security and Safety	Gender and Women's Studies	Mining	Policy research	Health
<b>College of Basic and Applied Sciences</b>							
Soil and Irrigation Research Centre	X					X	
Institute of Environment and Sanitation	X	X					
Forest and Horticultural Crops Research Centre	X		X				
West African Centre for Crop Improvement	X		X				
School of Biological Sciences			X				
School of Agriculture	X		X				
West African Centre for Cell Biology of Infections Pathogens							X
School of Physical and Mathematical Sciences			X				
<b>College of Health Science</b>							
School of Medicine and Dentistry							X
School of Public Health							X
School of Pharmacy							X
NMIMR			X		X	X	X
<b>College of Education</b>							
School of Information and Communication Studies	X			X			
School of Continuing and Distance Education				X			
School of Education and Leadership				X			
<b>College of Humanities</b>							
Institute for Statistical, Social and Economic Research	X			X			
Institute of African Studies				X		X	
Regional Institute for Population Studies	X			X			
University of Ghana Business School						X	

Centre for Gender Studies and Advocacy					X		X	
Centre for Migration Studies							X	
School of Arts							X	
School of Law							X	X
School of Social Sciences		X						X

## Major Funders of UG Research and Recipient UG Units

	NSF	VW	WT	NIH	WHO	Bill & Melinda Gates	IDRC	UNICEF	DFID	USAID	IITA	IGC	EU	
<b>College of Basic and Applied Sciences</b>														
School of Biological Sciences		X											X	2
School of Agriculture										X				1
West African Centre for Crop Improvement	X									X				2
Soil and Irrigation Research Centre									X		X			1
West African Centre for Cell Biology of Infections Pathogens	X		X											2
School of Physical and Mathematical Sciences					X									1
<b>College of Health Science</b>														
School of Medicine and Dentistry				X										1
School of Public Health				X			X					X		3
School of Pharmacy													X	1
NMIMR				X	X	X								3
<b>College of Humanities</b>														
Institute for Statistical, Social and Economic Research						X	X	X	X	X		X		6
Institute of African Studies								X	X					2
Regional Institute for Population Studies							X			X				3
University of Ghana Business School		X						X	X					3
Centre for Gender Studies and Advocacy							X		X					2
Centre for Migration Studies									X				X	2
School of Arts		X												1
School of Social Sciences	X											X		2
	3	3	1	3	2	2	3	3	6	4	1	3	3	





## Vice Chancellor's Message

The vibrant academic research we have embarked upon over the last few decades clearly shows the diversity of research activity going on at our various research centres and institutes. The University is increasingly being acknowledged worldwide and this is evident in recent university rankings. The latest university rankings compiled by the Times Higher Education in April 2016, places the University of Ghana 7th in Africa. I will therefore encourage faculty members and students to consolidate these gains. With respect to funding, at the close of 2015-2016 academic year, our research funding had amounted to USD 32,090,981.24.

In spite of the challenges we face as a University, there has been a deliberate effort to create an enabling environment for research, by investing significantly in human capital and high-end science equipment. Let me hasten to add that our research partners have increased over the last few years, as many academic institutions find University of Ghana a suitable destination to conduct cutting-edge research. The number of foreign applicants applying for PhD and post-doctoral fellowships has increased significantly as a result of massive investment and restructuring of our graduate programmes.

I am grateful to the University management for their unwavering support and guidance. I take this opportunity to express my gratitude to all our stakeholders, who have reposed trust in us and extended their constant support to the University.

**PROFESSOR ERNEST ARYEETAY**

## Pro-Vice Chancellor's Message

### *Research, Innovation and Development (RID)*

We are proud that the University of Ghana research report has received a strong and sustained support from all our faculty members. The research report has now become an important reference for our research and development (R&D) activities and also provided a platform to share our story with the outside world

Our aim is to strive to create an enabling environment and opportunities that allow UG faculty, staff and students to have the greatest impact in their fields of research through the conduct of outstanding research and creative activities that fuel discovery and advance knowledge. As part of efforts to achieve this, the University of Ghana through its Office of Research, Innovation and Development (ORID) provides a number of funding opportunities as well as research support services. In addition, the University of Ghana has procured the InfoEd Grants Management software as part of its efforts at streamlining grants management at the University.

The Technology Development and Transfer Centre recently introduced the Technology Development Research Grant which aimed at enabling researchers to develop and repackage their technologies for private use. It has also awarded 16 grants to faculty members from various colleges. All these are measures put in place to make University of Ghana technologies visible to the outside world. We are therefore grateful to our donors for their support and contribution.



**PROFESSOR JOHN GYAPONG**



# OFFICE OF RESEARCH, INNOVATION AND DEVELOPMENT (ORID)



**Professor Andrew Anthony Adjei**  
Director of Research

ORID provides research support services to the University community by creating an enabling environment for investigators to address local and global issues. Our commitment to promote creativity and innovation led to the establishment of College Research Boards and the development of policies to guide and support research activities.

Training and development of academic staff/researchers through doctoral and post-doctoral programmes have been identified as an important approach for supporting UG research strategy as well as strengthening its research capacity. Our quest to support and build the capacities of PhD students received another boost through periodic training workshops under the auspices of Pan-African Doctoral Academy (PADA), (German Academic Exchange Service (DAAD), Department for International Development (DFiD), Carnegie, and the Danish government initiative Building Stronger Universities (BSU) in Developing Countries project. Recently with support from the Danish Government under the BSU Programme, the Institute of Statistical, Social and Economic Research, the Department of Economics, the University of Ghana Business School and ORID organised a PhD Conference in November 2015 which attracted over 300 participants from public and private universities in Ghana and some Danish Universities. Also under the programme, a new state-of-the-Art PhD conference facility was constructed and commissioned at the School of Graduate Studies in January 2016 to facilitate PhD work at the university of Ghana.

As part of efforts to promote networking and collaboration, and increase the University's visibility, the University of Ghana joined the Worldwide Universities Network (WUN), a leading global higher education and research network made up of 18 research intensive universities, spanning 11 countries on five continents.

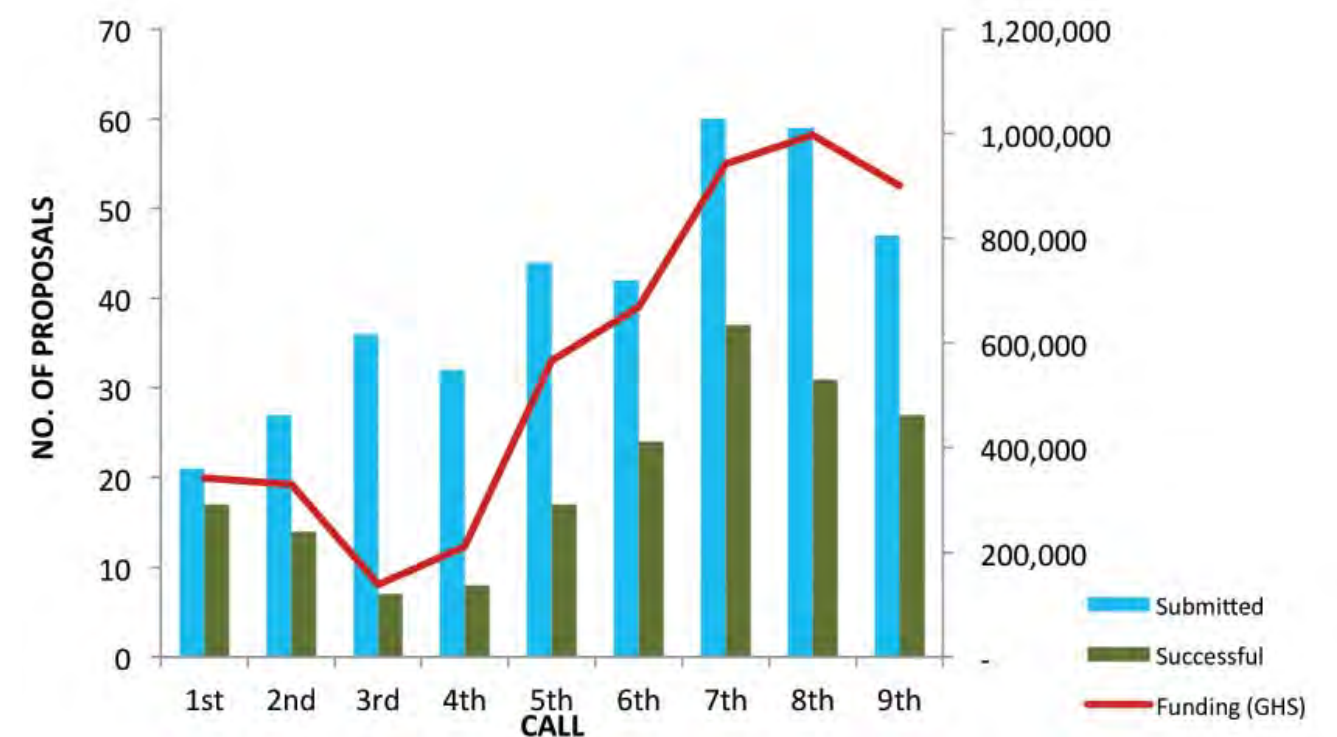
# RESEARCH AND GRANTS MANAGEMENT SERVICES

## University of Ghana Research Grants

Setting the right research environment is part of the University of Ghana's effort to promote research activities in its quest to achieve high impact research results and to continually remain relevant both at the national and international levels. UG therefore strives to provide a platform on which its research activities thrive. The University of Ghana's flagship research grants scheme provides a platform for our researchers at various stages in their career to apply for (through

a competitive process) grants to undertake multi-disciplinary and trans-disciplinary research. This scheme which is now in its 8<sup>th</sup> year has announced 9 Calls for proposals and has awarded a total of 182 grants with a value of about GHS 5 million over the 8 year period – all funded from the University's Internally Generated Funds (IGF). Figure 1 below shows the submission and award trends since the inception of the scheme to date:

Figure 1: Submission, Award and Funding Trends for the UGRF Calls for Proposals (2008 – 2015)



In October 2015 the 9th Call for proposals was announced which yielded 47 applications. In February 2016, a total of twenty-seven (27)

research grants with a value of **GHS 901, 526** was awarded with summarised details (by College) as shown in table 1.

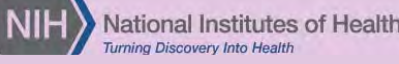
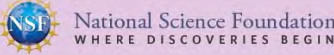






**Table 1: Distribution of Awards by College**

COLLEGE	GRANT CATEGORY			TOTAL AWARDS	TOTAL VALUE OF GRANTS (GHS)
	Seed Grants	Investigator-led Grants	Large Multidisciplinary Grants		
College of Basic and Applied Sciences	4	3	2	9	299,404
College of Education	-	2	-	2	63,995
College of Health Sciences	1	7	2	10	379,458
College of Humanities	2	4	-	6	158,669
<b>TOTAL</b>	<b>7</b>	<b>16</b>	<b>4</b>	<b>27</b>	<b>GHS 901,526</b>

## Facilitation of External Grants Submissions

ORID facilitates the submission of grant applications to external donors such as the Wellcome Trust, National Institutes of Health (NIH), the UK Research Councils, European Union (EU), National Science Foundation (NSF) and others and as such, ensures that the University of Ghana's registration in all these databases are active to enable our faculty members have constant access to various grant opportunities. ORID aims at providing support to faculty members at different stages of the grant application process through its Research Development Officers and through services provided from the Central Office.

DONOR/ SPONSOR	WEB ADDRESS	SUBMISSION/ APPROVAL STRUCTURE
 <b>National Institutes of Health</b> <small>Turning Discovery Into Health</small>	<b>National Institutes of Health (NIH)</b> (through Grants.gov, eRA commons and SAM) <a href="http://www.nih.gov/">http://www.nih.gov/</a>	By Authorized Organizational Representative (AOR)
 <b>wellcome trust</b>	<b>Wellcome Trust</b> <a href="http://www.wellcome.ac.uk/">http://www.wellcome.ac.uk/</a>	By Organizational Authorized Department (OAD)
 <b>National Science Foundation</b> <small>WHERE DISCOVERIES BEGIN</small>	<b>National Science Foundation (through Fastlane)</b> <a href="http://www.nsf.gov">www.nsf.gov</a>	By institutional Contact Person
	<b>UK Research Councils</b> (through the Joint Electronic Submission System) <a href="https://je-s.rcuk.ac.uk/JeS2WebLoginSite/Login.aspx">https://je-s.rcuk.ac.uk/JeS2WebLoginSite/Login.aspx</a>	By institutional Submitter

	<b>European Union (EU) *</b> <a href="http://ec.europa.eu/research/participants/portal/desktop/en/home.html">http://ec.europa.eu/research/participants/portal/desktop/en/home.html</a>	By Principal Investigator
	<b>WIPO Re:Search *</b> <a href="http://www.wipo.int/research/en/">http://www.wipo.int/research/en/</a>	
	<b>The Leverhulme Trust</b> <a href="https://grants.leverhulme.ac.uk/Login.aspx">https://grants.leverhulme.ac.uk/Login.aspx</a>	By Institutional Approver

## Spotlight

### PROF. JULIUS FOBIL AND COLLEAGUES AWARDED NATIONAL INSTITUTES OF HEALTH/FOGARTY INTERNATIONAL CENTER (NIH/FIC) GRANT

Professor Julius Fobil of the School of Public Health and colleagues at the University of Michigan School of Public Health (Prof. Thomas G. Robins) and McGill University (Prof. Niladri Basu) were awarded a grant of USD 3 Million by the National Institutes of Health/Fogarty International Center (NIH/FIC), a US Federal Agency in partnership with Canada's International Development Research Centre (IDRC) to implement the project titled "**1/2-The West Africa-Michigan CHARTER II for GEOHealth-Ghana**".

The project aims to build upon the long-standing, extensive Occupational and Environmental Health (OEH) research and training collaborations between academic and government partner institutions in West and Central Africa regions. The key impact that this project seeks to achieve is to sustainably enhance capacity for world-class scientific research and research training which address and inform key national and regional occupational and environmental health priorities and policies. This will be delivered mainly through

leveraging numerous existing strengths among consortium partners, including the University of Ghana, lead of linked Uo1 application, the Kwame Nkrumah University of Science and Technology (KNUST), the Ghana Ministry of Health/Ghana Health Service (MOH/GHS), and the University of Michigan (UM), to create a dynamic regional hub in environmental and occupational health.



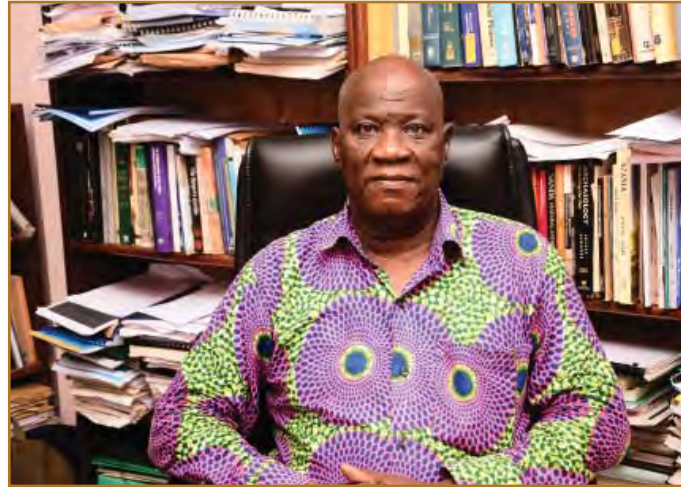
**Professor Julius Fobil**

## UG Promotes International Mobility through Research Affiliation

The University of Ghana formally hosted two Visiting Research Students from the University of Manchester, UK and University of Cergy-Pontoise, France, at the Departments of Archaeology & Heritage Studies and Political Science respectively. These visits fall under the UG Research Affiliation Programme, a programme that offers mentorship, research networking and collaborative opportunities. Applications to be a visiting research student at UG are received all year round and normally take about a month to process. The fee which is approved by the University is pro-rated against the duration of stay in 3 month blocks.

A key component of this programme is the role of the mentor in the affiliation process. Successful applicants are assigned a mentor who will provide them guidance and support for their research work or the duration of their stay at UG.

Faculty members in any subject area/ discipline interested in serving as mentors to visiting research students may contact ORID by email at [orid-researchadmin@ug.edu.gh](mailto:orid-researchadmin@ug.edu.gh)



**Professor Benjamin Kankpeyeng**

Through the UG Research Affiliation Programme Professor Kankpeyeng and Dr. Samuel N. Nkumba of the Department of Archaeology and Heritage Studies, University of Ghana jointly carry out excavations on the mound with Professor Timothy Insoll of the University of Manchester and Dr. Natalie Swanepoel of the University of South Africa. It also offered students from both the University of Ghana and the University of Manchester the opportunity to participate as participants in Field School under the project.

Don't be left out! Get research experience in Ghana by applying to the University of Ghana as a Visiting Research Student.



### DO YOU WANT TO BUILD YOUR RESEARCH EXPERIENCE IN GHANA?

Apply to be a UG Visiting Research Student/ Research Affiliate

- Express interest in the programme by contacting ORID via [orid-researchadmin@ug.edu.gh](mailto:orid-researchadmin@ug.edu.gh)
- Download and complete the **APPLICATION FORM** and submit with requisite documents via email to [orid-researchadmin@ug.edu.gh](mailto:orid-researchadmin@ug.edu.gh) at least one month before the intended date of commencement of the affiliation.

**ORID**

## Fox International Fellowship Programme

The Fox International Fellowship Program is a direct two-way student exchange partnership between Yale University and thirteen of the world's leading universities including the University of Ghana. The Fellowship has been established to identify and nurture graduate students who are interested in harnessing scholarly knowledge to respond to the world's most pressing challenges. The program which primarily focuses on the Humanities and Public Health is tenable at the Yale University and allows selected doctoral candidates to spend one academic year at Yale University as part of their programme. UG also hosted a Fox

Fellow from Yale University, Ms Dana Baker, who was attached to the Institute for Environment and Sanitation Studies (IESS). During the period of her fellowship at UG, Ms. Baker conducted semi-structured interviews with officials from the Forestry Commission and Wildlife Division and also had the privilege to visit natural resource reserves in various regions of Ghana and specifically, the Kyabobo national park. These visits allowed her to gain a clear understanding and view of stated policies, policy implementation as well their enforcement title of research.



# CAPACITY BUILDING

## Conference Grants

A key objective in the 2015/2016 academic year was to bring the international community to the University of Ghana and therefore special focus was given to Departments, Schools or Colleges organising international conferences, seminars and workshops. An unprecedented 15 grants were awarded to faculty members for organising conferences out of 68 total grants awarded in the year. This formed 26% of the GHS 341,608.85 awarded in the academic year.

Figure 2: Types of Conference Grants Awarded

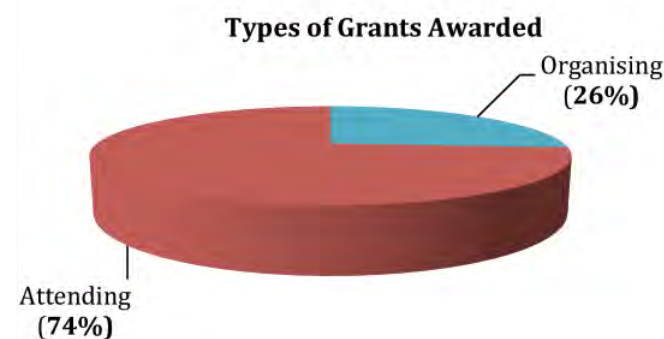
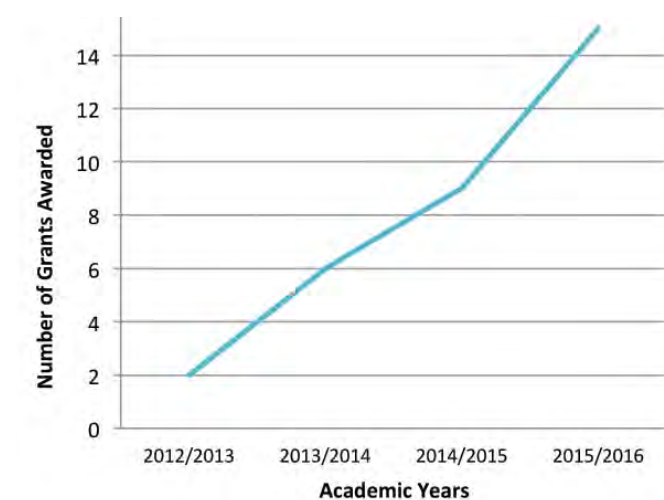
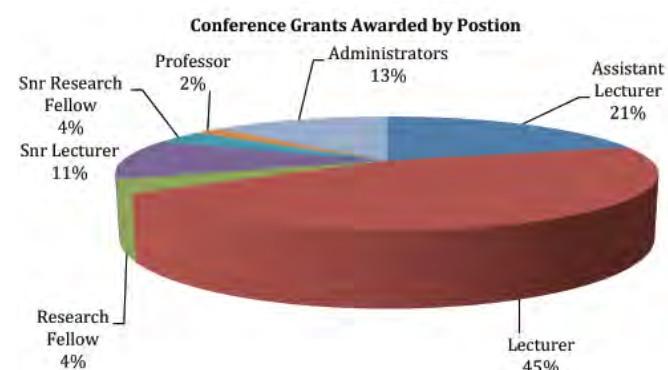


Figure 3: 4-year Trend of Grants for Organising Conferences



Out of 53 grants awarded to individuals for attending conferences, 70% was awarded to early career faculty members, while 13% was awarded to Senior Members in Administration. Additionally, 37% of grants went to female academic and non-academic staff.

Figure 4: Conference Grants Awarded by Position



# Spotlight on BSU PhD Scholarship Awardees

## Successful completion of PhD Programmes

### Enock Dankyi

#### Title of PhD thesis:

Exposure and Fate of Neonicotinoid Insecticides in Cocoa plantations in Ghana.



#### Motivation for choosing topic:

Despite the huge volumes of insecticides, particularly neonicotinoids introduced into the Ghanaian environment through the “free cocoa mass spraying” exercise each year, knowledge of exposure of fate of these chemicals in the environment and food has been lacking.

The choice of this PhD project was to address this knowledge gap and contribute to better food and environmental sustainability by increasing the awareness of pesticide fate in the Ghanaian environment.

#### What has been your PhD journey:

My PhD journey was as challenging as fulfilling. I can recount the numerous nights I had to spend in the laboratory for less satisfactory results. In the end, it was less about the destination and more about the experience.

#### Supervisors:

- **Professor Derick Carboo**, Department of Chemistry, University of Ghana (Principal Supervisor).
- **Professor Chris Gordon**, Institute for Environment and Sanitation Studies, University of Ghana.
- **Professor Inge S. Fomsgaard**, Department of Agroecology, Aarhus University, Denmark.

#### Views concerning the BSU scholarship:

The BSU scholarship provided the platform for this great and fulfilling experience. Through this scholarship, I have had the opportunity to work and interact with some of the best experts in different fields of chemistry who have had great impact in my career in academia.

## Helena Lamptey

### Title of PhD thesis:

The impact of naturally acquired immunity and anti-malarial drugs on Plasmodium falciparum gametocytes in a malaria endemic area in Ghana.



### Supervisors:

- **Professor Isabella A. Quakyi**, Department of Biological, Environmental and Occupational Health Sciences, School of Public Health, University of Ghana (Principal Supervisor).
- **Dr. Michael Ofori**, Department of Immunology, Noguchi Memorial Institute for Medical Research, University of Ghana.
- **Dr. Michael Alifrangis**, Centre for Medical Parasitology, University of Copenhagen, Denmark

### Motivation for choosing topic:

Although malaria has declined over the years approximately 88% of all malaria morbidity and 90% of mortality occurred in Sub Saharan Africa especially among children under 5 years of age and pregnant women. The transmission of malaria which involves the gametocyte stage of the Plasmodium falciparum represents

an important stage in human/vector malaria transmission cycle and a very important target to disrupt transmission. It is largely unknown what influences the carriage of gametocytes which forms the infectious reservoir, though several factors have been proposed. Therefore, to be effective in the control and eventual elimination of malaria, there is the need to generate immuno-epidemiological data on the factors that influence gametocyte carriage in a community. This will help to understand the important role these infectious reservoirs play in malaria transmission, even at the submicroscopic level in asymptomatic infections. Knowledge of these factors would be important and provide basis for strategies aimed at blocking transmission by targeting gametocyte reservoirs within endemic communities to contribute to malaria control.

### What has been your PhD journey:

The PhD journey has exposed me to various training in proposal development, project management and implementation as well as new laboratory techniques in molecular biology, immunology and parasite cultures. Although the entire process was not devoid of challenges, the overall experience was phenomenal and it has contributed in equipping me with broad knowledge in public health and expertise in biomedical research.

### Views concerning the BSU scholarship:

The BSU scholarship was very helpful in the entire PhD process, it would have been difficult to complete successfully without the support. It offered both international and local opportunities, to learn newer techniques and to conduct part of my research in Denmark through its collaborative component. I hope the BSU scholarship concept is sustained to offer such great opportunities to prospective PhD students.

## Emilia Asuquo Udofia

### Title of PhD thesis:

A study of solid medical waste at the community level: Generation and collection in Households, among Traditional Birth Attendants and Chemical Shop Vendors and Impacts on Health.



### Supervisors:

- **Professor Julius N. Fobil**, Department of Biological, Environmental and Occupational Health Sciences, School of Public Health, University of Ghana. (Principal Supervisor).
- **Dr Gabriel Gulis**, Unit for Health Promotion Research, University of Southern Denmark, Denmark.

### Motivation for choosing topic:

The transition of healthcare to the home and community strongly suggests that solid medical waste is no longer a 'hospital affair'. Many families contribute to the healthcare of their members and in doing so, waste is generated. The hazardous properties of the waste require specific management before final disposal.

However, solid medical waste in households has not been widely studied in Africa and guidance hardly exists at household or community level. Treatment processes found in healthcare facilities cannot be conducted safely in households; and there is currently no system in place for separate collection of solid medical waste. If communities should plan to manage the waste from non-traditional sources, the quantities generated and existing disposal practices need to be known. By addressing this research gap, future policy on healthcare waste management can be enhanced to take into account contributions from the community.

### What has been your PhD journey:

The PhD program in Public Health took 4 years to complete beginning in August, 2012. Six months of course work were spent at the University of Southern Denmark (SDU), while the rest of the course work was concluded at the University of Ghana (UG) - School of Public Health. The field work was based on an exploratory, descriptive, mixed methods study. It spanned a full year, involving a questionnaire survey, a waste stream analysis, interviews and focus group discussions, as well as supervisory meetings with my academic supervisors. It was an intensive period that included several presentations of the research and receiving feedback, tool design and development, and use of some statistical software. There were also seminars which lay the foundation for the research process from proposal development, data collection and analysis to communication of results. The seminars were a collaborative effort between the Danish consortium of universities and the University of Ghana.



### Views concerning the BSU scholarship:

The BSU scholarship funded two trips (and stay) in Denmark, my research and the publication of a review paper on Solid Medical Waste Management in Africa. Travel was flawlessly facilitated by DANIDA and the Office of Research, Innovation and Development which played the key role in ensuring the smooth running of the entire PhD program between Denmark and Ghana. The academic supervisors were helpful with planning my course work and providing guidance during the fieldwork. Integration into the Danish culture and environment was facilitated by my supervisor, Dr. Gabriel Gulis, colleagues at the Unit for Health Promotion Research and the Office for International Students at SDU. The seminars on Proposal Development/Grant writing and Research Communication were useful in the design of my research and manuscript writing. The libraries at UG and SDU were very useful in compiling literature used for my review paper and thesis.

### Philip Debrah

#### Title of PhD thesis:

Improving Malaria Chemotherapy By Optimizing Drug Formulation And Assessing Drug Quality.



### Supervisors:

- **Professor Patrick F. Ayeh-Kumi**, School of Biomedical and Allied Health Sciences, University of Ghana (Principal Supervisor).
- **Dr. Henry Nettey**, Department of Pharmaceutics and Microbiology, School of Pharmacy, University of Ghana.
- **Dr. Samuel Adjei**, Department of Animal Experimentation, Noguchi Memorial Institute for Medical Research, University of Ghana.
- **Professor Eskild Petersen**, Department of Infectious Diseases, Aarhus University Hospital, Aarhus University, Denmark.

### Motivation for choosing topic:

Interactions with some clinicians who had treatment failures with use of artemether-lumefantrine (AL) in treating malaria prompted thoughts of the possible causes of these treatment failures. Ruling out non-compliance with medication and recrudescence left the option of poor gastrointestinal absorption of the drugs when taken without food as the possible culprit of the treatment failure. Exploration of literature confirmed this suspicion, and the project was conceived to produce dosage forms of artemether-lumefantrine that yield optimum gastrointestinal absorption even when they are administered without food.

### What has been your PhD journey:

The PhD journey has been a big learning experience though fraught with challenges. It started with the development of an analytical method for the simultaneous identification and quantification of Artemether-lumefantrine in

multiple dosage forms using high performance liquid chromatography (hplc). This work was carried out in Aarhus University Hospital's Department of Clinical biochemistry, Skejby in Denmark. The validated method was used to evaluate the quality of AL products sampled from the market in Accra, Ghana and the findings have been published in the American Journal of Tropical Medicine and Hygiene. A second visit to Aarhus University's Interdisciplinary Nanoscience Center (iNano), Aarhus, Denmark, was for training in nanomaterials and polymers, as well as production of nano-formulations of AL for testing in Animal models. The AL nanoparticles were used in animal studies carried out at the Mampong Center for Research into Plant Medicine, Mampong – Ghana.

Overall, the objectives of the PhD were realised and nano-formulations of AL were shown to have significant gastrointestinal absorption in fasting models compared to the conventional tablet dosage form of AL.

### Views concerning the BSU scholarship:

The BSU scholarship has been a very useful source of funding for me in this project, and I would advocate for its continuation so as to help others access funds and particularly Danish research equipment, environment and faculty in the pursuit of post graduate studies. I would however recommend that access to the approved PhD funds for students should be spread to cover the entire duration of studies, including extension periods if approved by the student's parent university.

This would ensure that students are not left stranded and without funds to complete their projects when they have to take an extension of the study period.

### Jemima Yakah

#### Title of PhD thesis:

Mechanisms and Pathways for Climate-Sensitive Transformational Change of Smallholder Agriculture in Ghana



### Supervisors:

- **Dr. Seth D. Boateng**, Department of Agricultural Extension, School of Agriculture, University of Ghana. (Principal Supervisor).
- **Professor Chris Gordon**, Institute for Environment and Sanitation Studies, University of Ghana.
- **Professor Carsten Nico Portefée Hjortsø**, Institute of Food and Resource Economics, University of Copenhagen, Denmark.

#### Motivation for choosing topic:

It is well recognised that smallholders form the backbone of agriculture in most developing countries, and in Ghana. Yet, their output has remained relatively low. Climate change could worsen yields in the coming decades. This calls for rapid transformation to protect smallholder livelihoods and improve the agricultural sector. However, how to achieve transformation is contested. What do Agricultural Extension professionals need to understand about the transformation process and how do we help smallholders transform? These are the nagging questions that ignited my passion in pursuing this PhD topic. The research findings contribute to debates on the smallholder transformational behavioural change phenomenon in the context of climate change adaptation, from the Agricultural Extension perspective.

#### What has been your PhD journey:

It has been a very interesting experience academically, professionally and personally. The coursework, field research, and inter-cultural interactions have broadened my perspectives and capabilities to contribute to national development not only as a researcher but also as an educator and potential policy maker.

#### Views concerning the BSU scholarship:

I am indebted to the generosity of the DANIDA BSU programme team at the University of Ghana and University of Copenhagen for the opportunity to pursue this PhD. I hope that the programme objectives, management and support will continue to evolve in building and strengthening African Universities and in fostering research collaborations that benefit the students and institutions involved.

## SPOTLIGHT ON UNIVERSITY OF GHANA DOCTORAL STUDENTS CONFERENCE

The Doctoral Students Research Conference was organised by the University of Ghana under the auspices of the Building Stronger Universities Phase II project funded by DANIDA. The conference was held from 5th to 6th November, 2015, to offer PhD Students in both public and private universities in Ghana the opportunity to engage in academic dialogue with peers within conference settings, to hone the skills and ability of participants to write and publish academic papers in recognised international journals and for networking.

#### The theme of the conference was "Promoting PhD Research Excellence"

As the first conference of its kind by University of Ghana, the conference attracted 312 registered participants from public and private Universities in Ghana. There were 45 oral and 34 poster presentations at the conference. The conference also attracted officials from other universities in Ghana, including the Vice Chancellors, Deans of Graduate Schools, Provosts, Professors, PhD Supervisors and the general academic community.

Topics treated at the conference, delivered by both Local and international speakers include:

- The PhD Journey: What Does It Entail (Ghana Experience);
- The PhD Journey: What Does It Entail (Danish Experience);
- Welcoming and taking good care of the new PhD student - experiences from the PhD programme;
- PhD Student and Supervisor- a good cooperation will be fruitful for the output;

- Thesis Examiners: Who Are They? How Are They Selected? What Do They Expect From PhD Students?
- Authorship Issues Arising From Publishing Your PhD Thesis;
- How To Publish From Your PhD Thesis.

Oral and Poster presentations were from students in all disciplines.

Important points emanating from the conference include the following;

- Investing in PhD Education: The need to invest in PhD research as a country. Universities in Ghana should take advantage of the development of the national forty (40) year plan and ensure research is prominent in the agenda.
- Research Ethics: PhD students must ensure that ethical standards (including issues of Plagiarism) are adhered to in the conduct of their research.
- Authorship: The need for PhD students to discuss authorship issues with their supervisors from the onset of the research.
- Dedication to work: Participants were inspired to be dedicated to their studies and research to achieve the desired results and become excellent researchers in future.
- Collegiality: The need for faculty to be collegial with their PhD Students.
- Research Relevance: The need for PhD research to add to existing body of knowledge in the study field/discipline and be relevant to society.



Awards for best oral presentation and best poster presentation were given to Mr Ernest Agyemang and Mr Francis Hasford, respectively, both from the University of Ghana.

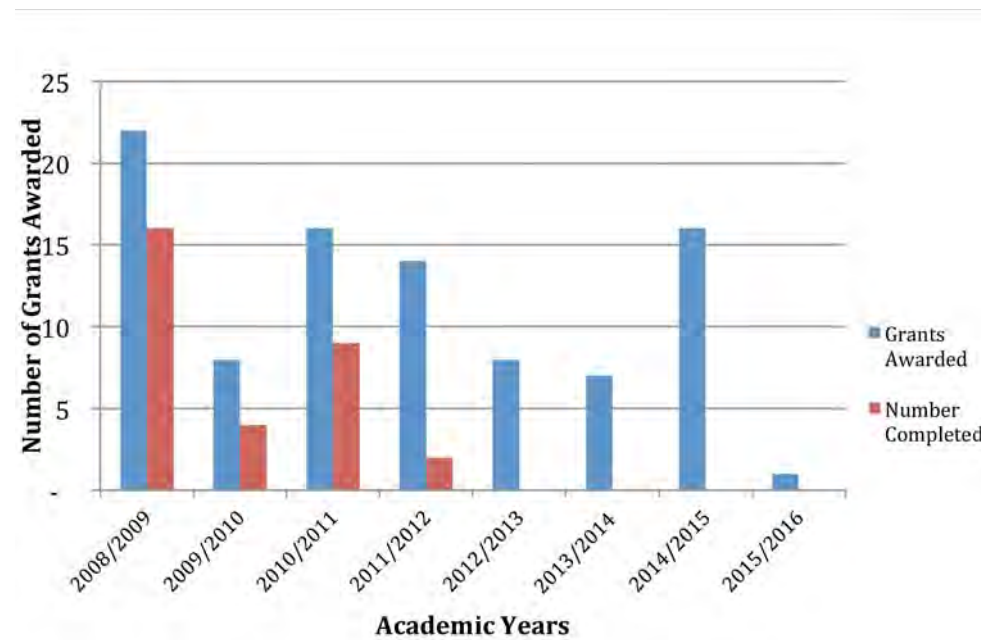
The very fruitful and successful conference ended with calls from both participants and the University officials such as the Pro-Vice Chancellor (RID), University of Ghana and other participating universities, for institutionalisation of the conference. Considering the importance of this conference, the universities were to consider raising funds to have the conference organised at least every other year to equip PhD students with the requisite knowledge and skills to enable them carryout cutting edge research in order to be competitive worldwide.

## Faculty Development Grant


The University of Ghana Faculty Development Grant for PhD research has come of age. Since its inception, the Faculty Development Grant has awarded over GHS 800,000 to 96 faculty members to enable them complete their PhD programmes. Out of this number, 50% have successfully completed their programmes. Figure 5 below shows the trend of grants awarded to build the capacity of faculty members over an 8-year period .

There has been a steady decline in applications, which has resulted in fewer awards. Out of the two grants awarded in the 2015/ 2016 academic year only one has been accessed. Nana Yaa Nyarko of the Department of Family and Consumer Sciences was awarded a grant of GHS 35,000 for her research work titled '*An Assessment of predictors of teacher-child interactions in early-childhood institutions in Ghana*'.

Figure 5: Faculty Development Grants Awarded by Academic Year



## External Grants Report

	
<b>Climate Impacts Research Capacity and Leadership Enhancement (CIRCLE)</b>	
<b>TOTAL GRANT AMOUNT</b>	<b>GBP 4.85 million</b>
<b>CURRENT STATUS</b>	The University of Ghana in the reporting hosted four (4) new Visiting Fellows under the CIRCLE project, an initiative of the Department for International Development (DFID) of the United Kingdom aimed at developing the skills and research output of early career African researchers in the field of climate change and its local impacts on development.

**TDR International Postgraduate Training Scheme (2015 – 2019)**

**CURRENT STATUS**  
The University of Ghana is hosting 5 PhD and 9 Masters students from different countries under the TDR International Postgraduate Training Scheme which focuses on the implementation research which, supports the identification of health system bottlenecks and provides approaches to address them.  
  
This Scheme is being implemented with funding from World Health Organization (WHO) in Geneva, Switzerland.

**TABLE 5: Students hosted in the 2015/2016 academic year**

No	Name	Nationality	Programme of Study
	Ms. Ruth Tenkoramaa Nyarko	Ghana	Master of Public Health
	Ms Selina Ansah-Koi	Ghana	Master of Public Health
	Dr. Vincent Ganu	Ghana	Master of Public Health
	Dr. Nouhoum Diallo	Mali	Master of Public Health
	Dr. Kingsley Ojeikere	Nigeria	Master of Public Health
	Dr. Yves Lucien Hakorimana	Rwanda	Master of Public Health
	Dr. Daniel Kiptoo	Kenya	Master of Public Health
	Dr. Frances Magdalene Tinna Sesay	Sierra Leone	Master of Public Health
	Mr. Alfred Kayira	Malawi	Master of Public Health
	Mr. Richard Akuffo	Ghana	PhD Public Health
	Mr. Gideon Kye-Duodu	Ghana	PhD Public Health
	Mr Isaac Fwemba	Zambia	PhD Public Health
	Mr Agumasie Semahegn Demisie	Ethiopia	PhD Public Health
	Ms Chinenye Afonne	Nigeria	PhD Public Health

**INTELLECTUAL PROPERTY AND TECHNOLOGY TRANSFER**

The training workshop of IP series were aimed at aimed at intensifying awareness on intellectual property rights to promote intellectual property generating activities, innovation and technology transfer by researchers at the University of Ghana.

**Training Workshop on Intellectual Property and Technology Transfer**

The TDTC with support from the Africa Regional Intellectual Property Organisation (ARIPO), organised a four-day training workshop on Intellectual Property and Technology Transfer for researchers and research support staff in the College of Basic and Applied Sciences and the College of Health Sciences. Participants were introduced to various forms of intellectual property rights, patent databases, university industry collaborations, patent application and grant processes, amongst others.



*A section of participants at the workshop*

**Intellectual Property Series**

The TDTC continued its awareness creation on intellectual property with a programme dubbed “Intellectual Property Series”. This focused on the University of Ghana’s Intellectual Property Policy; Patents and Utility Models; Industrial Designs and Trademarks; Copyrights and Related Rights. The

series was well attended by researchers, research support staff and students.

**Promoting Technology Transfer to the Private Sector**

The TDTC awarded grants to researchers to facilitate the transfer of technologies to the private sector. Funding for this initiative was provided



by the Skills Development Fund through the Ministry of Environment, Science, Technology and Innovation. The grants supported demand-driven projects that involved the identification of a business or scientific problem / need and a demonstration of how the technology-based solution addressed this problem/ need either for a specific firm, group or association.

### Industry Engagement Grants

The TDTC awarded grants to researchers to promote collaboration with the private sector.

This was to enable researchers understand the technological needs or challenges of the private sector and to offer solutions in a practice oriented manner. Four researchers received grants amounting to forty-six thousand, nine hundred and fifty-nine Ghana Cedis and fifty pesewas (GHS46,959.50). Two of these collaborations included a round table discussion and training programme organised by the TDTC in partnership with the Institute of Applied Science and Technology (IAST) of the University of Ghana.

## ETHICS AND RESEARCH DISSEMINATION

### UG inaugurates Ethics Committee for College of Health Sciences

The University of Ghana inaugurated the Ethical and Protocol Review Committee (EPRC) for the College of Health Sciences which is located at Korle-bu campus of the University of Ghana. The Committee will be responsible for the ethical and scientific review of all research protocols of graduate students and faculty members based at the College of Health Sciences (CHS) in Korle-Bu. its role among other things is to ensure that ethical and scientific research is in conformity with local and international principles. The EPRC follows Standard Operating Procedures (SOP) with clearly spelt out terms of reference, membership, meetings and criteria for protocol reviews.

Utilisation Action Plan, two consultative meetings were held at ORID; the first one was organised for some selected faculty members and Research Development Officers while the final one was for Deans and Director. The aim for the meetings was to seek buy-in from the University community before the launch of the action plan. This action plan forms part of the DRUSSA project which aimed at promoting sustainable research uptake in 24 universities across sub-Saharan Africa. Currently, evidence abound that researchers are gradually moving away from the usual cliché of publish or perish to increasing community engagement to enable their research have direct impact on society

## EXTERNAL FUNDS

During the year under review, a total of 18 research projects with a sum of USD 2, 883, 115.20 were received through the Office of Research, Innovation and Development. The table 2 shows a breakdown of projects.

Table 2: External funds to ORID

Project Title	Principal Investigator	GRANT AMOUNT	Total BUDGET(USD)
Implementation of fluorescent thin layer chromatography method of diagnosis of Buruli Ulcer.	Dr. Richard Amewu	USD 29,879.00	29,879.00
Building Capacity to Tackle Food Security Climate Change	Prof. Yaa Ntiamao Baidu	USD 417,270.00	417,270.00
African Doctoral Academy Stellenbosch University	Prof. Yaa Ntiamao Baidu	USD 83,245.00	83,245.00
PMIL Project	Prof. Agnes Budu	USD 18,150.00	18,150.00
Evident Case Study Ghana	Dr. Esi Colecraft	EUR 36,821.95	41,285.90
Exploiting the Pathogen box	Dr. Richard Amewu	USD 30,000.00	30,000.00
Awandare RS-Pfizer Award	Dr. Gordon Awandare	GBP14,000.00	17,826.90
Reoptimisation and Reoperation of Study of Akosombo and Kpong Dams	Dr. Daniel Nukpezah	EUR 8,694.47	9,748.50
Optimisation and operation of Dams	Dr. Daniel Nukpezah	EUR 45,000	50,455.30
UNON Conference and Interpreting and Translation Programmes	Prof. Nana Aba A. Amfo	USD 417,331	417,331.00
Sustainable Market Actors Responsible for Trade	Prof. Martin Oteng-Ababio	EUR 11,756.00	13,181.20
Climate Smart Cocoa System for Ghana	Dr. Kwadwo Owusu	DKK 9,990,278.00	1,505,210.00
Is Contemporary Christianity Promoting or Hindering Mental Health in Ghana	Dr. Joana Salifu Yendork	USD 36,000.00	36,000.00
Building Academic Freedom and democracy	Dr. Kwadwo Appiagyei - Atua	EUR15,000.00	16,818.40
Menstrual Hygiene Management	Dr. Edward Nanbigne	USD 89,282	89,282.00
Higher Education and Advocacy Network in Africa	Mrs. Mercy Haizel-Ashia	USD 9,450	9,450.00
Knowledge Transfer from one Generation of Experts to the Next Generation	Dr. Ewurama Dedeo Ampadu Owusu	USD 49,982.00	49,982.00
Predicting and Validating the Consequences of Insecticide Resistance on Malaria Transmission	Dr. Yaw Afranie	USD 48,000.00	48,000.00
	<b>GRAND TOTAL</b>		<b>2,883,115.20</b>

## UNIVERSITY OF GHANA WORLDWIDE UNIVERSITIES NETWORK (WUN) ACTIVITIES



The University of Ghana, in August 2015, joined the Worldwide Universities Network (WUN) as part of efforts to promote research collaborations and increase the University's visibility in the research enterprise. WUN is a leading global higher education and research network made up of 19 universities, spanning 11 countries on five continents. It is the most active global higher education and research network with 100 active research initiatives, engaging over 2,000 researchers and students collaborating on a diverse range of projects. WUN has a mission to stretch ambitions and develop the next generation of leaders through partnerships with government, international organisations and industry and aims to find solutions to some of society's most significant challenges to improve quality of life

WUN's research is focussed on four *Global Challenges*

- i. Responding to Climate Change;
- ii. Public Health (Non-communicable Disease);
- iii. Global Higher Education and Research; and
- iv. Understanding Cultures

The University of Ghana is considered a key partner for research on Africa. UG's partnership in this network has offered several unique opportunities for academics at the University of Ghana to work with faculty in other institutions within the network to

research on areas including malaria, nutrition, higher education and climate change. This has enabled UG faculty to contribute to major global and local development challenges using the collective skills of some of the world's best researchers.

Prof. Anthony Andrew Adjei of the Office of Research, Innovation and Development (ORID) is the University of Ghana's Coordinator on the network. UG is represented on two of the major research groups of WUN; the WUN Global Africa Group by Dr. Ibrahim Bedi (Department of Accounting, UGBS) and WUN Web Observatory Group by Professor Richard Boateng (Department of OMIS, UGBS).

Partnering on the network offers UG faculty with the following:

- i. Linking faculty to other researchers in the network;
- ii. The opportunity for faculty members to apply for the University of Ghana Large Multi-disciplinary Grant to collaborate with other members in the network;
- iii. Provision of advisory services; as well as
- iv. Dissemination of research and research interest to the network.

### WUN Meetings

In April 2016, the University of Ghana represented by the Vice-Chancellor Professor Ernest Aryeetey, the then in-coming Vice-chancellor Professor Ebenezer Oduro Owusu and the UG-WUN Coordinator, Professor Anthony Andrew Adjei participated in the WUN Annual General Meeting (AGM) at Maastricht University.

Following UG's membership in the network, two WUN Coordinators from University of Southampton and Bristol in May 2016, visited the University of Ghana to explore the possibility of establishing research collaborations.

## INSTITUTIONAL RESEARCH AND PLANNING OFFICE (IRPO)

The Institutional Research & Planning Office (IRPO) is in charge of institutional research and analysis as well as providing strategic planning services to senior management. Its core activities include analysing internal data on teaching, research and administration. It also collects and analyses external data to inform strategic direction of the university. The office responds to requests for data from researchers and various stakeholders including regulatory, accreditation, ranking and research institutions. The office is structured into three units, namely institutional research, institutional assessment and policy planning.

### Institutional Research

In the year under review, the Institutional Research Unit generated and submitted annual statistical reports about the university to public institutions including the Ministry of Education, National Council for Tertiary Education, and National Accreditation Board. The unit in collaboration with ORID responded to three international ranking institutions, namely Times Higher Education in the USA, and the QS Ranking in UK. These statistics contributed to university of Ghana's rankings. Within the year, the unit also responded to statistical data request from individual faculty and researchers for proposal writing and academic research.

### Institutional Assessment Unit

The Unit conducted three studies namely Students' Satisfaction Survey, Tracer study and Exit survey. The purpose of the Students' Satisfaction Survey was to help understand the experience of University of Ghana students. The random survey received responses from a total of 3,494 students. The research revealed that students were

highly satisfied with course design, instruction methodologies as well as the quality of interaction with other students. Student's satisfaction with the quality of interactions with the academic faculty and staff, quality of libraries, classrooms and IT infrastructure was rated average. However, students' satisfaction with the quality of students support services was very low. Overall, students were highly willing to recommend the University of Ghana to graduating senior high school Students. The results of the Tracer study and Exit survey are currently being finalized.

### Policy and Planning

In February 2016, the unit coordinated a Strategic Planning Implementation Workshop under the auspices of the Vice Chancellor and Registrar to build capacity and sensitise the university community towards performance for achieving research targets in line with the university's strategic plan and the world-class research intensive vision. The workshop was well attended by 150 members of the University community in senior management in charge of research, management and administration.





## FELLOWSHIP

### Postdoctoral research fellowships under the Cambridge Africa Partnership for Research Excellence (Caprex) Programme

In 2012, the University of Cambridge received funding from the Carnegie Corporation and the Isaac Newton Trust to implement the **Cambridge Africa Partnership for Research Excellence (CAPREx)** programme. The CAPREx programme is a partnership programme between the University of Cambridge UK, University of Ghana, Legon and Makerere University, Uganda and aims at building research capacity in the two African Institutions of the partnership.

The project which is currently in its second phase (2015-2018), provides support for the development of African academic research excellence through the three-way partnership aimed at promoting the recruitment and retention of the brightest academic staff at these regional hubs.

One of the major focus areas of the project is the strengthening of faculty research capacity through the provision of post-doctoral research fellowships for early and mid-career researchers at both the University of Ghana and Makerere. Selected Fellows spend up to 6 months at the University of Cambridge to work with their Cambridge collaborators on a research topic which is relevant to building the research capacity of their departments at the University of Ghana. Fellows also engage in a variety of training, seminars and networking opportunities to enhance their research links and skills.

The 4th call for applications for the postdoctoral research fellowships yielded 21 applications out of which 11 were shortlisted and 7 awards were made to the following UG faculty members to undertake specific research projects with their Cambridge-based collaborators.

**Table 3: Cambridge Africa Partnership for Research Excellence (CAPREx) Recipients**

Name of Beneficiary	Department	Project Title
Dr. Beverly Egyir	Bacteriology, NMIMR	Whole genome sequence profiling of antibiotic resistant <i>S. aureus</i> isolates from livestock in Ghana
Dr. Kwaku Kyeremeh	Chemistry	Novel marine derived actinomycetes from Ghana's Western and Volta Regional Wetlands: Genetic sequences, chemistry and biological activity profiling
Dr. Agyeman Danquah	Crop Science	Development of heat tolerant, high yielding and consumer-acceptable tomato varieties for all year-round production in Ghana'
Dr. Mary Anti Chama	Chemistry	Characterization of anti-parasitic and structural activity relationship of isolates from <i>dichapetalum albidum</i> and two <i>millettia</i> species
Dr. Angela Parry-Hanson Kunadu	Nutrition and Food Science	Investigating the prevalence and pathogenicity of <i>Listeria monocytogenes</i> strains isolated from ready-to-eat streets vended foods in Accra, Ghana
Dr. Kwabena Kan-Dapaah	Biomedical Engineering	Nanocomposite materials for theranostic biomedical applications: Fabrication, characterization and intro-vitro testing
Dr. Japheth A. Opintan	Medical Microbiology	Origin and evolution of epidemic Cholera in Ghana

### Noguchi postdoctoral fellowships

The Noguchi Memorial Institute for Medical Research (NMIMR) hosted four postdoctoral research fellows during the period.

**Table 4: Noguchi Postdoctoral Fellowships**

Name of Beneficiary	Unit	Project Title
Dr. Protus A. Tarkang	NMIMR	Application of multi-target phytotherapeutic concept in malaria drug discovery: HPLC-based activity profiling of a polyherbal product
Dr. Emmanuel Mouafo Tekwu	NMIMR	Anti-schistosomal evaluation of selected Ghanaian medicinal plants
Dr. Nfor Omarine Nlinwe	NMIMR	The effect of allelic polymorphism on malaria parasite specific <i>ex vivo</i> IFN-Gamma responses to apical membrane antigen1 in a malaria exposed population
Dr. Evelyn Yayra Bonney	NMIMR	Impact of host factors on HIV infection, disease progression and response to antiretroviral therapy

### WACCBIP-DELTAS postdoctoral fellows

WACCBIP has introduced a new postdoctoral fellowship programme as part of the Wellcome Trust Developing Excellence in Leadership Training and Science (DELTAS) project. This fellowship is aimed at recruiting young early career scientists (1-3 years post-PhD) to support the training and research activities at the Centre, while giving

the fellows the foundation to develop their independent research careers. After the first call for applications, eight postdoctoral fellowships were awarded to successful applicants. Each fellow will receive grant support of up to \$150,000.00 over three years to cover a monthly salary, research costs, and other research-related expenses.

**Table 5: Recipients of the WACCBIP-DELTAS Postdoctoral Fellowship**

Name of Beneficiary and Nationality	Department	Project Title
Dr. Yaw Aniweh; Ghana	Biochemistry, Cell and Molecular Biology	Unravelling the molecular players during Plasmodium falciparum invasion of erythrocytes
Dr. Jewelna Akorli; Ghana	Biochemistry, Cell and Molecular Biology	The role of dominant midgut bacteria isolated from Anopheles mosquitoes in Ghana in larval development and susceptibility to Plasmodium infection
Dr. Adwoa Asante-Poku Wiredu; Ghana	Biochemistry, Cell and Molecular Biology	Host susceptibility to tuberculosis (TB) in Ghana
Dr. Kolapo Oyebola; Nigeria	Medical Research Unit, Fajara, the Gambia	Genetic variations and differential immunological response to malaria chemotherapy in variably exposed West African populations
Dr. Modibo Sangare; Mali	Malaria Research and Training Centre at the University of Science, Techniques, and Technology, Bamako, Mali	Epidemiology, clinical neurophysiology, and molecular genetic studies of Autism Spectrum Disorders in Mali
Dr. Seidina A.S. Diakite; Mali	Malaria Research and Training Centre at the University of Science, Techniques, and Technology, Bamako, Mali	Genomic variation in <i>P. falciparum</i> and pharmacogenomics of antimalarial drugs in Mali
Dr. Valentina J. Ngo Bitoungui; Cameroon	University of Cape Town, South Africa	Genetic factors associated with cardiovascular diseases in Cameroonian sickle cell disease patients
Dr. Daniel Muthui Kiboi; Kenya	Kenya Medical Research Institute, Kilifi, Kenya	Validation of candidate mutations in Plasmodium for resistance to the antimalarial drugs Piperaquine and Lumefantrine

**Table 6: Recipients of other postdoctoral fellowships**

Fellowship	Name of Beneficiary	Department	Project Title/Purpose
American Council of Learned Societies (ACLS) African Humanities Program	Dr. Reginald Akuoko Duah	School of Languages	Causatives in Kwa: Form, Structure and Meaning
All Africa House Postdoctoral Fellowship	Dr. Juliana Appiah	LECIAD	Course and Syllabus development working with Prof. John Akokpari, University of Cape Town



**Dr. Samuel Aniegye Ntewusu**, a research fellow at the Institute of African Studies (IAS) of the University of Ghana won the 2016 Royal Netherlands Academy of Arts and Sciences (KNAW) Fellowship. The award is intended for top-notch researchers working outside The Netherlands to share their knowledge and experience with researchers in Dutch institutes and universities.

Dr. Ntewusu was selected as a recipient this year for his keen interest in the reinterpretation of African history. With research promoting new views on themes in his field of culture, chieftaincy and history. His book, "Settling in and Holding on: A socio-economic history of northern traders and transporters in Accra's Tudu, 1908-2008" made him a contender for the award.

His research interests are the reformulation of the field of African studies, in particular African history, on a global scale.



**Dr. Samuel Aniegye Ntewusu**

**Professor Akosua Adomako Ampofo** was awarded a Senior Fulbright Scholar-in-Residence and Visiting Professor at Concordia University, Irvine (CUI), CA. Concordia's undergraduate program is distinctive because of its nationally recognized Core Curriculum, comprised of classical liberal arts courses offered in small learning communities in linked pairs such as biology with theology, mathematics with philosophy, and history with literature. Professor Akosua Adomako Ampofo joined Concordia's faculty to help internationalize and add course content related to cultural diversity and global perspectives, specifically, to enrich the culture of the campus by increasing the African component in several core courses. In addition to guest lectures, she taught



one undergraduate course, Culture and Self, and supported the development of the Master of Arts in International Studies (MAIS) Africa program, and its first cohort of students, who spent January to June 2016 in Ghana. The year also provided her the opportunity to travel across the US and around the world as a keynote speaker, sharing her research on Black Lives and Knowledge Production.



**Professor Akosua Adomako Ampofo**

**Dr. Q̄bádélé Kambon**, a Research Fellow at the Institute of African Studies at the University of Ghana was selected as the overall winner of the 2016 UG College of Humanities Provost Publications Award (Early Career). The award is based on his Paper titled: "Theory of Endogenous and Exogenous Motivation in L2 Migration" which was published in *Per Linguam*, 31(2) 2015.

It was mentioned that his article has been noted to be a great input in the area of language teaching and learning and the work will be used by many researchers and foreign language teachers. Dr. Kambon has authored many publications and is currently working on an article entitled "Serial Verb Nominalization in Akan: The Question of Intervening Elements" with Dr. Reginald Duah and Dr. Clement Appah in which **Dr. Kambon** is the lead author.



**Dr. Q̄bádélé Kambon**

The Director of the Regional Institute for Population Studies (RIPS) of the University of Ghana (UG), Legon, Professor Samuel Nii Ardey Codjoe, has been elected as the President of the Union for African Population Studies (UAPS) for the period 2016-2019. The event took place during the closing ceremony of the 7th Africa Population Conference in Pretoria, South Africa. Professor Codjoe, who was the Vice President of the Union, succeeded Professor Jean Francois Kobiane of the University of Ouagadougou, Burkina Faso.



**Professor Samuel Nii Ardey Codjoe Elected President of the Union for African Population Studies**

UAPS is a pan-African non-profit organization established through the initiative of the United Nations Economic Commission for Africa (UNECA) by the Third General Conference of African Demographers, Statisticians and Planners held in Addis Ababa in March 1984, in order to promote the scientific study of population and application of research evidence in development planning in Africa.



## PUBLIC LECTURES

### Inaugural Lectures

**Professor Ebenezer Oduro Owusu** of the Department of Animal Biology and Conservation Science on 14th July, 2016 delivered his inaugural lecture on the topic '*Entomophobia: Are insects dictating the pace of world food insecurity?*'

In his lecture, he remarked that insects are quite remarkable creatures with about 1 million species rightly identified, while about 8 million are yet to be identified. He further explained that insects attack crops on the field and in storage and may also transmit diseases to plants. Some insects, especially the stored product pests, contaminate food with their body parts, faecal matter and webbings. These activities reduce the quality and quantity of food. Damage to crops by insects (field and stored) world-wide can be up to hundred percent in some cases. This raises serious concerns about the extent of food insecurity in the world and its associated consequences.



**Professor Ebenezer Oduro Owusu**

In his concluding remarks, he noted that insects are truly dictating the pace of world food insecurity, leaving humans with very little options to counteract their ruthless upsurge on agricultural crops.



**Professor Ama de-Graft Aikins** of the Regional Institute for Population Studies (RIPS) delivered a lecture on the topic '*Curing our ills: The psychology of chronic disease, risk, experience and care in Africa*'.



**Professor Ama de-Graft Aikins**

Millions of Ghanaians live with diabetes, hypertension, stroke, cancers and other major

chronic diseases. For each Ghanaian living with a specific condition, at least two more Ghanaians are at risk. The Ghanaian situation is mirrored in many African countries. Currently, chronic non-communicable disease (NCD) deaths in adult men and women are higher in sub-Saharan Africa than in other regions of the world. It is estimated that African NCD prevalence, morbidity and mortality rates will rise faster than rates in Asia and Latin America over the coming decades. The long term and costly nature of NCDs has major implications for individuals, communities, health systems and governments.

In her lecture, Prof. Ama de-Graft Aikins discussed the psychology of chronic disease risk, experience and care in Africa. She offered practical solutions for reducing chronic disease risk and improving the quality of long-term experience and care, drawing from concrete responses within Ghana and from countries within and outside Africa that have implemented successful NCD interventions.

**Professor Kwadwo Ansah Koram** of the Noguchi Memorial Institute for Medical Research delivered his inaugural lecture on '*Malaria elimination in Ghana: Reality or pipe dream?*'



**Professor Kwadwo Ansah Koram**

Malaria control in Ghana has its origins in the colonial administration's efforts to reduce the morbidity and mortality of its serving officers. Initial efforts were attempts to target all aspects of the life cycle and included improvement in housing such as screening, use of nets, drainage of swamps and distribution quinine among others. These measures were intensified during the Second World War to minimize the loss of manpower and equipment among the allied forces stationed in Accra.

The task of malaria elimination is not going to be an easy one. However, it must be undertaken in order that we are fully prepared to face the looming epidemic of non-communicable diseases such as diabetes, cancers and cardiovascular diseases. The resultant benefits that will accrue from malaria elimination will far outweigh the costs and therefore efforts must be made to make malaria elimination a reality and not a pipe dream.

**Professor Edward K. Quashigah** of the School of Law on **May 12, 2016** delivered his inaugural lecture on the topic '*Constitution building, constitutionalism and national values: Wither Ghana?*'

The constitutional history of Ghana is replete with evidence of executive behaviour and individual actions that do not exhibit any indication of some acceptable values in conformity with the inherent principles of the particular constitutions.

It is the proposal that there is the need for a national conference to develop a national charter on national values and how to inculcate them into our political and social psyche.



**Professor Edward K. Quashigah**

**Professor John Ofofu-Anim** of the Department of Crop Science delivered his inaugural lecture on the topic '*Feeding millions of Ghanaians: Is organic crop production answer?*'

The science of growing crops has been refined and perfected over time to accommodate the ever-increasing human population. In the early days of agriculture, crops were mostly grown organically, however with the growth in population; lesser area of land became available for crop production. Food insecurity caused by rapid population growth has resulted in the use of many synthetic chemicals and gene manipulation techniques to maximize the potential of plants. In his lecture, Prof. Ofofu-Anim discussed organic crop production and examined whether it can produce enough food to meet future demand of Ghana.



**Professor John Ofofu-Anim**



**Rev. Professor Cephas Narh Omenyo** of the Department for the Study of Religions, on **March 3, 2016** delivered a lecture on '*Contemporary African Christianity*'.



**Rev. Professor Cephas Narh Omenyo**

The lecture traversed a Eurocentric approach to African historiography, the tenacity of post-colonial African Christianity, African Christian Spirituality and African initiated Christianity, Pentecostal/Charismatic renewal, and the recent demographic shift of the centre of gravity of Christianity to the global South, particularly Africa.

On the way forward, Prof. Omenyo suggested that training should not be confined to the acquisition of academic knowledge alone, but both academic and vocational, as well as developing vernacular to be used as the medium of instruction.

**Professor Samuel Kwame Offei**, Pro-Vice-Chancellor for Academic and Student Affairs at the University of Ghana delivered his inaugural lecture on '*Managing the enemies of plants to enhance food security: Genetic improvement as a counter offensive strategy*'. In his lecture, Prof. Offei advocated increased investments in agricultural research and development by African governments.

Professor Offei described models for understanding the mechanisms of viral infections, as well as how crops can be genetically modified through traditional breeding, mutagenesis, and transgenic procedures.



**Professor Samuel Kwame Offei**

**Professor Bill Buenar Puplampu** of the Department of Organisation and Human Resource Management, on 28th January, 2016 delivered a lecture on the topic '*Towards an organisational revolution in Africa – calibrated culture, engaged leadership and structured health – musings of an organizational psychologist*'. He argued that organisations are purposive entities that go where they are directed or steered to go. Whether organisations meet their objectives, perform or are dysfunctional is a direct consequence of the human behavioural action or inaction. Prof. Puplampu focused on three key within-organisation variables: leadership, culture and structured health as tools of revolution.



**Professor Bill Buenar Puplampu**

On 5th November 2015, **Professor Samuel Agyei-Mensah** of the Department of Geography and Resource Development, delivered his inaugural lecture on the topic '*Finding space for African population health*'. In this lecture, Prof. Agyei-Mensah indicated that the concept of space in its multiple forms is central to the theoretical and methodological foundations of health and population geography. The lecture examined how space has shaped and continues to shape our understanding of population and health issues in Africa and explored the unique contribution to be derived from closer linkages between population health and spatial analysis.



**Professor Samuel Agyei-Mensah**



## Alumni Lecture

The alumni lecture was given by Dr. Anarfi Asamoah-Baah, Deputy Director-General, World Health Organization. He contrasted the proven impact and remarkable record of vaccines with the recent rise of public anxiety and misgivings worldwide. For example, for vaccines against epidemic meningitis, measles, and polio, attitudes vary from eager acceptance to serious doubts and outright refusals. The lecture explored how the potential of vaccines to do greater good can be freed from public suspicions of harm.



Dr. Anarfi Asamoah-Baah

## Vice-Chancellor's Occasional Lecture

The Vice-Chancellor's occasional lectures was delivered by Professor Manuel Elkin Patarroyo Murillo on Thursday, 31st March, 2016 at the School of Public Health Auditorium on the topic "*Immune Protection Inducing Synthetic Protein Structures (IMPIPS): The New Vaccines Development*".



Professor Manuel Elkin Patarroyo

Professor Manuel Elkin Patarroyo, a Professor of Molecular Pathology from the Universidad Nacional de Colombia and the current Director of Fundación Instituto de Inmunología de Colombia asserted that physicochemical rules must be followed for the development of fully-protective, chemically-synthesized vaccines. Most of these principles or rules for the prototype disease (malaria) have been identified and used to develop a panel of functionally-relevant, specifically modified, high activity binding peptides (mHABPs) attaching to host cells, thereby inducing sterile protective immunity in the experimental Aotus monkey model. These principles or rules have led to developing long-lasting, protection-inducing multi-epitope, multistage, minimal subunit-based, chemically-synthesized vaccines or effective immune protection-inducing, synthetic protein structures.



## RESEARCH CENTRES OF EXCELLENCE

### Trans-Disciplinary Research into Climate Change Adaptation

The Working Group of the Trans-Disciplinary Research into Climate Change Adaptation Centre of Excellence of the University of Ghana held a proposal development workshop in Ada as a step towards fulfilling its research agenda. The workshop aimed to develop several proposals for research funding in climate change adaptation and mitigation and also provided an opportunity to discuss progress in the development of a book on climate change in Ghana. Members of the group include Professor Samuel Adiku, Julius Fobil, Paul W. K. Yankson, Samuel N. A. Codjoe and Drs. Elias Ayuk, Kwadwo Owusu, Christiana Amoatey and Mr. Ezekiel Acquah.

The working group developed two proposals during the workshop: The first proposal on '*Mitigating climate change and improving the livelihoods of vulnerable communities in two agro-ecological zones of Ghana: The use of green technologies*' focused on developing structures for sustainable land use, reduction of carbon emissions in communities and access to carbon credits for improved livelihood as well as sensitization of communities on the effects of climate change on the environment. The second proposal titled '*Social and biosphere enhancement for climate change adaptation in Ghana (SBECHAM)*' has among its targets, smallholder farmers, policy makers, development partners and researchers.

The objective of the proposed project is to generate knowledge on how to enhance climate change adaptation by improving the resilience of the social and biophysical environments.

### Enhancing Food Production and Processing

The Centre of Excellence for Enhancing Food Production and Processing planned the following activities under its key areas of crop production and processing improvement, livestock production and processing systems, technologies to address post-harvest losses and food safety processes:

- Organization of a one-day workshop focusing on Enhancing Food Production and Processing Issues;
- Safe and Healthy Vegetable Production Project - Utilization of Control Environment Agriculture (EnviroDome Greenhouse Technology) for Sustainable Food Security;
- Integrated Research and Development System for Pig Breeding, Production and Processing; and,
- Set up Information and Communications Technology Systems to showcase/highlight activities of the Centre.

Three committees were set up to coordinate the implementation of these planned activities. These committees developed and submitted specific activities to be undertaken, identified persons



responsible for the different activities and the resources required.

### Development Policy, Poverty Monitoring and Evaluation

In the year under review, the Working Group organised training on managing large datasets and



Members of the UG Climate Change Working Group

### Poverty analysis

A half day workshop was organized on the 29th February, 2016 by members of the poverty analysis sub-thematic areas of the working group to discuss a research proposal on poverty dynamics, vulnerability and social protection. Two faculty members at CPCS, Professor Abena D. Oduro and Prof. Ellen Bortei-Doku Aryeetey who are members of the Working group embarked on the project *Poverty Dynamics, Vulnerability and Social Protection Gaps* under the Poverty Analysis thematic area. The project is intended to be a longitudinal study on livelihoods, poverty dynamics and vulnerability status of Ghanaians across socio-economic groups, with special reference to selected vulnerable groups within each income or expenditure quintile. The three objectives of the project are to (i) undertake analysis of poverty and vulnerability dynamics and to construct a vulnerability index for different socio-

analysis using STATA for PhD. students. Workshops were organised for two out of the five priority sub-thematic areas, namely: (i) Poverty analysis and (ii) health and social wellbeing.

economic groups; (ii) determine the social protection gap based on global social protection floor standards and Ghana's social protection policy standards and (iii) build the capacity of PhD students.

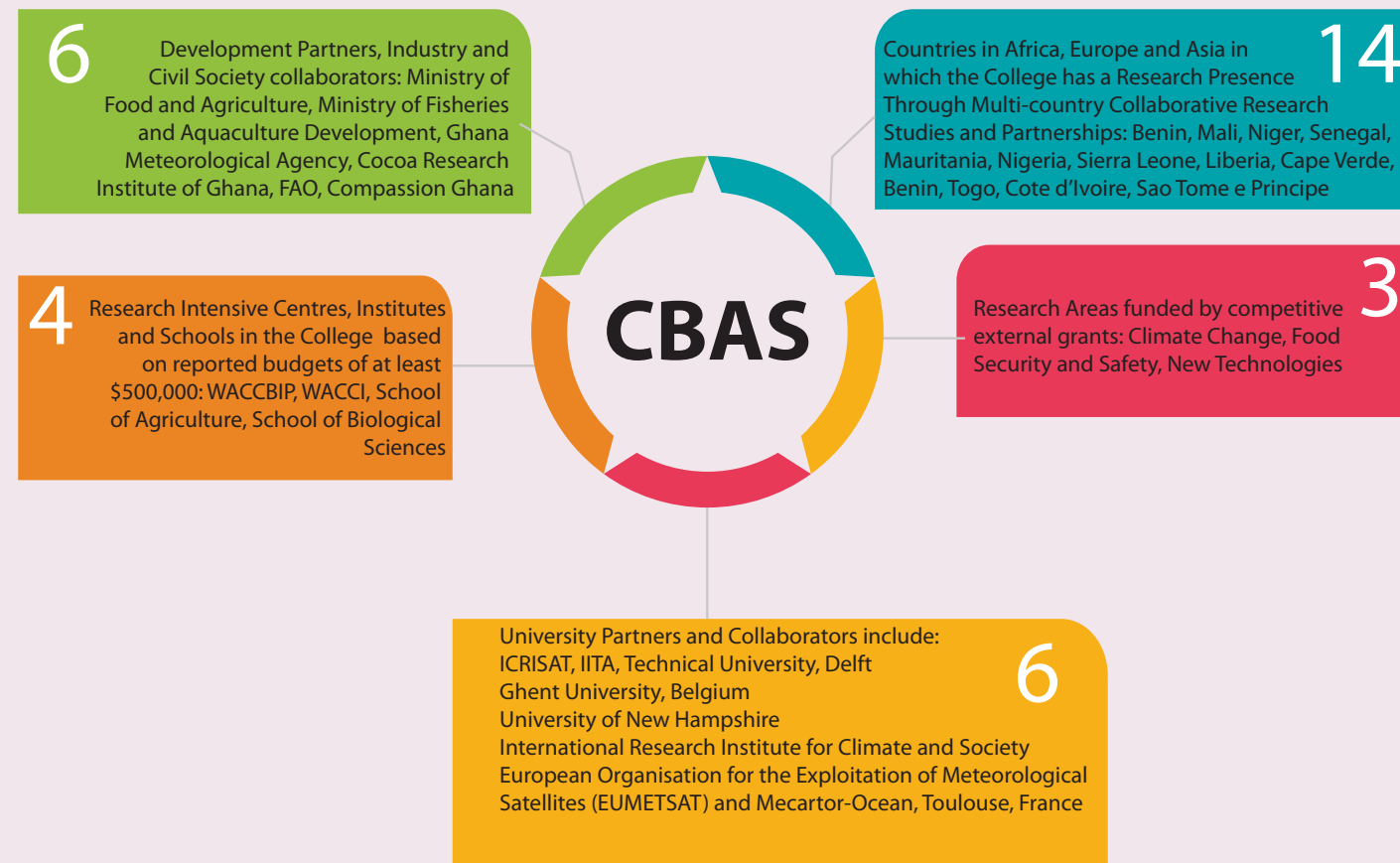
### Health and social wellbeing

A workshop was organised to validate bibliography on health and social wellbeing research conducted by University of Ghana researchers. Additionally, the workshop discussed and confirmed a plan of action on a proposed collaborative (implementation research) project on health and social wellbeing in Ghana. The workshop was facilitated by Professor Moses Aikins (School of Public Health) and Professor Ama de-Graft Aikins (Regional Institute of Population Studies), both, members of the Working Group on Development Policy, Poverty Monitoring and Evaluation (DPPME) and leaders of the sub-thematic group.



## College of Basic and Applied Sciences

### Snapshot of Research Activities





The College continued with its aim of achieving the University's vision of becoming a research-intensive university through the intensification of research, by holding public lectures in the university and establishing an Annual Science and Development Platform (known as College of Basic and Applied Sciences–Science and Development Platform, CBAS-SDP) for faculty to showcase research findings and a forum to interact and initiate collaborative ventures with industry. We recognise and appreciate the quality of research carried out by our exceptional faculty members. Our faculty focus on intellectual issues and research challenges of national importance and we are extremely proud of their research achievements within the period under review.

**Professor Ebenezer Oduro Owusu**

*Provost, College of Basic and Applied Sciences*

**Table 7: Research Developments in the College of Basic and Applied Sciences**

Principal Investigator	Partner Institutions	Title	Amount	Funding Organisation
Prof. J. Ofori-Anim		USAID Agriculture Institutional Capacity Building Project	\$2,900,000	USAID-Ghana
<b>Department of Crop Science</b>				
Dr. Dilys S. MacCarthy	ICRISAT-Mali	Climate change on West African agriculture: A regional assessment baseline study	\$89,430	DFID
	IPAR-Senegal			
Dr. Dilys S. MacCarthy	Agrhyment-Niger	Capacitating African smallholders with climate advisories and insurance development: Weather index-based crop insurance services to smallholders	\$30,300	Climate Change, Agriculture and Food Security (CCFAS)
	International Research Institute for Climate and Society, Columbia University, USA			
Dr. Dilys S. MacCarthy	ICRISAT-Mali	Support to agricultural research for development of strategic crops in Africa	\$36,000	International Institute for Tropical Agriculture (IITA)
	African Development Bank			African Development Bank

<b>Institute of Environment and Sanitation Studies</b>				
Professor Chris Gordon		Building sustainable mountain systems in sub-sahara Africa: between communities ecosystem services, environment and health	BP 7,400	WUN Research Development Fund
<b>West African Centre for Crop Improvement</b>				
Dr. Agyeman Danquah	University of New Hampshire	Sequence the Genome of Shea	\$565,000	National Science Foundation, USA
	World Agroforestry Centre Cocoa Research Institute Ghana			
<b>Department of Nutrition and Food Science</b>				
Dr. Maame Yaakwah Blay		Enhancing quality dairy production and processing in Ghana	USD 1000,000.00	Council for Technical and Vocational Education and Training (COTVET)
<b>Department of Marine and Fisheries Sciences</b>				
Prof. Kwasi Appeaning Addo	Technical University Delft and other universities in the Netherlands	Integrated sustainable port development in Ghana within an African context	EUR700,000	Netherlands Organisation for Scientific Research (NW) WOTRO Science for global development
		Monitoring Ghanaian coastal water quality using biological indicators	EUR100,000	Volkswagen Germany

## Institute of Applied Science and Technology (IAST)

During the period under review the Institute made significant achievements in its five key operational areas which are highlighted below:

- Capacity building workshop for Ghana Association of Pig Farmers.
- Dairy Technology Project
- Interaction with Fuji Oil Group, Japan, through the Institute's maiden Industry Interaction Series.
- Engagement with artisanal palm oil producers in Akyem Abodom.
- Commercialization of rice and tilapia activities at the Soil and Irrigation Research Centre in partnership with JICA.
- Skills training for women in food processing.
- Food value chain workshop.

### Food Processing, Packaging and Agri-Business

The Institute held eight (8) major interactions which impacted the research and development activities of over 400 internal and external stakeholders. Some of the specific activities that were undertaken include:

- Research needs assessment for Organic Vegetable Farmers in Ghana.





**Institute of Applied Science and Technology holds an interactive meeting with National Board for Small Scale Industries**

### Infrastructure, Water and Sanitation

In the area of Infrastructure, Water and Sanitation, the Institute undertook a preliminary study on water plants on the Lower Volta and their alternative uses. The study was commissioned by the Hitachi Group, Japan and executed with collaborators from the Institute of Environment and Sanitation Studies and the Department of Agricultural Engineering.

### Energy, Climate Change, Natural Resource Management and Sustainable Exploitation

In the 2015/2016 academic year, the Institute engaged with the Petroleum Commission, Ghana National Petroleum Corporation, Ghana Oil and Gas for Inclusive Growth, Kosmos Energy and Strategic Power Solutions from the Oil and Gas and Energy Sectors. The outcome of these engagements includes the potential for future contract research, scheduled roundtable discussions and

public lectures. Major recommendations that were articulated during these interactions are documented below:

- Industry participation in the teaching of courses related to oil and gas to ensure local industry experience is integrated in case studies.
- Development of curricula targeted at the oil and gas sector with industry insights from practitioners.
- Increase the number and frequency of short programmes and courses in Applied Sciences that can build the capacity of human resource in the oil and gas sector. Particularly courses from the Schools of Physical and Mathematical Sciences, the School of Engineering Sciences and the Business School.
- Supporting the faculty to attend conferences and engaging in dialogues on emerging global trends in these areas.

### Health and Traditional Medicine Development and Manufacture

The specific research outcomes focused on conservation protocols of some medicinal plants that are going extinct due to lack of conservation by Dr. Naalamle Amissah from the Department of Crop Science. Particular emphasis was placed on the conservation of *Cryptolepis sanguinolenta*, which is a local medicine used for the treatment of malaria. Participants were educated on the best way of propagating this plant to achieve high yields.

Participants were also educated on the uses and extraction of active ingredients in medicinal plant species including the diachapetalum species by Dr. Mary Chama from the Chemistry Department. The engagement targeted members of the Ghana Federation of Traditional Medicine Practitioners Associations (GHAFTRAM) and the Ghana Traditional Medicine Foundation. Experts from the School of Pharmacy, Noguchi Memorial Institute for Medical Research and the Department of Plant and Environmental Biology were also present.

### Vendor-Managed System

The Institute in collaboration with the Procurement Unit, the Finance Directorate, the University of Ghana Computing Systems and the Computer Science Department developed a Vendor Managed System to ensure prompt procurement of Chemicals, Reagents and Glassware for teaching and research

The advantage of this new system is that Departments would have the requisite supplies for research and teaching just in time without having to worry about storage modalities. Suppliers would be given a list of chemicals, reagents and glassware

they would be required to supply for an entire academic year, while the University places orders with authorization from Heads of Departments to the suppliers when the chemicals are needed by Departments.

### Institute of Environment and Sanitation Studies

#### Promoting Research into Use through Networking and Engagement (PRUNE)

The Collaborative Adaptation Research Initiative in Africa and Asia (CARIAA) aims at exploring barriers and enablers of effective adaptation strategies in climate change 'hot spots'. Among the key objectives of CARIAA is the need to ensure that results from the consortia inform and influence relevant adaptation plans, strategies, practices and policies at the national level. The CARIAA initiative has two of its four consortia in Ghana. These are the Adaptation at Scale in Semi-Arid Regions (ASSAR) and Deltas, Vulnerability and Climate Change, Migration and Adaptation (DECCMA), hosted by the Institute for Environment and Sanitation Studies (IESS) and the Regional Institute for Population Studies (RIPS). The project is being conducted in two districts - Nandom and Lawra - in the Upper West Region and within the Volta delta.

The Promoting Research into Use through Networking and Engagement (PRUNE) project is being undertaken as an additional project activity of the Country Table of the CARIAA Ghana consortia using science-based communication as a way of increasing research impact in achieving sustained adaptation to climate change. PRUNE has a holistic approach for strategic networking, knowledge sharing and dissemination of research results from the consortia to a wide range of stakeholders to impact policy decisions and adaptation options at national and regional levels.



PRUNE will help in meeting the overall objective of CARIAA in achieving an effective, widespread and sustained adaptation to climate change leading to improved wellbeing and adaptive capacities of vulnerable populations in the semi-arid and deltaic regions.

In its first phase of research activities, baseline studies by the ASSAR and DECCMA projects identified local level adaptation activities, national level policies and plans, as well as interlinking barriers and enablers for implementation.

The PRUNE initiative is funded by the UK Government's Department for International Development (DFID) and the International Development Research Centre (IDRC), Canada through the CARIAA initiative.



*Training of Field surveyors for DECCMA Work package 3 Survey (May 2016)*

### **Akosombo and Kpong Dams reoperation and reoptimisation study project: Development of medicinal herbal topical formulation with anti-Schistosoma cercarial penetration properties**

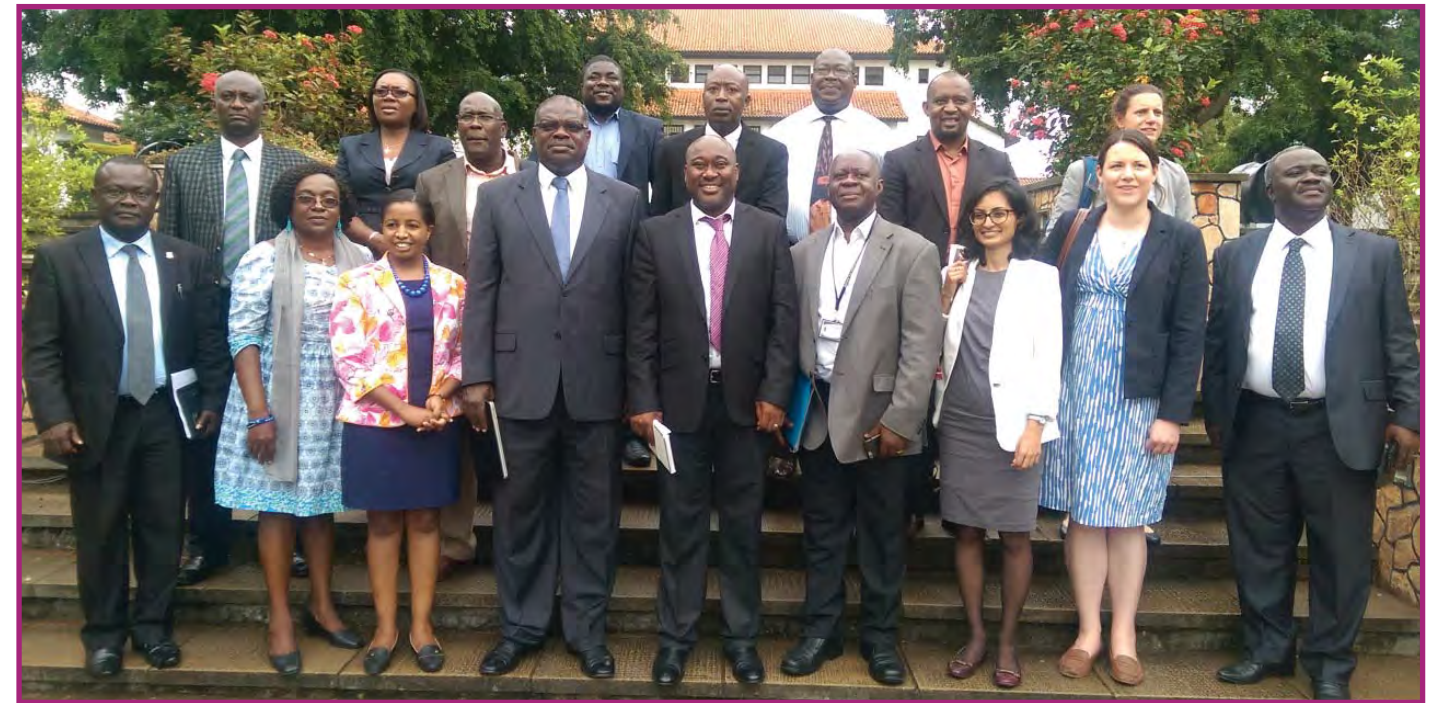
The construction of the Akosombo and Kpong dams have impacted significantly on communities downstream in terms of their health and livelihood. A key aspect of this research project is the development of medicinal herbal topical formulation with anti-*Schistosoma* cercarial penetration properties aimed at improving the health and well-being of the affected communities.

The project team comprises Professor Chris Gordon, Dr. Daniel Nukpezah, Dr. Dzidzo Yirenyah Tawiah and colleagues from other institutions within and outside the University of Ghana (Professor Kwabena Bosompem and Dr. Daniel Boamah).



*Project team on its way to Aloekpeme Island for Schistosoma snail survey*

### **West African Centre for Cell Biology of Infectious Pathogens (WACCBIP)**



*Group picture of Wellcome Trust visiting team with the Vice-Chancellor, Pro-VC (RID), Provost (CBAS), Dean (Biological Sciences), WACCBIP team and other senior University officials during the site evaluation visit that preceded the award of the DELTAS grants to WACCBIP*

### **Wellcome Trust DELTAS Africa Programme**

WACCBIP in collaboration with its strong partner network, submitted a successful bid in 2014 in response to a call for applications by Wellcome Trust's new capacity building initiative known as the Developing Excellence in Leadership and Training in Science (DELTAS) Africa programme. The initiative provides funding to support training and health research by research consortia.

In September 2015, the Centre was awarded a grant over a five year period (2016-2020) to strengthen research in the areas of human genetics and host-pathogen. This fund is meant to create interactions leading to innovations in molecular diagnosis and drug development, expand research

to include non-communicable diseases, extend the regional network beyond West Africa to include East and Southern Africa, develop a post-doctoral programme for leadership development and sustaining research momentum in newly qualified PhD graduates, provide PhD fellowships for research in human genetics and host-pathogen interactions and increase quality of supervision and mentorship through a student visitor programme where students spend 6-months in UK or US institutions for experiential learning.



## West African Centre for Crop Improvement (WACCI)

### Tomato breeding project

The University of Ghana, West African Centre for Crop Improvement (WACCI) in collaboration with WIENCO and SYNGENTA initiated the tomato breeding project which is funded by GhanaVeg. The project aims to evaluate yield and fruit quality performance of some determinate Syngenta hybrid tomatoes along with popularly grown tomato varieties in three agro-ecological zones (Coastal Savanna, Transitional Zone and Guinea Savannah) in Ghana. The best hybrid varieties will be recommended to the National Variety and Technical Release Committee of the Ministry of Food and Agriculture (MoFA), for release.

**Table 8: Funding for PhD Training (WACCI)**

Donor	Purpose	Amount
USAID	Scholarships to train five PhD students in plant breeding	\$668,438
ECONET Foundation	To train PhD students in plant breeding	\$600,000
German Academic Exchange Service DAAD	Award to 13 students for PhD training.	\$577,304

## School of Agriculture

### Agriculture institutional capacity building support project

The School of Agriculture and the West Africa Centre for Crop Improvement (WACCI) received USD 2.9 million from USAID-Ghana to improve higher education in agricultural research and innovation. The 'Agriculture Institutional Capacity Building Support Project (SOA-CaBP)' is a five-year USAID funded-activity from 2015 to 2020 which is being implemented by the School of Agriculture and the West African Centre for Crop

### WACCI collaborates with international partners to sequence the genome of shea

In May, 2016 WACCI and its partners comprising the University of New Hampshire, the World Agroforestry Centre and the Cocoa Research Institute of Ghana were awarded a three-year Basic Research to Enable Agricultural Research (BREAD) - National Science Foundation (NSF), USA grant of USD 565,000 to develop the foundational resources necessary to support the strategic, long-term genome-enabled improvement of the shea crop plant. The partners on this project will use cutting-edge technologies to sequence and annotate the genome of shea and develop other genomic and genetic resources needed for accelerated improvement of shea. A Ghanaian PhD student will be trained on this project in a split-site programme with Dr. Agyemang Danquah, the WACCI lead scientist on this project as the in-country supervisor.

Improvements (WACCI), selected departments within the College of Basic and Applied Sciences and Department of Economics.

The overall goal of the project is to improve sustainable agriculture productivity and food security through the training of scientists in plant breeding, biotechnology, crop and soil science, economic policy management and business capacity building in response to the need for augmenting the human and institutional capacities

of targeted Ghanaian institutions for improving service delivery to enhance economic growth.

### Efficacy of locally produced materials as edible coating on mangoes

Dr. Gloria Essilfie of the Department of Crop Science, in collaboration with the Department of Nutrition and Food Science, received a grant to undertake research on the *Efficacy of Locally Produced Materials as Edible Coating on Mangoes*.

### Mushroom growing for sustainable



**Farmers Harvesting Mushroom**

This research project which is led by Dr. Justice Owusu-Bempah of the Department of Family and Consumer Sciences, in collaboration with Compassion Ghana, introduced members of the Adamrobe Community to the different methods of growing and preserving mushrooms, their health benefits and income generation potential. Participants were introduced to bookkeeping and basic business management.

## Soil and Irrigation Research Centre (SIREC)

### Climate change impact on West African agriculture: A regional assessment baseline study

The project is being conducted by Dr. (Mrs.) Dilys Sefakor MacCarthy in collaboration with ICRIAT - Mali, IPAR - Senegal and Agrhymet - Niger. The objectives of the project are to assess the sensitivity of current agricultural production systems to climate change, assess the benefits of adaptation in current agricultural systems, assess the impact of climate change on future agricultural production systems and assess the benefits of climate change adaptations.



**Dr. (Mrs.) Dilys Sefakor MacCarthy and Dr. Sika Gbegbebe a socio-economist with IITA (COLLABORATOR)**



Preliminary results indicates that the sensitivity of current production systems vary across farmers and depend on the type of farm management practices and soil type.

### African adaptive irrigated Sawah rice farming system in collaboration with the Ministry of Food and Agriculture

Dr. Joseph Ofori, a Research Fellow at the Soil and Irrigation Research Centre, Kpong, received a grant to provide farmers with hands-on training to develop lowland ecologies for sustainable production of rice. Small-holder farmers will be trained to manage their rice farming as a business.



*Dr. Joseph Ofori providing hands-on training to smallholder farmers on the cultivation of rice*

## Forest and Horticultural Crops Research Centre

### Envirodome greenhouse technology (envirodome ventilation series – greenhouse system)

Professor George Oduro Nkansah of the Forest and Horticultural Crops Research Centre embarked on a project to train farmers or exporters in innovative techniques that will increase yields, productivity and profits; avoid pest and diseases as occurs in the open field; extend shelf life of produce; provide safe and healthy food for the consumer and transfer the technology to other members of their association.

### Pelleted protein leaf meal (PLM) for sheep and goats



*Dr. Tsatsu Adogla-Bessa at the LIPREC farm*

This project is being conducted by Dr. Tsatsu Adogla-Bessa, a Senior Research Fellow of Livestock and Poultry Research Centre (LIPREC), in collaboration with Dr. Eric Timpong-Jones and Dr. Leonard Adjorlolo all from the same Centre. The objectives of this project are to enable easy utilisation of fodder trees: PLM brings high quality fodder trees to the doorstep of sheep and goat farmers all year round.

The introduction of PLM is expected to reduce dry season weight-loss, reduce reproductive losses and increase overall productivity in sheep and goats and dry season feed challenges result in up to 15% weight-loss and 40-60% reduction in milk production.

## School of Veterinary Medicine

### Inauguration of small animal teaching hospital

The Vice-Chancellor of the University of Ghana, Professor Ernest Aryeetey, inaugurated the physical structures of the Small Animal Teaching Hospital at the University of Ghana. The hospital building, which was completed in 2014, has consulting rooms, records, pharmacy, laboratory, and weighing and treatment areas. The Small Animal Teaching Hospital, the first to be built in Ghana, will accommodate and cater for domestic animals that are ill, diseased or injured and need special treatment and attention. Services to be provided at the hospital include emergency services, vaccine services, and surgery - castration,



spaying, tumour removal and other surgical operations.

The Hospital is dedicated to provision of exceptional patient care, serve as a referral centre

for animal owners and veterinarians, advance veterinary education and develop innovative solutions to the health problems of animals in the country.

## School of Biological Sciences

**Biofortification to produce yellow flesh cassava and related products to reduce hidden hunger and improve nutrition**



*Professor Matilda Steiner-Asiedu engages Dr. Elizabeth Parkes, Dr. Joyce Haleelogh and Ms. Sophia Dickmann in a talk on nutritional benefits of proVitamin A Cassava*

Millions of people suffer from deficiencies in micronutrients, such as vitamin A, folic acid, iodine, zinc and iron, which if absent in diet causes hidden hunger. In an attempt to surmount these micronutrients challenges and make available nutritiously enriched food accessible to all, the International Institute of Tropical Agriculture (IITA) and the University of Ghana led by Professor Matilda Steiner-Asiedu of the Department of Nutrition and Food Science and her team conducted a research intended to make

use of cassava and its related foods through the process of biofortification to produce yellow flesh cassava and other related food products. The biofortification is one of the strategies to reduce micronutrient deficiency and may be a sustainable long-term approach for providing millions of poor people in developing countries with at least a part of their micronutrient requirements. This is a new approach to reducing hidden hunger and is an agricultural investment for improving nutrition.

## Enhancing quality dairy production and processing in Ghana

The Council for Technical and Vocational Education and Training (COTVET) through the Skills Development Fund (SDF) and the University of Ghana have provided funding to Dr. Maame Yaakwah Blay Adjei and her team comprising Dr. Eric Cofie Timpong-Jones, Dr. Niilante Amissah, Dr. Angela Parry-Hanson Kunadu, Dr. Naalamle Amissah, Dr. Kofi Ajorlolo, Mrs. Mammie Hutchful Nortey and Mr. Ezekiel Acquah to establish a Technology Centre for Quality Dairy Production and Processing at the University of Ghana.

The project has taken a multidisciplinary approach in tackling the needs of the dairy industry in Ghana by tapping into expert skills of researchers from the Departments of Food Science, Crop Science, Family and Consumer Science and the Livestock and Poultry Research Centre at the University of Ghana. Work has been undertaken directly with enterprising farmers and processors to develop and establish lucrative model farms based on modern technologies and improved skills through training to demonstrate the sustainability and productiveness of the dairy industry in Ghana.

An ultra-modern microbiology laboratory has been established at the Department of Nutrition and Food Science to develop a preservation technology that can be applied by farmers for raw milk preservation. New feed supplements for dairy cattle have also been developed by the LIPREC team and a Centre for pelleted feed is underway to be completed at the LIPREC site.



*Newly established sensory laboratory*



*Newly established microbiology laboratory*



## Fish smoking systems project: the shift from traditional to FTT fish smoking in Ghana



This project is being led by **Professor Emmanuel Ohene Afoakwa** of the Department of Nutrition and Food Science in collaboration with researchers from Ghent University, Belgium and the Food and Agriculture Organization (FAO). The project seeks to investigate the different fish smoking systems used in Ghana to assess food safety and nutrition implications, and make suitable recommendations for meeting food safety and food security objectives of the United Nations

## Integrated and sustainable port development in Ghana within an African context

This three-year project is being implemented by the Department of Marine and Fisheries Sciences in collaboration with the Technical University of Delft (TU Delft) and other institutions in the Netherlands. The researchers will develop a framework and tools for designing integrated and sustainable ports in Africa in which environmental, economic and public benefits

are balanced to meet current global needs and goals for sustainable development. The project incorporates an integrated approach to port design that is stakeholder-inclusive and encompasses engineering, ecological, economic and governance aspects. The research project aims at developing 'Best practice guidelines for implementing integrated and sustainable port development in Africa' and an international 'Green ports Africa network', a community of researchers and private sector practitioners.

## Monitoring Ghanaian coastal water quality using biological indicators



**Professor Kwasi Appeaning Addo** and Dr. Lailah Gifty Akita a post-doctoral researcher, have been monitoring Ghanaian coastal water quality using biological indicators. The research uses benthic species as indicators of water quality due to their specific ecological tolerances in particular as well as their potential to archive events over long period of time. The research project aims to describe the seasonal composition and distribution of benthic assemblages in the Ghanaian coastal waters using community analytical methods, evaluate historical trends in heavy metals (cadmium, copper, mercury, zinc) using flame atomic absorption

spectrophotometry, measure polychlorinated biphenyls (water, sediment, bivalve tissue and plastic rein pellets) using gas chromatography with an electron capture detector and increase science literacy pertaining to environmental quality issues.

## Ecowas Coastal and Marine Resources Management Centre – Monitoring for Environment and Security in Africa (MESA) Project

### Saving lives of fishermen through SMS service on ocean weather conditions

Efforts to mitigate accidents at sea have led to dissemination of ocean conditions to fishermen in West Africa via SMS alerts. The service is being provided by the ECOWAS Coastal and Marine Resources Management Centre located in the University of Ghana, for fishermen in 14 countries, from Mauritania down to Nigeria, including the island states of Cape Verde and São Tomé e Príncipe. The beneficiaries of the service receive

The research project aims to bridge knowledge gaps in biodiversity of benthic invertebrates from West Africa, Ghana and develop a water quality model for ecological restoration and policy development.

daily forecasts of ocean conditions in the form of numerical indices.

The ECOWAS Marine Centre is implementing the SMS service as part of a regional project on Monitoring for Environment and Security in Africa (MESA) with funding from the European Union. After a successful pilot of the service in September, 2015 in collaboration with the Ministry for Fisheries and Aquaculture Development of Ghana and Ghana Meteorological Agency, the product was rolled out to all the 14 countries participating in the MESA project.

**ECOWAS Marine SMS Service**  
Forecasting ocean weather

Advance information on ocean weather on your mobile phone

1 → **Calm**

2 → **Rough**

3 → **Dangerous**

To receive SMS on ocean conditions please contact: **MESA** [www.ug-mesa.org](http://www.ug-mesa.org)  
0302213820/50 Ext.4982  
University of Ghana

This Service is provided with the support of the European Union

A flyer used to sensitize marine artisanal fishermen



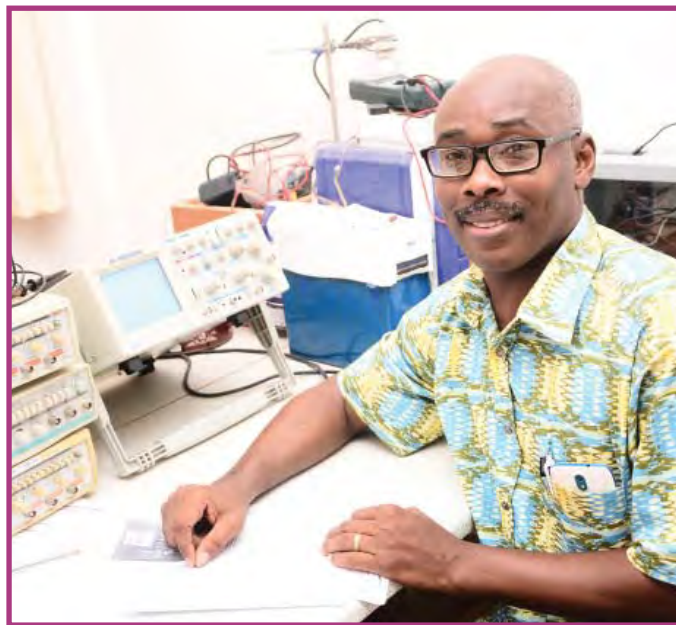
The Centre is working in close collaboration with the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) and Mecartor-Ocean based in Toulouse, France.



An opinion leader educating fellow fishermen at Kedzikorpe, Keta District, Ghana

## School of Engineering Sciences

### Paying less electricity bills through the use of efficient electric power management and control system



Dr. Godfrey Mills, Ms. Vanessa Barnes and Mr. Thomas Collins of the Computer Engineering

Department have developed a remotely controllable system for home electric power and energy monitoring, management and control to enable consumers effectively manage their consumption and power usage to avoid high cost of electricity bills.

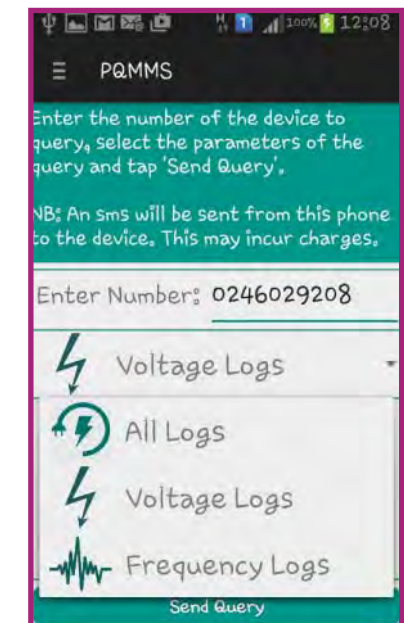


### The Home Electric Power Management and Control System

This research project offers the platform for users to provide demand-side management solutions in their homes via mobile interface software by monitoring, controlling and regulating power and energy usage in an efficient way. This translates into cost savings to the consumers, the electric power distributing company, as well as the power generators since this will lower the overall demand and the cost of investment on infrastructure.

### Device for monitoring power fluctuations to avoid damage of electrical gadgets

Power quality has always been very important, but in recent times it has become more critical to consumers because modern electronic equipment and devices used in homes and industry are very sensitive to the quality of the power supplied. Dr. Godfrey Mills and Mr. David Tamakloe have developed a device that allows end-users to monitor and measure the quality of electric power supplied at the low voltage (220V-240V) level.



### Power Fluctuations Monitor

Based on the tests, it is possible for end-users to remotely monitor and measure the power quality of their power supply using the mobile device and help take precautionary measures. The device has the potential of providing information to electric power utilities with feedback on the quality of the power supplied to consumers. It also has the benefit of providing power regulatory bodies that need reliable data for the mediation of issues relating to power quality.

### Synthesis and characterisation of tin oxide (SnO<sub>2</sub>) nanoparticles for energy storage applications

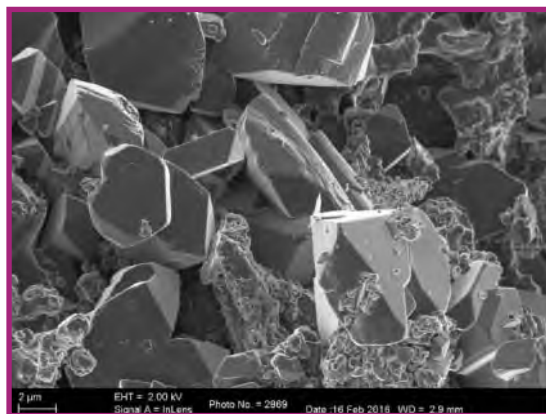
This is the first of two projects embarked on by Dr. David Dadoo-Arhin of the Department of Material



Science and Engineering which were supported by the Carnegie Corporation of New York and the IAS Regional Initiative in Science and Education through the African Materials Science and Engineering Network (AMSEN).

Electrochemical capacitors (ECs) or supercapacitors (SCs) are energy saving devices which have excellent properties that include high power density, long cycle life, low temperature sensitivity and low maintenance cost. However, these devices have lower energy densities than conventional batteries. To improve on its energy density, SnO<sub>2</sub> which is a metal oxide was considered as an electrode material because of its chemical inertness and thermal stability.

The results suggest that sodium borohydride is a better reducing agent in the synthesis of SnO<sub>2</sub> nanoparticles. Also, although the crystallite size of the SnO<sub>2</sub> particles was small, they exhibited very low pseudo capacitance as a result of the low conductivity of the nanoparticles and the lack of electrochemical active sites. To improve on the capacitance of the SnO<sub>2</sub> nanoparticles, conductive carbon can be added and composite SnO<sub>2</sub> composite materials with carbonaceous materials can also be an alternative.



SEM of the SnO<sub>2</sub> Nanoparticles



Electrochemical charge-discharge testing

### Nanostructured titanium-dioxide (TiO<sub>2</sub>): Synthesis, characterization and photoactive applications

Dye pollutants contaminate water bodies when improperly disposed into the ecosystem. Effects caused by the disposal of these dye pollutants include aesthetic pollution, eutrophication and perturbations in aquatic life.

In this project, the synthesis of porous TiO<sub>2</sub> nanostructured powders is explored by Dr. David Dodoo-Arhin via chemical means such as the Sol gel and hydrothermal techniques. The SEM micrographs obtained showed that nearly spherical TiO<sub>2</sub> nanoparticles were produced. The present results obtained showed that mesoporous spherical anatase TiO<sub>2</sub> nanoparticles with high photocatalytic activity and high surface area were synthesised. They were highly crystalline with grain size ranging from 2nm to 30nm. These synthesised TiO<sub>2</sub> nanoparticles can be applied in the degradation of wide range of dye pollutants.



Dr. David Dodoo-Arhin

### Studies and design of waste paper recycling method in University of Ghana using natural resource additives (Legon paper)

The key solution to the menace of waste generated from the high consumption of paper in the university community and the environment in general is recycling. By way of tackling this menace, Dr. Johnson Efavi, Dr. Bernard Adjei Anang and Dr. Abu Yaya have designed a flotation cell and fabricated it for waste paper recycling using local raw materials such as kaolin and cassava starch as additives. This research project when fully completed will make it possible to recycle paper on UG campus into useful paper, thereby saving the environment from waste generation of virgin paper usage. It will also reduce the cost of money spent by the university community on virgin paper.



Recycling Processes at the Laboratory

### Development of a uterine contraction monitoring system and a Bluetooth-based wireless digital stethoscope with mobile integration

Dr. Elsie Effah Kaufmann of the Department of Biomedical Engineering, in collaboration with Dr. Godfrey Mills of the Department of Computer Engineering, have worked on the development of a system to monitor uterine contractions in resource-limited settings. The project sought to develop a low-cost monitoring device that independently indicates the frequency and duration of uterine contractions in a ten-minute period and temporarily stores the data to be accessed later without the need for the physical presence of a midwife. The system also sounds an alert when there are anomalies in uterine contraction readings.

They also worked on the design of a digital wireless stethoscope with mobile integration to facilitate transmission of monitored signals through Bluetooth wireless medium to a mobile phone for evaluation and analysis by medical personnel. The integration of the mobile device allows for the storage of recorded patient data, supports teaching and learning in medical schools, and



provides visual analysis of heart sounds. Physicians may not necessarily have to be in close proximity to patients during auscultation, thus the device may help to prevent disease transmission, especially during periods of quarantine or isolation.



**Dr. Elsie Effah Kaufmann**

### Fabricated nanomaterials inhibit cancer cells and pathogenic fungal cells growth in-vitro

Dr. Elvis Tiburu, Dr. Patrick Arthur, Dr. Ali A Salifu, Dr. Michael Anim Agyei, Dr. Rebecca Yeboah, and Dr. Thomas J. Webster have researched into inhibitory effects of two low silica nanomaterials against three cervical cancer cells and two microbes (*C. albicans* and *S. cerevisiae*). They found that the materials possess dual applications by inhibiting cancer cell growth, as well as inferring antifungal activity against *C. albicans* thereby having the potential to prevent treatment interruptions, which is a major challenge for developing cancer treatment with clinical relevance.



**Dr. Elvis Tiburu**

### School of Physical and Mathematical Sciences

Some of the international collaborative researches on-going are the 'Implementation of fluorescent thin layer chromatography method for the diagnosis of Buruli ulcer' project sponsored by the World Health Organization (WHO), a collaborative research with Medicines for Malaria Venture (a Swiss foundation engaged in the development of affordable new drugs) to accelerate drug development in addressing diseases of poverty by way of discovering new leads for innovative drugs against neglected tropical diseases as well as building capacity for researchers in developing countries, and also a project to investigate the efficient conversion of photon energy to electricity by newly synthesized low bandgap semiconducting organic molecules sponsored by the Leverhulme-Royal Society Africa award and the University of Ghana Carnegie Next Generation of Academics grant.

### Pesticide contaminants in food commodities of plant origin in Accra Metropolis

The control of pesticide residues in food materials in Ghana is not properly monitored resulting in paucity of data on the dietary intake of pesticides among the Ghanaian population. This study reports, for the first time in Ghana, a three-year (2010 – 2012) surveillance on pesticide contamination of fruits and vegetables and their health implications. This research has resulted in an improved knowledge in pesticide residue levels in fruits and vegetables through the generation of comprehensive and reliable data. The data generated is expected to be drafted into appropriate policies pertaining to the environment, as well as pesticide regulation. Dr. A. Donkor of the Department of Chemistry led the multi-disciplinary research team comprising researchers from the University of Ghana (Prof. I. Asante, Prof. Robert Kingsford-Adaboh and Dr. Paul Osei-Fosu) and Prof. Brajesh Dubey of the Indian Institute of Technology, Kharagpur.

### Investigating the efficient conversion of photon energy to electricity by newly synthesised low bandgap semiconducting organic molecules

Current records show that an hour's sunshine carries enough energy to power the whole world for twenty years. Amongst the numerous technologies being utilised in harvesting this energy are solar cells of photoactive silicon, perovskites, dyes, organic and inorganic molecules and quantum dots. Current complex structure and synthesis techniques of photoactive organic

materials inspired Prof. Robert Kingsford-Adaboh and his research team, with funding from the Leverhulme-Royal Society Africa and the University of Ghana, Carnegie Next Generation of Academics grant, to explore simple chemical structures and environmentally friendly techniques to synthesise and characterise novel photoactive low bandgap semiconducting organic molecules for application in organic solar cells.

The major findings suggest that, these molecules are suitable for application in binary bulk-heterojunction organic solar cells. In addition, their theoretically optimised planar geometry indicates a potential to orderly pack in solid state, and relevance for application in ternary organic solar cell.

### Stochastic modelling of stock prices on the Ghana stock exchange

Financial models today rely on assumptions that make them sufficient in many cases. Dr. Anani Llotsi of the Department of Statistics and his team conducted a study that examined whether the behaviour of weekly and monthly returns series of some selected equities listed on Ghana Stock Exchange (GSE) can be modelled with the Geometric Brownian Motion (GBM).

The study showed that only the monthly returns of GCB and BOPP satisfied all the three assumptions of the GBM. However, the Hurst exponent estimates showed that seven returns series can be modelled by the GBM. The study indicated that the expected price of the equities modelled is close to the actual stock price realized on the Exchange even though some deviated slightly.



The study team concluded that the monthly returns of the GSE is a better data set to be used for statistical inference as compared to the weekly

returns and even though most of the returns exhibit long range dependency, the Geometric Brownian Motion can be used for some equities on the GSE.



*Boniface Yeboah Antwi AMRSC (PhD student of Professor R. Kingsford-Adaboh), purifying synthesised semiconducting organic molecules in a fume hood.*



## College of Education

### Snapshot of Research Activities

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Major College Partners and Collaborators include: Institute of Development Studies; Sussex Norwegian Business School; Green College, Oxford; Yat -Sen University, Guangzhou, China; Berlin Freie University; University of Nairobi; Daystar University, Kenya.

Countries in Africa, Europe and Asia in which the College has a research presence through multi-country collaborative research studies and partnerships: Kenya, China, Germany and the UK

4





**Rev. Professor Cephas Narh Omenyo**

*Provost, College of Education.*

The College of Education is striving to become a home to intellectually curious faculty and students whose research focus is on the use of Information Communication Technology in improving learning outcomes through teaching and educational research.

In our quest to become a world-class ICT driven research-oriented College by 2021, we launched our strategic plan during the academic year under review. Thus, our first strategic objective in the strategic plan is enhancement of faculty research output.

Faculty research during the period covers a wide range of themes such as the use of ICT education in health, food production, climate change, disease

and political/civic participation, application of e-learning in distance education as well as adult and primary school education. We hope to create a conducive environment to attract the needed foreign and local research grants for the development and promotion of research and community engagement.

## School of Information and Communication Studies

### Planning for digitisation of university libraries in Ghana: Challenges and prospects

**Professor Dadzie** in collaboration with Professor Thomas Van Der Walt of the Department of Information Science, University of South Africa, South Africa, investigated the availability of strategic plans or policies for the development of digital libraries in three selected universities in Ghana. The findings reveal that all three university libraries have strategic plans, though some are outdated, and therefore, rely on policies to ensure that digitisation activities are enhanced.



**Professor Perpetua Sekyiwa Dadzie**

The study recommended that the libraries should have up-to-date strategic plans, which include a specific mission and vision with regards to digital libraries and digitalised resources. This is one of the few articles which examine digitisation from a cross section of university libraries in Ghana.

### Exploiting the benefits of barcode technology in medical records management



**Dr. Emmanuel Adjei**

In response to challenges faced by hospitals in managing health records of patients, Dr. Emmanuel Adjei of the Department of Information Studies and Mr Prince Dela Boniand conducted research to review medical records management practices in some healthcare facilities with a view to identifying pitfalls to efficiency and

recommending remedial measures. The main objective of the study was to assist healthcare facilities to manage their medical records throughout the three stages of creation and identification, storage and retrieval, and retention and disposition. Using the barcode technology, the researchers streamlined and simplified the records management practices in health facilities in six of the ten administrative regions in Ghana.

### Digital media in Sub-Saharan Africa project



**Dr. Margaret Ivy Amoakohene** is collaborating with partners at Berlin's Freie University and Dekra Hochschule as well as at the University of Nairobi and Daystar University in Kenya on a Digital Media in Sub-Saharan Africa Project. The project aims to conduct a representative survey of political (and civic) participation over digital media with a special reference to mobile communication in Germany, Ghana and Kenya.



## The dark-side of multiplatform advertising in an emerging economy context



**Dr. Abena A. Yeboah-Banin and Dr. Margaret Ivy Amoakohene** collaborated in this research exploring possibly ignored challenges inherent in multi-platform advertising (advertising which is deployed across multiple media platforms and media vehicles). On the premise of the received wisdom that advertising in a pluralist media environment should necessarily be multi-platform to boost audience reach, the study questions whether practitioners and researchers may not be acting oblivious of its “dark sides”. The study engages the experiences of advertisers, advertising practitioners and audiences to understand the challenges they have encountered in the past when developing and implementing multi-platform advertising campaigns. Importantly, the study also explores remedies to these challenges as a means to being able to proffer relevant suggestions to the industry. Findings suggest that multi-platform advertising suffers from cross platform message integration

challenges and high costs. Critically, the study also finds that, in the context of Ghana’s developing economy, multi-platform advertising is also plagued by difficulties in evaluating the relative contributions of the various media deployed. Recommendations include the use of brand manuals to harmonise message properties across media platforms, and the deployment of advertiser-owned systems of campaign-to-campaign evaluation.

## Women’s radio history in Ghana



**Sarah Akrofi-Quarcoo’s** research explored the historical trajectory of Ghanaian women’s relationship with radio. The study argued that post-colonial Ghanaian women appropriated radio, a primary tool of domesticity and transformed it into a resource to negotiate more equitable gender relationships and women’s integration in the “modern” state, Ghana. The research makes three original inputs to media and communication history (an otherwise unexplored area of media

research) and Ghanaian women’s historiography by documenting women’s contributions to the development of radio broadcasting in Ghana; the history of women radio programmes – the “Women’s Radio Magazines” and the trajectory of women’s employment in broadcasting showing key female pioneers in diverse areas of radio work.

## School of Continuing and Distance Education

### Issues of women’s political participation and decision-making in local governance: Perspectives from the Central Region of Ghana

Professor Michael Tagoe and Ms. Ellen Abakah use feminist theory of the marginalisation of women in politics in general and local government in particular to explain why rural women continue to be marginalised in local government in Ghana.



**Ms. Ellen Abakah and Professor Tagoe Michael Ayitey**

Findings suggest that although women participate in voting during district assembly elections and are very active in voluntary associations where majority of them exhibit their leadership skills, they are marginalised in local governance politics. Their leadership qualities have not been translated into leadership opportunities in local governance because of factors such as patriarchy, poverty, lack of access to financial resources, and illiteracy. The study recommends that more attention should be paid to providing training at the grassroots level using women’s voluntary associations to improve women’s agency in contesting for, and participating in local governance elections.

### Implementation strategies of the University of Ghana Distance Education programme

Dr. Samuel Kofi Badu-Nyarko, Dr. Clara O. Benneh and Dr. Samuel Amponsah explore the implementation strategies that were used to establish the University of Ghana Distance Education Programme. Findings from the study reveal a span of twelve years between planning and implementation of the programme. Despite the delays, good communication with stakeholders and establishment of appropriate structures created conditions for successful implementation of the programme and its evolution over time. The programme is now moving into the use of web tools to meet the expectations of the current cohort of prospective university students.





**Dr. Samuel Kofi Badu-Nyarko, Dr. Clara O. Benneh and Dr. Samuel Amponsah**

### Optimising instructor-learner interaction times for effective online teaching and learning

This three-year ORID-funded study undertaken by Dr. John Boateng examines the experiences of e-learning integration into a centre-based distance education programme. The target population is male and female adult learners aged 25 and above from Ghana and other countries. The project will involve undergraduate students in their second year (level 200) and follow them through to their third year in the University of Ghana's School of Continuing and Distance Education.

### Adopting total quality management to enhance service delivery in medical records: Exploring the case of the Korle-Bu Teaching Hospital in Ghana

The purpose of this study was to determine the extent to which total quality management (TQM) initiatives can improve the quality of service delivery at the medical records unit of the Korle-Bu Teaching Hospital (KBTH) to help meet the expectations and aspirations of patients and customers of the hospital.

It was found that, although there was a fair degree of understanding of the benefits of TQM for records management service delivery, the existing values for TQM did not meet the framework of good TQM practice, principles and standards.

### Comparing media framings of climate change in developed, rapid growth and developing countries: Findings from Norway, China and Ghana

Professor Audrey Gadzekpo, in collaboration with Atle Midttun of the Norwegian Business School, Oslo, Norway, Paddy Coulter of Green College, Oxford, United Kingdom and Jin Wang of Sun Yat-Sen University, Guangzhou, China, undertook a systematic study of press articles on climate change in the rich West (Norway), the emerging East (China) and the developing South (Ghana). The aim of the research was to explore the cognitive basis for collective climate policy action. Findings relating to Ghana suggest a shift in newspaper narratives over the years from a focus on climate-victimhood towards framings suggestive of more active climate policy for development. In the study, China figures as spearheading energy efficiency and clean technologies for growth, while Norway is characterised as exporting its climate action. The research also highlights differences in sources and story types: Norway demonstrates a more enterprising style of journalism, and features academics as dominant sources of information compared to China and Ghana where most articles emanate from routinized news, mostly reporting on what public officials and political sources say.

### Responding to uncertainty: Bats and the construction of disease risk in Ghana

Professor Gadzekpo in collaboration with two colleagues – Linda Waldman and Hayley MacGregor – from the Institute of Development

Studies (IDS), Sussex, UK, are working on a new article which deals with public health and bat conservation policy in Ghana following the Ebola outbreak. This new line of enquiry is particularly

interested in how the media framed issues relating to policy, action and public attitudes on bats during the Ebola pandemic.

## School of Education and Leadership

The main research project undertaken by the school during the academic year was a collaborative research by Professor Jonathan Fletcher, Dean of the School with Stephen Rowland Baidoo of OLA College of Education, Cape Coast. The study is titled '*Pupils' understanding of multiplication and division in multiple contexts*'. The research reports on a month-long quasi-experimental study carried out in four primary schools in the Cape Coast Metropolis. The results indicate a significant difference in the performance of pupils in the experimental and control groups in their: a) ability

to distinguish between multiplication and division concepts; b) understanding of multiplication; and c) understanding of division. It is recommended that basic school classrooms should be turned into rich learning environments through the use of posters showing practical applications of key mathematical concepts and operations including multiplication and division. School-based continuing professional development programmes should develop teachers' skills in making connections between key concepts and operations in basic school mathematics.

### Corporal punishment, academic performance and self-esteem among junior high school students in Ghana

**Dr. Kingsley Nyarko** examined the effect of corporal punishment on the academic performance and self-esteem of adolescent students. A total of 188 junior high school students from diverse socio-economic backgrounds were purposively selected to participate in the study. The Williams (2000) Brief Self Esteem Inventory was used to collect data on the self-esteem and academic performance was measured using the average score of four core subjects including English Language, Mathematics, Integrated Science and Social Studies. No significant relationship was found between corporal punishment and either academic performance or self-esteem. Self-esteem and academic performance were found to be positively related,

however, there was no significant variation in self-esteem across gender.



**Dr. Kingsley Nyarko**





## College of Health Science (CHS)

### Snapshot of Research Activities



**Professor Yao Tettey**  
**Provost, College of Health Science**

Researchers at the College continued to win research grants from several funding agencies including the National Institutes of Health (NIH,

US), Bill and Melinda Gates Foundation and Wellcome Trust. Members of faculty also won fellowships and conference grants to attend international and national conferences where they made presentations. This year also saw the organisation of our Biennial Public Lecture where we disseminated research output on childhood stroke and its management. The research board has also been fully functional and facilitating research activities in the College. At CHS, we believe that scientific breakthroughs do not happen in a vacuum but through a combination of innovation and collaboration. The College is therefore in the process of forming and strengthening already existing research groups and networks to be able to engage in more multidisciplinary research and to win larger research grants. Through strengthened multilateral cooperation in research, our staffs at the CHS continue to make giant strides in addressing the health needs of people in Ghana and beyond. Below is a list of research grants and an overview of research activities taking place in our constituent Schools.

**Table 9: College of Health Science Research Funds**

Principal Investigator	Partner Institutions	Project Title	Amount	Funding Organisation
Department of Medicine and Therapeutics				
Prof. M. Lartey and Prof. R. Adanu	University of Florida	UG-Brown academic partnership for training in TB/HIV research in Ghana	\$1,400,000	National Institutes of Health (NIH) Fogarty Grant
Prof. Margaret Lartey		AITRP Training Grant	\$19,914.00	Brown University
Prof. Margaret Lartey		Pharmacokinetics in pregnant women	\$ 7,394.00	Mariam Hospital
Prof. Margaret Lartey		UG-Brown Fogarty training in HIV&TB research	\$49,950.00	Brown University
Dr. Albert Akpalu	Medical University of South Carolina University of Ibadan Komfo Anokye Teaching Hospital	SIREN stroke investigative research network SIBS stroke in Blacks study phenomics	\$47,920 per annum	NIH



Dr. T. Archampong	University of Leicester	Helicobacter pylori gastro-duodenal disease in Ghana	GHS29,969	ORID
			GHS7,500	BSU-PHH
Dr. T. Archampong	University of Cincinnati	Hepatitis B viral resistance to 3TC (Lamivudine) in Hepatitis B-HIV co-infected Ghana	\$35,000	CFAR Developmental Grant
	University of Florida School of Medicine		\$5,000	ORID
Dr. T. Archampong	Ben-Gurion University of the Negev	Rome Foundation global survey of the epidemiology of the Functional GI Disorders (FGIDs)	\$100,000	Rome Foundation Inc.
	University of North Carolina at Chapel Hill			
	Postgraduate Institute of Medical Sciences, India			
Dr. I. Dey	New York University	Arterial dysfunction related to interferon in carriers of apolipoprotein 1 in systemic lupus erythematosus patients of African origin (Ghana)	\$ 62,975	Rheumatology Research Foundation, Scientist Development
Prof. Angela Ofori-Atta	Yale University	Integrating psychotropic medications in the care of people with mental disorders in prayer camps in Ghana	GHS25,000	ORID
	Ghana Health Service		\$20,000	VA Connecticut Research and Education Fund
			GHS9,000	Enterprise Insurance Ghana (Ltd.)
Prof. Angela Ofori-Atta		Alcohol education programme for drivers in lorry parks	GHS8,443.00	Guinness Ghana Brewery Limited
Dr. C. Segbefia	Agogo Hospital Research Centre	A phase three, double-blind, randomized efficacy and safety comparison of prasugrel and placebo in paediatric patients with sickle cell disease	\$200,000	Eli Lilly and Company
Dr. C. Segbefia		Double blind randomized efficacy and safety	\$52,873.36	Quintiles Clinderpharm Pty
Prof. Julius Fobil	COPEH-WA	The West Africa-Michigan CHARTER II for GEOHealth-Ghana	\$3,000,000	NIH/FIC
	University of Michigan			IDRC, Canada
	McGill University			
Dr. R. Aryeetey	Yale University	Breastfeeding friendly country index project- In country pre-testing (Ghana)	\$15,000	Yale School of Public Health Family Larsson Rosenquist Foundation

Dr. Kwame B. Nguessan Banga		Evaluation of quantitative and qualitative aspects of mitochondrial function and its regulation.	EUR 250,000	INSERM Foundation of France European Union International Olympic Committee Foundation for Medical Research
Dr. Kwame B. Nguessan Banga		Valuation of African traditional medicine: Pharmacological and toxicological evaluation of medicinal plants used in the management of non-communicable diseases	EUR35,000	NGO PRORESMAT NGO Adequation-Germany Fonds A. BACHAU
Prof. Yaw Afrane		Impact of insecticide resistance on the behaviour and fitness of malaria vectors project	\$50,000.00	NIH
Prof. Edward Donkor Yeboah		Genetic epidemiology of prostate cancer in Africa	\$63,674.00	Stanford University
Prof. Ernestina Donkor		Grand Challenges saving brains project	\$63,890.59	Hospital for Sick Children, Canada
Prof. Edward Donkor Yeboah		Moorefield eye project	\$2,400.00	Moorfield Hospital
Prof. Biritwum		Global ageing and adult health (SAGE)	\$15,000.00	Wollongong University
Prof. Lorna Renner		leDEA West Africa-Paediatric HIV	\$9,731.20	ADERA
Prof. Clegg-Lamptey		Ghana breast health study	\$69,643.00	NIH-Federal Reserve, New York, USA
Dr. Dwomoa Adu		H3Africa	\$235,778.50	NIH through NMIMR
Prof. Alexander Doodoo		Pharmacovigilance	\$130,358.84	WHO/Bayer/ SANOFI etc
Dr. Sandra Hewlette		Oral health calibration and hypertension Study	\$7,794.00	New York University
Dr. Samuel A. Oppong		Sickle cell disease in pregnancy	\$10,000.00	Washington University, St. Louis/Vanderbilt University, USA
Dr. Charlotte Osafo		GRF-ETI Study (under H3Africa Project)	\$80,000.00	NIH thru' NMIMR
Prof. Lorna Renner		SANKOFA	\$39,879.00	Yale School of Medicine
Prof. Lorna Renner		Tumour project	\$9,495.00	Stitching Kidney
Prof. Albert G. B. Amoah		Diabetes management centre- External	\$14,000.00	Howard University
Dr. Albert Akpalu		Stroke investigation research and education	\$35,335.00	College of Medicine, University of Ibadan

## Noguchi Memorial Institute for Medical Research (NMIMR)

Noguchi Memorial Institute for Medical Research (NMIMR) with its high calibre scientists and facilities is the leading research centre in the College of Health Science. The period 2015-2016 recorded a significant increase in inflows, grant submission and contracts. Total inflows received in cedis and dollars were GHC3,855,445 and \$5,053,630.9 respectively. Looking ahead, the

Institute plans to initiate more collaboration with foreign agencies, strengthen existing relations and submit more grants to increase its revenue.

One of the major projections of the Institute is to acquire additional infrastructure and new technology to address current and emerging health threats. Plans are underway to initiate the construction of an advanced research centre for infectious diseases at NMIMR under the auspices of Japanese International Cooperation Agency (JICA).

**Table 10: Research Projects and Funding, NMIMR**

Principal Investigator	Project Title	AMOUNT	Sponsor/Donor
Prof. W. Ampofo	Abanas Scholarship	\$9,750.00	Knowledge Point 360 Group Ltd
Dr. Irene Ayi	AccessBio	\$2,099.00	Access Bio Inc.
Prof. M. Armah-Klemesu	Affordable nutrition for women	\$703,000.00	Deutsche Gesellchat Fuer Int
Prof. K.K. Addo	Afric One	\$37,917.24	CSRS
Dr. S. Dadzie	Bayer 2	\$45,935.00	Bayer Crop Science
Dr. C. Ahorlu	Bennet - electric fun	\$7,500.00	Green World Health Net
Dr. M. Ofori	Bioinformatics workshop	GHS 5,540.00	French Embassy
Prof P G Addo	Bu diagnosis	\$5,855.50	UG
Prof. M.D. Wilson	Bui blackfly	GHS46,300.00	Bui Power Authority
Nana Oye Aniapam	Cancer workshop	\$12,874.57	Health Research
Prof. W.K Ampofo	CDC	\$500,000.00	NIH
Dr. D. Arhinful	CHIG	\$25,464.71	Stitching Amsterdam Institute
Dr. C. Ahorlu	Climate change vulnerability	GHS155,510.00	WHO
Dr. Anita Ghansah	Delgeme	\$66,256.30	Cms-Delgeme
Prof. K.A. Koram & Prof. Ampofo	DHS - 7	\$2,551.00	ICF International
Dr. Boney & Prof. Ampofo	Ebola resilience programme	\$5,684.00	Royal Netherland Embassy
Prof. M.D. Wilson	ELAAGIPIS stipend	\$4,775.00	UNESCO
Prof D.A Boakye	Elimination of LF	\$50,000.00	WHO
Dr. J. Odoom	Environmental surveillance	GHS57,800	WHO
Prof. Ben Gyan	EPC MAL	\$101,078.00	The Joan and Sanford Well Med. College
Prof W. Ampofo	FHI 360	GHS6,429.00	Family Heath Int. Ghana Office
Prof. D. Doodoo	Functional immunogenetic	\$246,475.92	Danida Fellowship
Prof. Armar-Klemesu	GAIN	\$40,348.00	The Global Alliance
Dr. G. Egbi	GEGBI Nestle Foundation	\$5,011.00	Nestle Etude
Dr. G. Awandare	GENINVADE	\$ 9,439.50	London School of Hygiene
Prof. K. Nyarko	Genomic centre	\$ 45,000.00	H3 Africa Kidney

Dr. D. Arhinful	GLOBALMED	\$55,283.42	GLOBALMED
Dr. J.A.M. Brandful	H3 AFRICA Bionet	\$29,439.99	University of Cape Town
Dr. D. Adu	H3AFRICA	\$998,400.00	NIH
Prof. K.M. Bosompem	Home grown sch. Feeding-impact	\$30,054.59	ISSER
Prof. K.M. Bosompem	Homegrown	\$162,182.49	Imperial College
Prof. M.D. Wilson	Hookworm	\$16,000.00	NIH
Prof. W. Ampofo	IAEA workshop	\$5,299.00	UNDP
Dr. Anita Ghansah	Impact of distinct eco impact of seasonality and vector	\$70,000.00	NIH
Prof. K.A Koram	Impact of distinct eco impact of seasonality and vector	\$109,100.60	Univ. of. Chicago
Dr. Anita Ghansah	Impact of distinct ecology	\$70,000.00	NIH
Prof. K.M. Bosompem	Improving mushroom production	\$6,716.00	Mushroom Growers & Export
Prof. K.M. Bosompem	Integrated primary prevention & chemotherapy	\$10,043.38	Trustees of Tufts College
Prof. D.A. Boakye	Leishmaniasis	\$63,328.02	CSM Intramural
Prof. M.D. Wilson	LFSCA workshop	\$33,262.00	Liverpool School of Tropical Medicine
Dr Dzedzom De Souza	Liverpool cntd/lab renovation	\$91,354.69	Liverpool School of Tropical Medicine
Dr. B ABUAKU	Malaria disease prevalence2	\$4,864.49	National Malaria Control
Dr. B ABUAKU	Malaria disease prevalence std 3	GHS278,860.00	Ghana Health Service
Prof. K Bosompem	Malaria in pregnancy	GHS78,000.00	SPH
Dr. M Ofori	Mavareca	\$155,949.00	Regional Hovedstaden
Prof. William Ampofo	MIL -MIL	\$37,715.01	Us Naval Med.
Prof. M. D. Wilson	More house g&j	\$39,915.00	Morehouse Sch. Med
Dr. Asamoah Kusi	NAMRU 3	\$2,870.00	US Naval Med.
Dr. D. Arhinful	New born care	\$94,576.90	General Hospital Corporation
Prof. M. D. Wilson	Nih hokworm	\$140,000.00	NIH
Dr. S. Dadzie	NIRMOP	GHS216,365.03	Abt Associates
Dr. S. DADZIE	NIRMOP	\$700.00	Vestergaard
Dr. S. Dadzie	NIRMOP	\$3,132.00	Bayer
Prof. D. A. Boakye	Noval point of care	\$29,710.35	The Henry M Jackson Fnd
Prof. K. Bosompem	PARAF RELACS	\$2,150.20	Relacs
Dr. Michael Ofori	Peers ird	GHS4,906.25	W/A Centre for Cell
Dr. L. Amoah	PFS48/45-MTBI	\$2,538.04	Lolaya University
Dr. Linda E Amoah	Plasmodium falciparum gametocytogen	\$40,000	The Henry M Jackson Fnd
Dr. L. Amoah	Plasmodium falciparum gametocytogenesis	\$39,212.00	Loyola University
Dr. S. Dadzie	PMI/RTI 2	GHS146,475.59	Abt Associates
Prof. Daniel Boakye	Point of care	\$9,903.65	The Henry M Jackson Fnd
Dr. J.S. Barnor	Polio	GHS314,600.81	WHO
Prof. K. Koram	Post Ebola resilience	\$365,746.23	KIT



Prof. K. Koram	Postdoc	\$516,484.00	Bill & Melinda Gates
Nana Oye Aniapam	Regional biosafety workshop	\$13,957.96	ASI Miro
Dr. D. Arhinful	RMMTBDR	\$53,956.00	The John Hopkins University
Dr. G. Awandare	Role of CR1	\$48,630.00	NIH
Prof. G.E. Armah	Rotavirus	\$145,584.25	WHO
Prof. F. Nkrumah	Sickle cell foundation	GHS10,054.60	Sickle Cell Foundation
Dr. Regina Appiah-Opong	Sickle cell project	\$1,141.00	The Children's Hospital
Prof. D Yeboah-Manu	Sight Savers	\$ 30,396.00	Sight Savers
Prof. D. Yeboah-Manu	Stop buruli ubs optimus	\$89,175.00	UBS Optimus Foundation
Prof. G. Armah	TACMAN	\$50,000.00	National Foundation for the CTRS
Dr. G. Awandare	Targets patterns of invasion immunity	\$45,855.00	London School of Hygiene
Prof. D.A. Boakye	Task force for global health	\$62,376.45	The Task Force Global Health
Prof. W. Ampofo	Training workshop for Ebola	GHS70,320.00	WHO
Prof. G.E. Armah	Vaccine effectiveness	\$9,750.00	NIH
Prof. G. E. Armah	Vaccine efficacy	GHS26,752.50	WHO
Prof G.E. Armah	Vaccine effectiveness	\$164,620.75	National Foundation for The Ctrs
Prof. M.D. Wilson	WARIMA workshop	\$7,299.00	Prudential Bank Ltd.
Prof M.D. Wilson	WARIMA workshop	GHS5,400.00	Huge Limited
Prof. D. Yeboah-Manu	Welcome Trust	\$137,821.00	Wellcome Trust
Director	WHO - postdoc	\$486,200.00	WHO
Dr. S. Dadzie	WHO phase 3	\$21,603.00	WHO

### Affordable nutritious foods for women

The Children's Investment Fund Foundation (CIFF) conducted an evaluation on product availability and consumption in Ghana. This study focuses on fortified foods targeted at pregnant women and women of reproductive age. The products are being developed, promoted and distributed as part of the Affordable Nutritious Foods for Women (ANF4W) programme. This is a two-phase qualitative study that will be executed within a two-year period amongst pregnant women and girls and NPWL women aged 15-25 years in selected urban and rural communities in two districts in the Brong Ahafo Region and Northern Region. Dr. Armah-Klemesu is the Principal Investigator.

### Crude oil drilling: onshore environmental assessment of the Jubilee oil field of the Western Region of Ghana



The aim of the study led by **Dr. Regina Appiah Oppong** is to conduct a baseline onshore environmental assessment of crude oil pollutants

on six susceptible communities in six districts bordering the Jubilee oil field in the Western Region of Ghana. Some of the collaborating units on the project are School of Pharmacy, Department of Marine and Fisheries Sciences and Institute of Environmental and Sanitation Studies. The results will support the Environmental Protection Agency (EPA) not only in monitoring the impact of the jubilee oil fields surrounding communities, but will also provide a basis for similar studies in mining areas prior to the mining activity.

### Preparedness against Ebola and other emerging infectious diseases in Sierra Leone and Guinea

This project is led by Professor William Ampofo of the Department of Virology and is financed by the Dutch Government through the Royal Netherlands Embassy (RNE) in Accra with an amount of \$5684. This study intends to support Sierra Leone and Guinea through a trilateral cooperation, in strengthening their resilience and preparedness for future outbreaks.



**Professor William Ampofo**

The following three key priority areas were identified to increase preparedness: (i) community

focus in prevention and managing of infectious diseases with outbreak potentials (ii) improve laboratory testing facilities and (iii) improve medical health service provision through RBF.

### PROFILE OF EARLY CAREER RESEARCH FELLOWS



**Dr. Dzedzom de Souza**

Dr. Dzedzom de Souza is a young Research Fellow in the Parasitology. His research interests are in Lymphatic filariasis (LF), Neglected Tropical Diseases, molecular biology of disease vectors and parasites and climate change impact on vector-borne diseases. Currently, his main research focuses on understanding the transmission dynamics of LF in disease endemic communities. He has published more than 30 articles in international peer reviewed journals.



**Dr. Francis Ekow Dennis**

Dr. Francis Dennis is a Research Fellow in the Department of Electron Microscopy and Histopathology. He has a keen interest in molecular diagnostics and the epidemiology of diarrhoea-causing pathogens, especially viruses in humans and animals. His research focuses on the use of genomic epidemiological tools to answer questions of public health importance in diarrhoeal diseases, including the influences of pathogen genetic diversity on intervention strategies.

He is currently involved in a study investigating the relationship between histo-blood group antigens, rotavirus infection and serum antibody responses to rotavirus vaccine in Ghanaian children. He

is collaborating with the National Institute of Infectious Diseases, Japan, in a study that will completely describe the molecular epidemiology of viral agents of diarrhoeal disease in Ghanaian children under 5 years old, an AMED (Japan) funded grant awarded in 2015 for five years that will significantly contribute to post rotavirus vaccine monitoring efforts in Ghana. He is also working on a multicentre study that expands the current diagnostic capacity for diarrhoeal disease pathogens using a customized enteric Taqman Array Card, in collaboration with Professor Eric Houpt and his team at University of Virginia, and partners at CDC, and funded by the Bill and Melinda Gates Foundation.

## School of Medicine and Dentistry

### SIREN Stroke Investigative Research Network SIBS stroke in Blacks study phenomics

This National Institutes of Health (NIH) funded project led by Dr. Albert Akpalu and Professor Bruce Oviabe, Dr. Mayowa Owolabi, Dr. Kwamena Sagoe and Dr. Steve Sarfo is the largest study of stroke in Sub Saharan Africa to date.



**Dr. Albert Akpalu**

The objectives of the study are to evaluate the contributions of known vascular risk factors to stroke occurrence and patterns in black Africans using a case-control study in Africa and compare environmental risk factors for stroke among black Africans to a sub-cohort of black Americans from the REGARDS study, Evans County and Charleston Heart Study. The study also set out to generate comprehensive and accurate phenomic data on stroke patients and the controls in the SIREN study that can be used in the genomic project which studies the genetic risk factors for stroke (and stroke subtypes) and also to survey and elucidate the knowledge, attitude, beliefs and practices

(KABP) of Africans on stroke, stroke risk factors and genetic testing for stroke.

### Examination of co-morbid diabetes and psychological health among newly diagnosed tuberculosis patients in Ghana

The burden of both tuberculosis (TB) and diabetes mellitus (DM) in developing countries including Ghana is high; and often, the two co-exist and impact on each other. Dr. Ernest Yorke and his team set out to determine the prevalence of impaired fasting glucose, glucose intolerance and diabetes as well as the burden of psychological problems among newly diagnosed smear positive tuberculosis patients and to determine whether there are any differences in sputum conversion rate between smear positive TB patients with dysglycaemia and those without. The study also set out to determine whether there are any differences in the pattern and severity of psychological and cognitive problems at the end of intensive phase (2 months) and at completion of treatment (6 months) compared to baseline (diagnosis).



**Dr. Vincent Boima**

The research will provide information on whether routine screening for diabetes and assessment for psychological problems should be done for



all newly diagnosed tuberculosis patients. The collaborators on the project are Dr. Vincent Boima, Dr. Yacoba Atiase, Dr. Josephine Akpalu, Dr. Audrey Forson, Dr. Dzifa Dey, Prof. Charles Mate-Kole and Dr. Alfred Yawson.

### Helicobacter pylori gastro-duodenal disease in Ghana

Dr. Timothy Archampong is leading a group of researchers: Richard H. Asmah, Professor Edwin K. Wiredu, Prof. Richard K. Gyasi, Dr. Sandra Beleza and Dr. Christopher Bayliss to analyse the range of molecular strains (*vacA s/m/i* and *cagA*) and genetic sub-types of *Helicobacter pylori* prevalent in Ghanaian patients undergoing upper gastro-intestinal endoscopy for dyspeptic symptoms. This study will determine the relationship between *H. pylori* intra-host strain diversity and the degree of gastritis and peptic ulcer disease in Ghana.



Dr. Timothy Archampong

### Hepatitis B viral resistance to 3TC (Lamivudine) in hepatitis B-HIV co-infected Ghana

This study is investigating primary and acquired drug resistance in HBV-HIV co-infected Ghanaian patients treated with 3TC containing therapy. It will also determine the predictors for 3TC-resistant mutations in treatment-naïve and experienced HBV-HIV co-infected Ghanaian patients. Dr. Timothy Archampong is leading the team comprising Professor Margaret Lartey, Dr. Kwamena Sagoe, Dr. J. Blackard, Dr. Awe Kwara and Dr. T. Flanigan.

### Rome Foundation global survey of the epidemiology of the Functional GI Disorders (FGIDs)

The aim of the project was to assess the local, regional, and global prevalence rates for the FGIDs, assess co-morbidity rates among the FGIDs, e.g., IBS and functional dyspepsia, and assess socio-demographic, socio-cultural, psychological, psychosocial and biological factors associated with the prevalence and severity of the FGIDs. It is expected that at the end of the project it will be possible to categorize and risk stratify FGIDs based on socio-demographic, socio-cultural, psychological, psychosocial and biological factors. The project leader in Ghana is Dr. Timothy Archampong. Co-Investigators are Dr. Ami D. Sperber, Olafur S. Palsson, Shrikant I. Bangdiwala, Uday C. Ghoshal and Sanjay Gandhi.

### Arterial dysfunction related to interferon in carriers of apolipoprotein 1 in systemic lupus erythematosus patients of African origin (Ghana)

Dr. Ida Dey is leading this research which aims at defining the relationship between the candidate genotype and clinical/laboratory variables associated with endothelial dysfunction including hypertension (HTN), pulse pressure (PP), and serum biomarkers [von Willebrand factor (vWf), sE-selectin, soluble endothelial protein C receptor (sEPCR)]. This project will speak to the mechanism by which the APOL1 variant alleles cause human disease which will be a step forward in affecting patient outcomes.



Dr. Ida Dey

The long-standing history of poorer prognosis in African SLE patients makes risk stratification in this group critically important. The project will not only provide opportunities for early risk stratification and candidate biomarkers to be followed in affected patients, but may shed critical light on interpretation of the current SLE nephritis literature for patients of African ancestry. Dr. Ashira Blazer is the co-investigator.

### Public perception of kidney transplantation

Kidney transplantation is the most efficacious treatment modality for patients with End Stage Renal Disease (ESRD). The burden of ESRD is higher among people of African ancestry globally. Yet, Africans in general, are less likely to donate a kidney and less likely to receive a transplant compared to other racial/ethnic groups in western countries. The aim of the study led by Dr. Vincent Boima is to determine knowledge base and perception of Ghanaians concerning kidney transplantation. The study will inform future interventions aimed at improving knowledge on organ transplant, re-enforcing positive perceptions and aborting negative ones. The study will provide information for policy formulation towards establishment of future transplant program and help institute measures to educate the public on the importance and benefits of organ transplantation. The co-investigators are Professor Margaret Lartey, Dr. Dzifa Dey, Dr. Ernest Yorke, Miss Stella Nartey, Prof. Charles Mate-Kole, Dr. Vincent Ganu, Dr. Yvonne Okyere and Dr. Alfred Yawson.



Professor Margaret Lartey

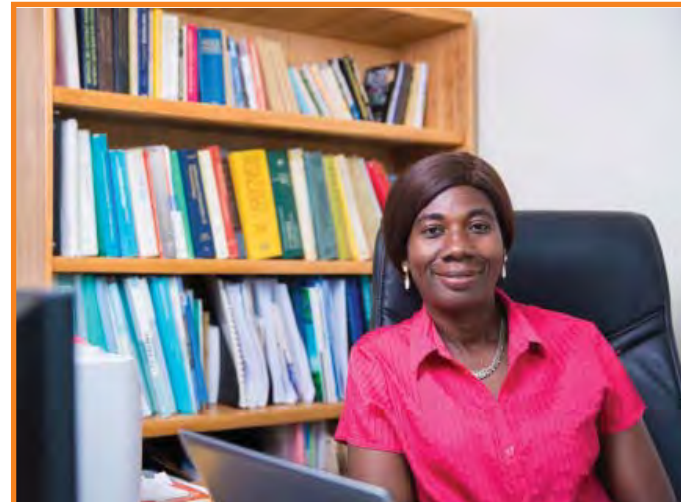
## Integrating psychotropic medications into the care of people with mental disorders in prayer camps in Ghana

The researcher led by Professor Angela L. Ofori-Atta conducted a randomized control trial (RCT) in a prayer camp, which compared standard faith-based care only with a bundled intervention of appropriate psychotropic medications, regular contact with a community mental health officer and prescribing resident in psychiatry as well as standard faith-based care. The attitudes of prayer camp staff toward people with mental illness and toward conventional medicine over the course of the intervention was also assessed. The study showed that participants on the bundled intervention saw significantly greater mental health improvements than those on only standard faith-based care. Prayer camp staff attitudes gradually changed to an acceptance of the use of medication at the prayer camp. The results led to the conclusion that psychiatric medication can be safely and correctly used in faith-based centres with visiting doctors and supportive trained health personnel. The study recommends the adoption of a collaborative model involving district health management teams (DHMTs) and faith-based healing centres. Other members of the research team were Prof. R. Rosenheck, Ms. H. Jack, Dr. F. Baning, Dr. L. Gyima, Dr. S. Addom, Dr. K. Obeng, Dr. S. Ohene, Dr. A. Sefa-Dedeh, Mrs. B. Williams, Mr. S. Asafo, Mr. E. Boachie-Yiadom and Prof. Charles C. Mate-Kole.

## Leptin links in pregnancy and foetal outcome

The aim of this study was to compare plasma leptin concentration of obese and non-obese pregnant Ghanaian women and to match it with gestational outcome. This was a prospective

cohort study conducted at the Korle-Bu Teaching Hospital. The study has provided the first leptin report on Ghanaian mothers and their babies at the Korle-Bu Teaching Hospital. It also suggests the possibility of using mid-gestational maternal plasma leptin concentration to predict time of parturition and birth weight. This could serve as a guide to clinicians in the management of pregnant women. Dr. Mercy Anna Nuamah was the Principal Investigator. Ms. Magdalene Torto, Mr. Emmanuel Korankye, Prof. Samuel A. Obed, Ms. Gloria K. Zodanu, Prof. Henry Asare-Anane, Ms. Sophia Kitcher, Dr. K. Adu-Bonsaffoh, Dr. Kwaku Asah-Opoku and Dr. Margaret Atuahene were members of the research team.



Dr. Mercy Anna Nuamah

## Steps in eliminating Rhesus disease in Ghana: Training workshop for frontline health workers at Korle-Bu Teaching Hospital.

This study is part of a multi departmental collaborative project involving the Departments of Obstetrics and Gynaecology, Child Health, Haematology and Community Health as part of an international effort to eliminate hemolytic disease of the foetus and new born, organised by the Consortium of Universal Rh disease Elimination

(CURhE). The lead investigators for the project are Professor Samuel A. Obed and Professor Bamenla O. Goka, while the co-investigators include: Dr. Amma Benneh-Akwasi Kuma, Dr. Isaac O. Koranteng, Dr. Samuel A. Oppong, Margaret Torto and Dr. Mercy A. Nuamah. The project is investigator driven with funding from the investigators with support from CURhE and EldonCard.

## Child obesity and oral health in school children study in Accra

The study was aimed at identifying the association between dietary habits and oral hygiene practices with child obesity in Accra. It was also to determine the association between child obesity and *Streptococcus mutans* infection in school children. The study results have shown no significant associations between child obesity and dental caries and gum diseases. There was however significant association observed between *streptococcal mutans* and child obesity. Dr. Thomas A. Ndanu is the leader of the team comprising Dr. Richmond Aryeetey, Professor Anna Lartey and Dr. Josephine Sackeyfio



Dr. Thomas A. Ndanu

## A phase three, double-blind, randomized efficacy and safety comparison of prasugrel and placebo in paediatric patients with sickle cell disease

The main objective of this multi-centre clinical trial was to assess the efficacy of prasugrel compared to placebo in paediatric patients with sickle cell disease as measured by the rate of vaso-occlusive crises, including acute chest syndrome.



Dr. Catherine Segbefia

The study showed no significant differences in the rate of vaso-occlusive crises between prasugrel and placebo groups and no significant difference between prasugrel and placebo regarding safety end points. This is the first multinational, interventional trial of children with sickle cell anaemia. Dr. Catherine Segbefia led the implementation of this project.

## School of Public Health

### The West Africa-Michigan CHARTER II for GEOHealth-Ghana

The project aims at building upon the long-standing, extensive occupational and environmental health research and training collaborations between academic and government partner institutions in



the West and Central Africa region. The key impact that this project seeks to achieve is to sustainably enhance capacity for world-class scientific research and research training which address and inform key national and regional occupational and environmental health priorities and policies. A critical element for a truly regional strategy is to strengthen partnerships across Francophone and Anglophone countries in West Africa. This is being achieved by strategically linking with the existing West African francophone-based Community of Practice in Eco-Health for West and Central Africa (COPEH-WCA) through their Eco health Chair based at the University of Abomey-Calavi (UAC) in Benin (also involved are Burkina Faso, Côte d'Ivoire, Mali, Nigeria and Sénégal). Prof. Julius Fobil (UGSPH), Thomas G. Robins (University of Michigan School of Public Health) and Niladri Basu (McGill University) are the investigators on the project with USD 3 million funding from NIH/FIC and Canada's International Development Research Centre (IDRC)

### Breastfeeding friendly country index project- In-country pre-testing (Ghana)

The University of Ghana School of Public Health in partnership with Yale University is working with the Ghana Health Service to implement the "Breastfeeding Friendly Country Index Project (BFCI) in Ghana.



Dr. Richmond Aryeetey.

The primary aims of the BFCI project are to: develop an evidence-based metric that can help country decision makers understand the current status of their breastfeeding programmes and provide them with step-by-step criteria and examples to guide them in scaling up their breastfeeding programs. Funding of USD 15,000 was secured from the Yale School of Public Health/ Family Larsson/Rosenquist foundation by Dr. Richmond Aryeetey.

## School of Pharmacy

### Evaluation of quantitative and qualitative aspects of mitochondrial function and its regulation.

Dr. Kwame Benoit Nguessan Banga of the Department of Pharmacology and Toxicology and Dr. Renee Ventura-Clapier, Dr. Jean Lonsdorfer, Bertrand Mettauer, Dr. Eliane Lampert and Dr. Xavier Bigard developed methods and protocols for investigation into the mitochondrial function, its regulation by factors such as exercise training and its alteration by pathophysiological mechanisms or by drugs in human skeletal and cardiac muscles, as well as in animal models.



Dr. Kwame Benoit Nguessan Banga

### Valuation of African traditional medicine: Pharmacological and toxicological evaluation of medicinal plants used in the management of non-communicable diseases

Dr. Benoit Banga Nguessan of the Department of Pharmacology and Toxicology led a project that researched the efficacy and safety of some medicinal plants used to manage non-communicable diseases such as diarrhoea, hypertension, diabetes, asthma and cancer. The results were positive for the pharmacological activities investigated and could justify the folkloric use of these medicinal plants.

### In search of rapid-onset antidepressant compounds from plant sources

This research project is a continuation of a seed grant received from the University of Ghana Research Fund to screen a Ghanaian herb for antidepressant effects. The research, led by Dr. Kennedy Kwami Edem Kukuia (Department of Pharmacology & Toxicology) found that the plant possesses antidepressant potential. The total alkaloids from the plant extracts had a more rapid-onset and sustained antidepressant effect than fluoxetine and bupropion. This finding is highly significant in that delay in improvement of depression symptomatology is positively correlated with high suicidal rates.



Dr. Kennedy Kwami Edem Kukuia

### In vitro and in vivo effect of nanoparticulate formulations of antimicrobials on intracellular leishmaniasis donovani.

Dr. Henry Nettey of the Department of Pharmaceutics and Microbiology and Professor Alexander Nyarko, Dr. Nguessan Kwame Banga, Dr. Afrane and Grace Lovia Allotey-Babington all of the School of Pharmacy received funding of GHS 79,800 from the University of Ghana Research Fund to: determine the in vitro anti-microbial effect of selected anti-infectives alone or in combination on Leishmania donovani amastigotes, select and microencapsulate selected anti-infective agents in appropriate matrix, determine the in vitro antimicrobial effect of encapsulated anti-infectives on intracellular L. donovani, determine the kinetic parameters of encapsulated anti-infectives in mice and evaluate the effect of anti-infective micro/nanoparticulate formulations on leishmaniasis rat models. Investigations into the two drugs that were selected- Amodiaquine and Quinine Sulfate -suggest that they could provide alternative and inexpensive alternatives for treatment against Leishmaniasis.





**Dr. Henry Nettey**

## School of Biomedical and Allied Health Sciences

### Being and becoming an occupational therapist: perception of student OTs in Ghana

This was a three-year longitudinal study that used qualitative research methods to ascertain how occupational therapy students in Ghana develop their professional identity. Students were interviewed at the end of each year in their program. This study has had an influence on students' career decisions and their emotions and self-actualization as they mature into professionals. The study generated useful inputs for curriculum design and implementation. The principal investigator of the project is Peter O. Ndaa of the Department of Occupational Therapy.

### Steroid-induced dysglycaemia in patients with haematological disorders - A ten year review in a tertiary hospital

Dr. Yvonne Dei-Adomakoh (Department of Haematology) led a team of researchers comprising Dr. Josephine Akpalu, Dr. Alfred

Yawson, Dr. Ivy Ekem and Dr. Yacoba Atiase on this project. The objective of the project was to determine the prevalence of steroid-induced dysglycaemia (diabetes and pre-diabetes) and its associated risk factors in haematological patients on steroid based treatment at the Korle-Bu Teaching hospital. The study revealed a high incidence of steroid induced dysglycaemia (SID) among Ghanaian patients with haematological disorders on steroid based regimes. Results of this study highlight the need for routine monitoring of such patients to facilitate early detection and treatment of SID to reduce morbidity and mortality associated with SID. The researchers funded the project using their own resources.



**Dr. Yvonne Dei-Adomakoh**



## College of Humanities

### Snapshot of Research Activities

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Major University Partners and Collaborators include: University of Western Australia, University of Auckland, University of Leeds, University of Cape Town, Monash University, University of Melbourne, Pennsylvania State University, University of Sussex, University of Witwatersrand, Singapore National University, University of Dhaka, African Migration and Development Policy Centre, ILO, OECD, International Center for Living Aquatic Resources Management, Virginia Commonwealth University, University of Johannesburg, SOAS University of London, Loughborough University, University of Nottingham, Université Laval

Major Donors providing funding to multiple College units  
UNICEF, IDRC-Canada, DFID, Volkswagen

04

04

Research Intensive Centres, Institutes and Schools based on reported budgets of at least \$500,000:  
ISSER, RIPS, UGBS, School of Social Sciences



Development Partners, Industry and Civil Society collaborators:  
Ark Foundation, Ministry of Finance, IFAD, African Economic  
Research Consortium

04

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Countries in Africa and Asia in which UG has a research presence through multi-country collaborative research studies and partnerships: Burkina Faso, Cote d'Ivoire, Central African Republic, Kenya, Mali, Niger, Cambodia, Singapore, Bangladesh, Libya, South Africa, Thailand, Australia

Cross-cutting Research Areas funded by competitive external grants  
Climate Change, Gender and Women's Studies, Policy Research

03



**Professor Samuel Adjei Mensah**  
Provost, College of Humanities

Three new research centres were established during the 2015/16 academic year: the Centre for Ageing Studies, Centre for European Studies and Centre for Latin American Studies. The Centre for Urban Studies was renamed the Centre for Urban Management Studies. These centres are to promote collaborative research, establish foreign partnerships and conduct focused research.

During the period, the second international research conference of the College of Humanities was held on the theme *Promoting Humanities Research for Development in Africa*. The keynote Speaker was Professor Emmanuel Akyeampong of the Department of History, Harvard University. The conference brought together researchers from across the globe to share knowledge and find new partnerships and collaborations. The American Council of Learned Societies (ACLS) through their African Humanities Programme (AHP) provided travel grants for eight of the conference participants. Funding was also received from the Office of Research, Innovation and Development

(ORID) and UniBank, Ghana. During the conference, awards were presented to outstanding faculty members of the College in three categories: PhD students; Early Career; and Mid-career Faculty.

The College has established an endowment fund for the purpose of raising funds for faculty, student, and staff development.

**Table 11: Research Projects and Funding in the College of Humanities**

Principal Investigator	Title	Amount	Funding Organisation
<i>Centre for Social Policy Studies</i>			
Prof. A.D. Oduro	Child marriage in Ghana	\$55,028.6	World Vision, Ghana
<i>Institute for Statistical, Social and Economic Research</i>			
Prof. Felix A. Asante	Agriculture and sanitation nexus	EUR43,200.00	Bill & Melinda Gates/ Center for Development Research, Univ. of Bonn
Prof. Robert Darko Osei	Scaling up postharvest management innovations for grain legumes in Burkina Faso	\$120,000.00	AGRA
Prof. Felix Asante	Ghana home grown school feeding programme: Impact evaluation end line survey	\$197,693.09	Bill & Melinda Gates Foundation and Dubai Cares.
Prof. D. Tsikata	Land commercialization, gendered agrarian transformation and the right to food	\$449,897.00	Graduate Institute of International and Development Studies, Switzerland
Dr. Simon Bawakyillenou	Mapping incentives and investment in the agricultural sector in Ghana	£4,800.00	ODI
Prof. P. Quartey	Establishment of progress against baseline indicators to support private sector development II (SPSD II)	DKK 248,120.00	Danish Embassy
Prof. R. Darko Osei	Multi-country baseline study for the Innovation Centre for the Agricultural and Food Sector (CIAE)	\$37,001.25	GSA Consulting Group, Germany
Prof. R. Darko Osei	An evaluation of the Livelihood Empowerment against Poverty (LEAP) Programme	GHS1,098,269.50	UNICEF
Dr. I. Osei-Akoto	Assessing the role of hybrid seed technology and out-grower schemes in transforming the maize sector in Ghana	\$124,089.60	IFPRI
Prof. F. Asante	Baseline telephony consumer satisfaction survey	GHS750,000.00	National Communication Authority

Prof. R. Darko Osei	Designing and funding social protection	EUR60,000	Academy of Finland, University of Tampere, Finland
Dr. Clement Adamba	Assessing unmet needs of small merchants in adopting digital payment systems in Ghana	\$17,227.00	University of California
Dr. Simon Bawakyillenou	Check: Climate change budget and financial tracking tools – Ghana	\$29,750.00	ODI
Dr. P. Asiming	Analysing the extent and sources of productivity losses from shortages for small and medium sized enterprises	£50,226.00	International Growth Centre
Prof. F. Asante	AGRA baseline: Ghana, Burkina Faso and Mali	\$1,322,235.5	Medical Research Council, UK
Dr. Nana Akua Anyidoho	Research for Shakespeare lives in Ghana Project	GHS85,914.43	British Council, Ghana
Prof. F. Asante	Women matter: Are social health protection programmes responsive to women's healthcare needs?	£141,000.00	Medical Research Council, UK
Prof. F. Asante	Scaling up post-harvest management innovations for grain / legumes in Burkina Faso	\$120,000.00	AGRA
<i>Regional Institute for Population Studies</i>			
Dr. Delali Dovie	Managing socio-demographic change and climate induced flood risks in the Greater Accra Metropolitan Area	\$720,000.00	IDRC, Canada
<i>School of Social Sciences</i>			
Dr. Micheal Danquah	Informality and the tax gap: A case of non-farm enterprises in Ghana	£9,960.00	International Growth Centre (IGC)/ London School of Economics
Mr. Theodore Antwi Asare	Improving Food Security and Reducing Poverty through intra-regional fish trade in sub-Saharan Africa	\$43,304.00	International Center for Living Aquatic Resources Management (ICLARM)
Prof. M. Oteng-Ababio	Sustainable market actors for responsible trade	EUR2,491,210.00	European Commission, Horizon 2020
Dr. Seidu Alidu	Strengthening evidence-based policy	\$2,500.00	Institute of Development Studies
<i>University of Ghana Business School</i>			
Prof. J. Abor	Delivering inclusive financial development and growth	\$2,930,000.00	Economic and Social Research Council (ESRC) / Department for International Development (DFID)

Dr. Abdul-Gafaru Abdulai	Investigating 'pockets of effectiveness' in developing countries: a new route to building state capacity for development	£500,000.00	ESRC and DFID
Dr. Abdul-Gafaru Abdulai	The political economy of progressive export taxation in Africa and Latin America	\$10,000.00	UNU-WIDER, Helsinki
Dr. Abdul-Gafaru Abdulai	To write three (3) thematic papers on social protection in Ghana	GHS49,014.00	UNICEF
Dr. Abdul-Gafaru Abdulai	Political economy of urban governance and service delivery in Ghanaian cities	\$10,500.00	Cities Alliance

## The Institute of Statistical, Social and Economic Research (ISSER)

The Institute of Statistical, Social and Economic Research continues to play its role as a leading research think tank in Ghana. A total of 41 research projects comprising 18 new and 23 ongoing projects were undertaken during the academic year under review.

Relationships with donor partners were deepened during the year. In particular, the Alliance for a Green Revolution in Africa (AGRA) has provided the Institute the opportunity to continue to undertake international research in Niger, Burkina Faso and Mali.

### AGRA baseline studies in Ghana, Mali and Burkina Faso



**Professor Felix Asante**

ISSER in July 2016, won a competitive bid to conduct baseline studies for AGRA in Ghana, Mali and Burkina Faso. The overall purpose of these studies was to collect and analyse data on various outcome indicators to inform AGRA's management and partners on the reference situation in the intervention areas of these countries. Specifically,

information gathered from these studies were expected to be used to: (i) assist in setting appropriate targets for future interventions, and (ii) inform the strategic decisions on the design and implementation of future interventions.

The project is managed by Prof. Felix A. Asante, Prof. Robert Darko Osei and Dr. Isaac Osei-Akoto as Principal Investigators.

### Ghana home grown school feeding programme: Impact evaluation end line survey

This is a three-year impact evaluation study to assess the impact of school feeding sourced from small-holder farmers on the wellbeing of school children; their nutrition; health and education;



and the communities in which the school feeding is taking place in Ghana. This is so far, the first rigorous impact evaluation conducted on the Ghana School Feeding (GSF) programme.

The impact evaluation used data collected in panel surveys of selected schools and households in the selected districts. The baseline survey was led by NMIMR and conducted in June 2013. The end line survey completed in February 2016 was led by ISSER. The ISSER project team members are Prof. Felix Asante, Dr. Isaac Osei-Akoto and Dr. Clement Adamba.

### Check: Climate change budget and financial tracking tools – Ghana project

The Ministry of Finance, Ghana, established the Natural Resources, Environment and Climate Change (NRECC) Unit in 2010 to oversee, coordinate and manage the financing of climate change activities. However, the Unit lacks the mechanism to track the financial resources originating within the country or from external sources geared. Overseas Development Institute (ODI) and ISSER were tasked to design a national tracking tool for climate finance (including climate change budget code) that can capture relevant end-of-year outturn expenditures; develop economic and budget analysis tools for climate-related decision-making and budgetary allocation; develop the manual for the tools designed under and provide a strategy to operationalize them within the public financial management system of Ghana; and conduct at least one training on the developed tools for key government staffs identified.

### Land Concentration, Gendered Agrarian Transformation, and the Right to Food

The project applies a right to food and gender equality perspective to examining changes in food security in the wake of land commercialization in two case countries, Cambodia and Ghana. It seeks to answer three research questions: (i) What gendered changes in livelihoods arise from contemporary processes of land commercialization and how do these affect food security? (ii) How do local, national and international gendered power constellations and policies influence changes in food security? (iii) How does the promotion of gender equality and the right to food affect changes in food security?



Professor Dzodzi Tsikata

The overarching goal is to strengthen knowledge, awareness and debates about the relationship between food security, the right to food and gender equality with an eye towards empowering women and men to claim their rights and encouraging governments to create the conditions to facilitate their realization. The project will provide evidence highlighting the importance of the right to food and gender equality for food security and examine the challenges to implementing these principles. Professor Dzodzi Tsikata is the principal investigator and Dr. Fred Dzanku and Dr. Martha Awo are co-investigators on the project.

### Shakespeare lives in Ghana: Women in contemporary Ghanaian society

To commemorate the 400<sup>th</sup> anniversary of William Shakespeare death—and as part of a worldwide celebration of the Bard dubbed “Shakespeare Lives” - the British Council in Ghana commissioned a research report on the roles, representations and perceptions of women in contemporary Ghanaian Society.

The objective of the study was to examine the representation of women in literature, the media, the visual arts and popular discourses. The changing roles and participation of women in various spheres of public and private life, including in governance, business, science and education were also examined. The study relied on existing research, national statistics and newspaper reports alongside primary data from a survey and focus group discussions. Project team members were Dr. Nana Akua Anyidoho (Principal investigator),

Dr. Adobea Owusu, Dr. Ernest Appiah, Dr. Cynthia Addoquaye Tagoe, Dr. Aba Crentsil, Dr. Mawuli Adjei, Ms. Abena Yeboah Banin, Ms. Dzifa Torvikey and Dr. Joseph Frimpong.



Dr. Nana Akua Anyidoho

### Regional Institute for Population Studies (RIPS)

RIPS expanded its three research sites located in Ga – Mashie in Accra (Jamestown, Ussher Town and Agbogbloshie) under the Ashiedu-Keteke Sub-Metro district, to include seven new districts defining the Greater Accra Metropolitan Area (GAMA). In a similar vein, RIPS has expanded the number of institutional partnerships across its research focus to officially include industry partners, inter-governmental organizations, civil society groups and NGOs, private sector and public / government institutions including government ministries. These are reflected in the major research activities undertaken within the period under the following research themes:

### Managing socio-demographic change and climate induced flood risks in the Greater Accra Metropolitan Area (GAMA)

Dr Delali Dovie is the lead researcher for the ‘Managing socio-demographic change and climate induced flood risks in the Greater Accra Metropolitan Area (GAMA)’ project which is designed to improve the management of flood risks in the city of Accra towards resilience building through an integrated climate smart flood management framework and catalyse evidence-based policy action. The project findings will support Ghana’s medium term development planning, national Climate Change Policy and adaptation options on resilient infrastructure of the Intended Nationally



Determined Contributions (INDCs) of the UN Paris Climate agreement.



Dr. Delali Dovie on the field

### Adolescent sexual activity in Accra: Exploring circumstances surrounding first sex and societal norms

Early sexual activity may place physical and mental health and socio-economic burdens on adolescents, with most of this ascribed to girls. Studies have shown that it is the urban poor that face exacerbated challenges in this arena. Therefore, this study sought to gain new insights into urban poor adolescents' first sexual experiences and the circumstances leading to sexual debut as well as their definitions of sexual readiness and sexual coercion. It sought to understand past and present socio-sexual norms that exist in these communities. It is expected that the findings from the study will provide a better understanding of the circumstances that lead to adolescents' first sexual encounters, yield information about adolescents' thoughts on sexual readiness as well as their own definitions of sexual readiness in the community and reveal the different forms of sexual coercion in the community and adolescents' struggles with it. The

project is funded from the University of Ghana Research Fund and is led by Dr. Adriana A. E. Biney.



Dr. Adriana A. E. Biney

### Gender-based climate smart integrated flood management

RIPS is currently implementing a one-year project titled '*Gender-Based Climate Smart Integrated Flood Management*' within the catchments of the Odaw River in Accra, an area with one of the highest population concentration in the city and hub of many socio-economic activities. The Making All Voices Count (MAVC) project is sponsored by a consortium which comprises the United States Agency for International Development (USAID), UK-AID, Swedish International Development Agency (SIDA) and the Omidyar Network. The project will among other things seek to use ICT to deploy yearly flood warning systems to mitigate flooding disasters within the catchments of the Odaw River. This will reduce the time between flood information and action by the populations at risk, whilst minimizing impacts on vulnerable groups such as women and the elderly.

### Worldwide Universities Network collaboration on 'Non-market valuation of Loss and Damage under climate change'

The University of Ghana in collaboration with the University of Western Australia, University of Auckland, University of Leeds, University of Cape Town, Monash University, University of Melbourne and the Pennsylvania State

University were successful with an application to the Worldwide Universities Network (WUN) Research Development Fund 2015 titled '*Non-market valuation of Loss and Damage under climate change*' (NMLD). The team is exploring possible frameworks for NMLD "valuation" that are consistent with recent thinking about limits to adaptation, tolerable and intolerable losses.



Dr. Mumuni Abu (3<sup>rd</sup> from left) and Mr. Reuben Tete Larbi (2<sup>nd</sup> from right) in a picture with the L&D team



## Institute of African Studies

### Architecture and planning in the tropics: From imperial Gold Coast to tropical Ghana



**Dr. Irene Appeaning Addo** is collaborating with Dr. Iain Jackson (University of Liverpool, Principal investigator), Prof. Rexford Assasie Oppong (Kwame Nkrumah University of Science and Technology, Co-PI) and Dr. Ola Uduku (The University of Edinburgh) to conduct this three-year study funded by the British Academy. They will investigate how architecture and planning were developed, designed and procured in Ghana during the 'long 20th Century'. This project will chart and catalogue the architecture works produced in Ghana after the Second World War in order to produce a substantial repository/gazetteer of modern Ghanaian architecture and planning. The project also aims at examining the built fabric as well as consider the networks of architects, planners, engineers and 'experts' involved in the production of these plans and buildings. The project will consider how these networks were connected to the political agendas of the time and how the Colonial Office and later Ghanaian policy directly informed and shaped the built environment.

### Menstrual hygiene management research in Zabzugu and North Dayi districts in Ghana

UNICEF signed a Partnership Cooperation Agreement with the University of Ghana to undertake a study on menstrual hygiene management in six schools each in the Zabzugu District in the Northern Region and North Dayi District in the Volta Region. Menstruation is a complex issue that involves not just the management of the menstrual period but the need to address societal beliefs and taboos surrounding the issue. The research was conducted by Drs. Edward Nanbigne (Principal Investigator), Osman Alhassan, Benjamin Kwansa and Prof. Albert K. Awedoba, all of the Institute.



**Dr. Edward Nanbigne interacting with UNICEF Official**

The study finds that girls in both districts obtain knowledge of menstruation through interaction with peers and from lessons taught in the classroom. Other sources of information about menstruation are through girls' membership of school health and social clubs where general hygiene and reproductive health issues are discussed. In most instances, girls were ill prepared for menarche. The general secrecy surrounding menstruation in the communities and the general

ignorance about their reproductive system means girls are shy about their menstruation.

### Husbands care of terminally ill wives

Professor Adomako Ampofo with Deborah Atobrah conducted a research on "Husbands care of terminally ill wives". They explored the care that husbands in Accra, Ghana, provide for wives who have been diagnosed with cancer. An inductive, qualitative approach was used and the study analysed observations of, and in-depth ethnographic interviews conducted with married female cancer patients and their husbands over a ten-month period. The results suggest a strong association among husbands' care, wives' responses to husbands' care and cultural ideals of femininity and masculinity. The findings also suggest that husbands' selective and often limited gender-based investments in unpaid care work make ill wives exceedingly vulnerable in a context in which care for the terminally ill takes place predominately in familial settings.

### Black Lives Matter, de-colonizing the Academy

Members of diverse minority groups, whether they face oppression or experience privilege, have interconnected elements that cannot be divorced from local and global socio-political structures and

dynamics. This research conducted by Prof. Akosua Adomako Ampofo which is set within the context of the Black Lives movements, asks how different groups construct their identities as social groups within the academy and in relation to each other. The research maps the protests and examines the demands for a de-colonized university in Africa and the Diaspora.

### Language barriers in psychiatric health care in Ghana

This research project led by Dr Mercy Akrofi Ansah, aims at ascertaining how the Accra, Pantang and Ankaful psychiatric hospitals manage to overcome language barriers in the course of offering care to clients who speak different languages.



**Dr Mercy Akrofi Ansah**



## Legon Centre for International Affairs and Diplomacy (LECIAD)

### The African Peacebuilding Network (APN) of the Social Science Research Council (SSRC)



Dr. Peace Medie has been awarded an APN Book Manuscript Grant to complete her book on: *'Global Norms and Local Action: The Campaigns to*

*End Violence against Women in Liberia'*. The book manuscript completion grants are intended to support researchers and practitioners who are former recipients of an APN grant or fellowship and have completed their APN projects.

### Engaging in peacebuilding from outside: The case of Liberian refugee diaspora in North America

Dr. Amanda Coffie is conducting a study on *Refugee Diaspora's* engagement in post-conflict peacebuilding. This study hopes to open for consideration how third country resettlement experience and integration shapes refugee diaspora's peacebuilding engagement in their country of origin. The study explores Liberian refugee diaspora in USA and Canada and their engagement in Liberia's peacebuilding activities. The study is funded by the Individual Research Grant from the African Peacebuilding Network (APN) of the Social Science Research Council.



Dr. Amanda Coffie, the second female from the left) sharing her research ideas with other African Peacebuilding Network 2016 grantees in Kampala

## The Centre for Migration Studies

A major feature of the research activities carried out during the period under review includes the investigation of areas of migration research that have been neglected. Innovative methodologies have been used by some of the research projects. Furthermore, dissemination of research findings was a major component of the research activities. The activities of five major research projects are covered in this report.

### Migrating out of poverty research project

The *'Migrating out of Poverty'* Research Programme Consortium (RPC) is a seven-year research programme (2010 to 2017) funded by the UK's Department for International Development (DFID). The RPC co-ordinated by the University of Sussex, undertakes research in five regions across Asia and Africa, examining the relationship between internal and intra-regional migration and poverty, and producing research which aims to shed light on the circumstances under which migration can most effectively reduce poverty. Partner institutions include the University of Witwatersrand, South Africa, The African Migration and Development Policy Centre, Kenya, Singapore National University and the University of Dhaka, Bangladesh. In Ghana, the RPC is co-ordinated by Prof Mariama Awumbila.

Three research sub-projects were completed during the year under review. These are *'Migration to cities in Ghana: An analysis of the counterfactual'* led by Dr. Joseph Teye, *'Migration Industry in Ghana'* led by Prof. Mariama Awumbila and *'Migration, intra-household dynamics and youth aspirations in Ghana'* led by Dr. Delali Badasu.

## Assessing the economic contribution of labour migration in developing countries as countries of destination

Interest in the contribution of migrants to development has increased considerably among policy makers, development planners and practitioners. The focus of both policy and research has been on migrants' remittances to their countries of origin with little attention to their contribution to their host countries. The European Commission is funding the Economic Contribution of Labour Migration (ECLM) project which will assess the economic contribution of international migrant workers in 10 low and middle-income destination countries, including Ghana. The Centre for Migration Studies is partnering with researchers from the International Labour Office (ILO) and the Development Centre of the Organization for Economic Cooperation and Development (OECD) to implement this project in Ghana. The Centre is implementing the qualitative research component of the project in the trade and mining sectors of Ghana. The research team comprises Delali Badasu (Principal Investigator), Joseph Teye, John Anarfi Stephen Kwankye, Leander Kandilige and Mary Setrana.

### Migrants in countries in crisis: Supporting an evidence-based approach for effective and cooperative state action

This study is part of the Research Component of the European Union-funded project titled *'Migrants in Countries in Crisis: Supporting an Evidence-based Approach for Effective and Cooperative State Action'* which aimed at providing accessible, methodologically robust and policy relevant data on the migration implications of crisis situations in host countries. The project seeks to improve the capacity of states and other stakeholders to



assist and provide protection to migrants who find themselves in countries affected by crisis and to address the long-term implications of such situations.

It investigates the availability of relevant mechanisms ensuring the protection of migrants before, during and after crisis in countries of origin, transit and destination. It seeks to understand the long-term impacts of crises on migrants and affected countries (countries of residence, origin, transit). Out of six case studies [Libya, Côte d'Ivoire, Central African Republic, Lebanon, South Africa and Thailand], the Ghana fieldwork focuses on Ghanaian returnees from Libya (due to the 2011 civil unrest) and Ivory Coast (due to the 2002/3 and 2010/11 civil unrest).

## Centre for Social Policy Studies (CSPS)

In the year under review the Centre marked the twentieth anniversary of its establishment. It collaborated with researchers from other units in the College of Humanities and with practitioners from outside the University of Ghana to undertake research in volunteerism in Ghana. In addition, it received funding from World Vision, Ghana to conduct a study on child marriage in Ghana.

### Child marriage in Ghana

National and international communities have come to recognize child marriage as a violation of girls' human rights and a hindrance to key developmental outcomes.



Professor Abena D. Oduro.

The main objectives of this research project are (i) to examine and document the prevalence and root causes of child marriage; (ii) identify the most vulnerable groups susceptible to child marriage; (iii) examine the impact of child marriage on the girls and women who were child brides with special focus on issues of domestic violence and maternal health; (iv) examine the sexual and reproductive rights of child brides and their access to sexual and reproductive health services; (v) identify and assess community-led actions to reduce child marriage and evaluate the legal framework on child marriage. The project team comprises Dr. Stephen Afranie, Dr. George Domfe, Dr. Ernestina Dankyi, Dr. Antoinette Tsiboe-Darko and Dr. Sylvia Djan and is led by Professor Abena D. Oduro.

## Centre for Gender Studies and Advocacy (CEGENSA)

The Centre for Gender Studies and Advocacy (CEGENSA) continued work on two major research grants to conduct research on the gendered implications of large scale land acquisitions and a comparative evaluation of the implementation of domestic violence laws.

### Interrogating large scale land acquisitions and its implications for women in sub-Saharan Africa

This grant of CAD230,000 awarded by the International Development Research Centre of Canada was for the period February 2014-August 2016. During the final year of the project, local and international non-governmental organizations were interviewed to ascertain the various mechanisms they had adopted to ensure transparency and accountability in land acquisition processes in various communities across the country. An end of project dissemination exercise was held during the latter part of August 2016 to share findings of the study with a cross-section of stakeholders.

### Evidence and Lessons from Latin America Phase II project

The Centre received a grant of GBP 130,000 grant from the Department for International Development (DFID) to assess the nature of protection services for survivors of domestic violence in Ghana as well as conduct a comparative analysis of the implementing trajectories with respect to domestic violence laws in Ghana and Mexico. Over a three-month period in 2016, the Centre hosted a learning exchange alliance with

roughly one hundred participants from around the world to discuss protective services for survivors of domestic violence around the world. The Centre also collaborated with the Ark Foundation to run a webinar on the subject.

## School of Social Sciences

Faculty members were successful in winning grants from both domestic and international funders. The School also organized an international conference on the theme 'Social Sciences, Good Governance and Sustainable Development Goals' with international participants from Nigeria, South Africa, USA and Canada. Sponsorship for the conference was received from United Nations Development Agency (UNDP), Konrad Adenauer Stiftung, Office of Research Innovation and Development and International Federation for Science (IFS). Two special issues of the Ghana Social Science Journal, based on the theme, are being published as conference proceedings.

### Informality and the tax gap: A case of non-farm enterprises in Ghana



Dr. Michael Danquah (principal investigator) and Dr. Eric Osei-Assibey of the Department of Economics investigated the size of the tax gap



(the difference between the potential tax revenue and the actual tax payments) in Ghana's informal sector using data from the sixth round of the Ghana Living Standards Survey. They identified factors contributing to the tax gap and the propensity to pay taxes among non-farm informal enterprises. It is expected that the findings of the study will inform the design of tax reforms.

### Improving food security and reducing poverty through intra-regional fish trade in sub-Saharan Africa

The Department of Economics is collaborating with International Center for Living Aquatic Resources Management (ICLARM), also known as WorldFish, on this research project. Mr. Theodore Oboo Antwi-Asare is the principal investigator and he is working with Dr John Kofi Mensah Kuwornu, Department of Agricultural Economics and Agribusiness.

Four graduate students have been assisted with research grants and stipends on this project which ends in December 2016.

### Under-five mortality in Ghana by Districts

Professor Samuel Agyei-Mensah is the principal investigator of the research project titled '*Poverty, energy use, and air pollution in Ghana: A spatial analysis*' which estimated under-five mortality rates in Ghana's districts in 2000 and 2010 and explored whether air pollution exposure is a risk factor for low birth weight in Accra. Findings from the study are that under-five mortality has declined in all Ghana's districts, however, cross-district inequality in mortality has increased. Funding for the project was obtained from the University of Ghana ORID Research Fund.

### The socio-economic impacts of Bui Dam on downstream non-resettled communities

Dr. Kwadwo Owusu's research project focusses on the socio-economic impacts of the Bui dam on downstream non-resettled communities.



**Dr. Kwadwo Owusu**

This 18-month project funded by the Office of Research Innovation and Development sought to highlight the competing resource use and livelihood challenges that downstream non-resettled communities face after the construction of the Bui dam. The study found that downstream communities have not benefited from the resettlement and compensation package managed by the Bui Power Authority. The communities have not been adequately provided with amenities nor have residents received job training. Fishing and farming activities have been adversely affected by the decline in the fish catch and reduction in farm sizes. There is an emerging resource use conflict and weak state control of the exploitation of natural resources post-construction which could potentially lead to a future health emergency for local communities that depend on the river for household water needs. The irrigation component of the dam project which was expected to improve agriculture has not been implemented adding to the livelihood challenge in the dam affected areas.



*Small scale gold mining in the riverbed of the Black Volta made possible after dam construction which could pose health risks to communities that depend on the river for household needs.*

### Christianity and Mental Health



**Dr. Joana Salifu Yendork** in collaboration with Ms. Lily Kpobi and Ms. Elizabeth Anokyewaa Sarfo at the Department of Psychiatry and Department of Psychology respectively is conducting research titled '*Is contemporary Christianity hindering or promoting mental health in Africa: A qualitative study of selected charismatic churches in Ghana?*'

The aim of the research is to identify the activities of selected Charismatic churches in Ghana and understand the impact these activities have on the mental health of congregants. The research team

anticipate using the research findings to propose interventions that will promote the mental health of congregants and discourage practices that are harmful to their mental health.

### The Forgiveness research in Africa

The University of Ghana is one of two regional centres in Africa that is implementing a research project on forgiveness in Africa. The project, '*Can Forgiveness Research be strengthened in West and South Africa?*' is funded by the Templeton World Charity Foundation Incorporated and hosted by Virginia Commonwealth University, Richmond, Virginia, USA. Dr. Annabella Osei-Tutu of the Department of Psychology is the Regional Director of the project in West Africa, whilst the Principal Investigator and Project Consultant at the host university are Prof. Everett Worthington Jr. and Prof. Shawn Utsey, respectively.

The Forgiveness Research in Africa project aims to: (1) train emerging investigators to conduct forgiveness research that is grounded in African theories and African worldview and integrate it into



mainstream research and (2) encourage regional collaborations for forgiveness research in West Africa and South Africa. Researchers from ten institutions across West Africa are participating in the project. The team from the University of Ghana includes Dr. Ernestina Dankyi, Dr. Antoinette Tsiboe-Darko, Dr. Joana Salifu Yendork, Mrs. Charlotte O. Kwakye-Nuako, Ms. Judith Osae-Larbi, Ms. Mary Ampomah, Ms. Selina Owusu-Boadu and Mr. Anakwah Nkansah.



*The emerging Forgiveness researchers in a group photo at a workshop held at the Coconut Grove Regency Hotel, Elmina from January 11-15, 2016.*

### Exploring the contribution of resilience to the 12-month outcomes of care leavers in South Africa, Ghana and Nigeria



**Dr. Kwabena Frimpong Manso** of the Department of Social Work is collaborating with Prof. Adrian

Van Breda and Dr. Lisa Dickens (University of Johannesburg) on a research project titled *'Exploring the contribution of resilience to the 12-month outcomes of care leavers in South Africa, Ghana and Nigeria'*. The aim of the study is to determine the resilience constructs that predict better outcomes for care-leavers as they move out of care over 12 months. A prospective longitudinal rolling cohort approach will be used to obtain data from youth exiting six residential child care centres in South Africa, Ghana and Nigeria. Baseline data will be collected at the time of their disengagement and then follow-up data will be collected one year later.

The study will help residential homes to identify the relationship factors, in-care factors, environmental factors and personal factors that facilitate improved outcomes.

### Understanding child trafficking within Ghana: Stakeholders' perspective



**Dr. Emma Hamenoo** of the Department of Social Work is collaborating with Prof. Geraldine Macdonald of the School of Sociology, Social Policy

and Social Work at Queen's University, Belfast (UK) to research on child trafficking in Ghana.

The aim of the study is to explore how the Human Trafficking Act, 2005 (Act 694) as amended in 2010 conceptualizes child trafficking and how intra-country child trafficking is constructed by the various agencies working within Ghana to eradicate trafficking in persons. They find that anti-trafficking agencies within Ghana hold contradictory views on what child trafficking is. While the International Organization Migration (IOM) identifies the need to pay particular attention to children as a separate category, the Ghana Police Service (GPS), the law enforcement agency, does not see the need for such categorization. The study helped to identify the inconsistencies in child trafficking definitions of anti-trafficking agencies and proposed a further amendment of the Act.

### Access to ICT and resource output of agriculture researchers

Dr. Dan-Bright Dzorgbo of the Department of Sociology is the principal investigator in Ghana on a collaborative project being undertaken between Ghana, Kenya, India, and South Africa. Funding for the project is from the National Science Foundation, USA. The objectives of the project are to examine prevailing trends over time and the relationship between institutional type, ICT access and use, professional activities and productivity.

### In-lecture smartphone use and academic performance of tertiary students

Dr. Rabi Kwaku Boakye Asante and Dr. Rosemond Akpene Hiadzi, both from the Department of Sociology are currently undertaking research titled *'In-Lecture smartphone use and academic performance of tertiary students'*.



**Dr. Rabi Kwaku Boakye Asante**

This study explores the relationship between the culture of smartphone use during lectures and the overall academic performance of tertiary students. The findings of the study will inform the design of teaching pedagogies that can manage in-lecture smartphone use. There are two waves of data collection. The first wave was in 2014 and the final wave is planned for May 2017.

Findings from the first wave of data collection show that students actively use their smartphones during lectures mainly for chatting. Women comprise the majority of students who use smartphones during lectures. There is evidence of a possible relationship between smartphone use during lectures and academic performance

### School of Arts

The University of Ghana and the University of Rome, Tor Vergata have signed a Memorandum of Understanding for collaboration in research,



teaching and student exchange at a ceremony in Rome. The collaboration was initiated by Prof. Kodzo Gavua, Dean of the School of Arts, the host school for the programmes in Tourism and Dr. Caesar Atuire, a Lecturer at the Department of Philosophy and Classics and the facilitator of the

MOU. The broad agreement covers collaboration in different fields, with the first area of collaboration being a proposed research project in Sustainable Tourism and the introduction of an MA in Tourism and Heritage Studies at the University of Ghana.



Excavated finds from some of the German colonial sites © Apoh 2016

### Desilencing the archaeology of German colonial shared heritage sites in Ghana and Togo



Final year students of Archaeology involved in the archaeological excavation of an early Bremen Mission Site at Ho-Kpodzi, Volta Region of Ghana

**Dr. Wazi Apoh**, of the Department of Archaeology and Heritage Studies won an extension to his Senior Volkswagen Humanities postdoctoral fellowship titled *'The archaeology of German colonial heritages in Ghana: Repackaging shared relics for strategic Ghana-German partnership in development'* for another two years. The research component of the extension phase will focus on final archaeological excavations at the German colonial sites and the preparation of excavated finds for exhibition at the University of Ghana Museum of Archaeology, Ho Regional Museum and at the University of Lome. In the first phase of the project a large assemblage of finds was discovered. Some of the key finds include local indigenous technology, imported trade goods, architectural remains as well as remains of flora and fauna exploited at the sites for food.

### Extractive capitalism and its social benefits

Dr. Emmanuel Ofori-Mensah Ababio of the Department of History, continued his research on extractive capitalism and its social benefits. The objectives of the research was to add to the body of knowledge on mining by exploring in some depth the history of the impact of mining in the Akyem Abuakwa state. Its findings challenge those scholars who doubt the transformative, developmental and poverty alleviation roles of the mining industry in Ghana.

### Setting the agenda for an inclusive development: Biblical texts for ecological crisis

Dr. Nicoletta Gatti of the department of the study of religions undertook a research titled *'Setting the Agenda for an Inclusive Development: Biblical Texts for Ecological Crisis.'* Against the backdrop of the relevance of religion in contemporary Ghanaian society, the study explores the answers the Tanak offers to 'the cry of creation and the cry of the poor' caused by environmental degradation and economic oppression.



Dr. Nicoletta Gatti

The study focuses on three texts: the two accounts of creation (Gen 1:27; 2:7-10) and Leviticus 25. Starting from a synchronic reading of the two creation accounts, Gatti states that the creation narratives offer a theological lens to evaluate our relationship with the world: they do not give space to a dualistic attitude toward nature but affirm that the world is home to humans and they are to collaborate with God in transforming 'our common home' in a blessing for all the creatures living in her. Finally, they emphasize the interrelatedness with the world and all forms of life and humans' smallness in the world, an aspect further developed by Leviticus 25.

Analysis of these texts leads the researcher to recognize that problems of human ecological destruction of the Earth are so monumental and all-pervasive that it is hard to see any avenue of hope. It is the challenge of theology to shape 'a new social imagination' not only making the ecologically destructive way of life unacceptable, but also helping people imagine alternative possibilities, generating concrete practices of alternative living that might constitute a practice of hope.

### Religion and sustainable development in Ghana

Dr. Rabiatu Deinyo Ammah's research titled *'Religion and Sustainable Development in Ghana'* explores the participation of the Ghanaian Muslim community in harnessing religious resources to address issues of sustainable development. It gives an overview of their involvement in the development process as a religious imperative. It highlights the various means by which the Muslim community is endeavouring, particularly through the provision of educational institutions and propagation (*dawah*) to bring development to Ghana and the community in particular. The



researcher argued that in Islam, development is holistic and encompasses the material, spiritual and ethical. Sustainable development is therefore rooted in the proper appreciation of the interrelatedness between human beings, the environment and economics to achieve harmony and balance; Islamically this promotes peace. Subsequently, God anticipates the operationalization of the Qur'an and Sunna as guidance for the accomplishment of sustainable development.



**Dr. Rabiatu Deinyo Ammah**

### The contribution of Akan sacred lyrics to development

Rev. Dr. George Ossom-Batsa and Rev. Felicity Ampah are undertaking a research titled '*The Contribution of Akan Sacred Lyrics to Development in Ampiah-Adjumako Area in the Central Region of Ghana*'. The aim of the study is to examine how performance and re-interpretation of Akan sacred lyrics have deepened the sense of belongingness and the humanity of the people and thus has advanced their discourse on development. Selected lyrics and narratives of lived experiences are analysed using a literary critical approach in pragmatic perspective.

The researchers found that Akan lyric singing provides the context for people to engage the realities of human existence, for example, sickness and difference in a holistic manner. For many people, the lyrics are inspirational and motivational tools that transform their lives towards the ultimate reality.



The study concludes by affirming that religious worldviews and agencies such as Akan sacred lyrics, formerly categorized as hindrances to development, are assets for sustainable, participatory and self-reliant modes of development.

### School of Languages

The School of Languages International Research Conference - The School of Languages, under the leadership of the Dean, Prof. Nana Aba Appiah Amfo, in collaboration with the Language Centre and the Central University College held a three-day international conference in October 2015 at the Institute of Statistical, Social and Economic Affairs, University of Ghana on Multilingualism. The conference, which was under the theme *Multilingualism in the African Context: Resource or Challenge?* featured a colloquium on the use of mother tongue as a medium of instruction in schools in contemporary Ghana. It brought together over 200 language scholars from many tertiary

institutions in the country as well as twelve other countries in various parts of Africa, Europe and North America.

### Accounting for non-compositional properties of complex words



In this research, **Dr. Clement Appah** of the Department of Linguistics studied the properties of complex words that are not attributable to their constituents (generally called holistic properties of morphological constructions). He focuses mainly on compounds - complex words that are formed by combining already existing words.

### The Rural-urban interface project



**Professor Helen Yitah** of the Department of English collaborated with Dr. Delali Badasu of the Centre for Migration Studies, Aloysius Denkabe and Dr. Wanjiru Gichuhi of the University of Nairobi, Kenya on '*The rural-urban interface: Gender and poverty in Ghana and Kenya, statistics and stories*' project. Other researchers on this project which was facilitated by Prof. Gayatri Spivak are from the University of Nairobi, Columbia University, Barnard College and Princeton University. The project was funded by the Columbia Centre for the Study of Social Difference and is a project in an interdisciplinary, inter-regional, consortia, Africa-led research endeavour that looks at the rural-urban interface in Ghana and in Kenya, concentrating on the experience of women, youth and men who inhabit this social and physical space. The study pays particular attention to gender relations and to the feminization of poverty in migrant populations.

Professor Helen Yitah of the Department of English is one of eight editors for a project on Norton Anthology of Contemporary African Poetry. This project was funded by the Ford Foundation. The General Editor is Kwame Dawes. The Anthology is identifying exciting trends and developments in world literature with a focus on the impact that a genre of poetry is currently seen happening the world. While there has been a great deal of attention already given to the emergence of a dynamic African fiction movement, this anthology will demonstrate that an equally dynamic and emerging force in poetry is taking place in Africa that is marked by aesthetic variation, diverse and complex themes, and the rise of an exciting cadre of gifted women poets who have long been neglected in past anthologies.

## La Peste or the optimism of man confronted with destiny

Dr. Kofi Agbefle worked with Dr. Koffi on "La Peste or the optimism of man confronted with destiny".

This research highlights, on the one hand, man's fanatic attitude regarding destiny and proposes, on the other hand, an awaking consciousness of the diverse origins of destiny other than God.

**Table 12: Selected Publications from the School of Languages**

Author	Department	Co-authors	Title of Publication
Prof. K. Agyekum	Linguistics	W. Roodney A. Sackey E.W. Affol	<i>English Akan Science Dictionary</i> . Accra: Adwinsa Publications
Prof. K. Agyekum	Linguistics		<i>Metaphoric expressions of Akan body parts</i>
Dr. Reginald A. Duah	Linguistics	Mira Grubic	<i>The focus, exhaustivity and existence in Akan, Ga and Ngamo</i>
Dr. Reginald A. Duah	Linguistics	Susanne Genzel	<i>H-tone insertion in subordinate clauses in Akan</i>
Prof. R. Yennah	French	Dr. Ayitey	<i>The palingenesis of the sun in Albert Camus "The Stranger"</i>
Prof. R. Yennah	French	Dr. Ayitey	<i>Stylistics of the rhetoric of liberty in an excerpt of Candide</i>

## School of Performing Arts

The School of Performing Arts has had various research collaborations in the period under consideration. Due to the very nature of our programmes, research work has combined both practical and academic work. The School has in recent years increased the scope and depth of its research activities. The interdisciplinary quality of the performing arts is clearly seen in our scope of research areas which included radio drama, theatre in education, costume design and construction, recording of stage performances on site, compilation of various musical pieces and songs as well as the anthropological investigation of dance as a complex cultural phenomenon. Some of the research activities in the School are noteworthy.

### The 'Ephraim Amu to Newlove Annan' Music Project



**Dr. Joshua Amuah** of the Department of Music, through this self-funded project, traced the history of Ghanaian art choral music tradition from Ephraim Amu until the present. It examined generational factors in the development of Ghanaian art music; an aspect that has consistently been ignored in Ghanaian musicology. The study focused on

compositional styles, socio-cultural issues; impact of personal and generational ideologies and idiosyncrasies on composers' creativity as well as audience reception of their works, and argued that although Western choral music composition tradition with its fixed canons has influenced much of Ghanaian art music, generational modifications and re-interpretations which are reflective of changing socio-historical and cultural realities of the Ghanaian society cannot be undermined.

### Creative Processes in Osoode Music Performances among the Larteh of Ghana

Mr. Michael Ohene Okantah Jnr. of the Department of Music, through this self-funded project, examined the creative processes in *Osoode* music performances of the people of Larteh in the Eastern Region of Ghana. He also examined *Osoode* music in the context of performances where a coherent body of aesthetic values and expressive behaviours come together to be appreciated as a musical event. He concluded that through *Osoode* music performances, an avenue is created among the people of Larteh, where performers and community members creatively express their sentiments and teach community values which helps strengthen their consciousness as a people.

### The Popular Theatre and Rural Agricultural Finance Programme: An educational awareness campaign

Dr. Agyeman Ossei of the Department of Theatre Arts researched and directed this production for development intervention among rural agricultural

communities in Ghana. He employed thirty-minute dramatic performances in eleven local languages to educate five communities each in seven of the ten regions of Ghana on the benefits of proper financial behaviour and agricultural insurance. This was a Ministry of Finance, RAFIP and International Fund for Agriculture and Development (IFAD) funded project.



**Dr. Agyeman Ossei**

### Nudity as Clothing and Cloth

Dr. Regina Kwakye-Opong of the Department of Theatre Arts examined nudity as clothing in the socio-cultural traditions of the Ga naming ceremony. She examines why nudity can be classified as clothing and also discusses the metaphysics of clothing with regards to the Ga naming ceremony.



## University of Ghana Business School (UGBS)

The School's journal, *African Journal of Management Research* began being listed in the African Journals Online (AJOL) this year. This will improve visibility and global recognition of the journal and attract good quality scholarly interests.

Faculty at UGBS continue to collaborate with peers in leading universities across the world. Professor Joshua Yindenba Abor and Dr. Mohammed Amidu together with other researchers from University of Birmingham and other collaborating i

nstitutions including SOAS University of London, Institute of Development Studies at the University of Sussex, Loughborough University, the Overseas Development Institute, the University of Nottingham, the University of Groningen, Netherlands, Université Laval in Québec, Canada and Columbia in the US, and the African Economic Research Consortium (AERC) won a \$2.93 million research grant on inclusive finance. The Project is funded under the DFID-ESRC Growth Research program (DEGRP) Call 3 (2015/16). The research is to be delivered over a four-year period (2016-2020).

## School of Law

In the 2015-16 academic year, six faculty members and one visiting scholar published in the 28<sup>th</sup> volume

of the University of Ghana Law Journal. Prof. Nii Ashie Kotey is the Editor-in- Chief.

Below are the authors and the titles published.

**Table 17: Selected Publications from the School of Law**

Author	Title Published
Henrietta J.A.N. Mensa-Bonsu	O, The difference that a word makes! – Remaking the Laws of Ghana by the Statute Law Revision Process
Samuel Obeng Manteaw	Refining nuclear safety using an integrative concentric paradigm for effective nuclear power regulation
Rose Rameau	The battle between consent and the principle of competence-competence in Investment arbitration
George A. Sarpong & Emmanuel Yaw Benneh	The doctrine of sovereign immunity in international law: The "ARA LIBERTAD" Case (Argentina V. Ghana)
Thomas Kojo Stephens	In their name and for their welfare: Rethinking Ghana's constitutional provisions for the natural resource sector in the Light of Ghana's upstream petroleum industry.
Kwame Adjei-Djan	Double taxation agreements in Ghana: Domestic law and international law perspectives
Kwadwo Appiagyei-Atua	Positioning academic freedom in the discourse on the revitalization of higher education in Africa

### Regulating mining water use and impacts in Ghana: Comparing Australian and Ghanaian law for reform ideas. (IM4DC Action Report, July 2015)

This research by Alex Gardner, Nick Duff, Kwaku Ainuson and Samuel Manteaw is the product of

a collaborative and comparative study of the key materials that regulate mining industry use of and impacts on water resources in Australia and Ghana. It has sought to derive some key principles of the relevant Australian regulation (based mainly on Western Australian law) and to ask whether

those principles may convey some useful ideas to assist in developing and reforming the regulatory relationship between mining and water in Ghana.

Prof. Kofi Quashigah, together with a carefully selected group of outstanding African and non-African constitutional law scholars and practitioners contributed chapters to the book *Separation of powers in African constitutionalism* edited by Charles M. Fombad and published by the Oxford University Press. This book is the first in the series of Stellenbosch Handbooks in African Constitutional Law. Prof. Quashigah wrote on the topic 'Defying assumptions about the nature of power relations between the executive and judiciary'. The chapter examined the relationship between the executive and the judiciary since independence. A correlation was found between the nature of constitutional protection accorded to the judiciary, the executive's acceptance of democratic values and the judiciary's own demonstration of commitment to protecting its independence. The relationship between the judiciary and executive has not been a straightforward one. However, the 1992 constitution provides adequate constitutional protection to the judiciary making it constitutionally and politically unwise for any ill-intentioned executive to exhibit dictatorial tendencies in relation to the judiciary.

Prof. Quashigah published a chapter titled '*Ghana's 2008 Elections, the constitution and the unexpected: Lessons for the future*' in *Issues in Ghana's electoral politics*. This was distributed in Africa by CODESRIA. In it he argues that the 2008 elections exposed a number of legal weaknesses inherent in both the constitutional provisions on elections and the ordinary legislation. The chapter

examines the possible legal response to these issues and concludes by stating that the success of a democratic system is more a reflection of principally the determination of political attitude rather than a matter of law or the constitution per se. The experience in Ghana confirms the belief in the need for a complement between the political attitude and the constitutional and statutory aspects and that the electoral process could benefit from some conscious re-engineering of the timetable for elections as well as a statutorily regulated transitional process as has been the case in the American system.

In '*Justice in the Traditional African Society within the Modern Constitutional set-up*', Prof. Quashigah traces the history of various philosophical and political concepts such as natural rights, human rights, rule of law, separation of Powers and judicial review. He observes that even though formulation of these concepts was highly specific to Europe, the spirit behind these concepts are fundamental to all mankind- both in its traditional and modern epochs. Mr. Kissi Agyebeng co-edited a book titled '*A commitment to law, development and public policy: A Festschrift in honour of Nana Dr. S.K.B Asante*'. The book was put together by a distinguished list of forty-seven authors comprising justices of the superior courts of Ghana, England and Wales, the founder of Transparency International, academics in Ghana, the United Kingdom and the United States of America, distinguished legal practitioners, arbitrators and policy makers. The book comprises forty-two chapters and encompasses the academic and professional interests of Nana Dr. Asante. The book was published by Wildy, Simmonds and Hills in 2016 in London.



## The School of Graduate Studies

The School of Graduate Studies continues to play its role as the coordinating Unit for graduate programmes for the entire University. The School has gained quite an appreciable level of visibility over the years particularly during the 2015/2016 academic year. This was through the activities of

our own students who we usually refer to as the ambassadors of the School. The School attracted 5,699 applications out of which 3,764 were admitted and 3,073 registered in the 2015/2016 academic year. The School also attracted 847 international applications out of which 352 (42%) were admitted.



Figure 6: Applications, Admission and Registration, School of Graduate Studies

The School introduced seven new programmes in Organisational Leadership and Governance, Financial Risk Management, Accounting and Finance, Information Studies, Migration Studies,

Educational Leadership and Management and Geoinformation Science. All these are sandwich programmes mounted during the third semester every academic year (between June and August).

## Abstract of Selected PhD Dissertations Produced Across the Colleges

### Adaptation to urban floods among the poor in the Accra Metropolitan Area



Dr. Emmanuel Anyang Abeka

There are very few studies on public and private adaptation to floods that centre on the urban poor in Africa. This study departs from the top-down approach as it explores household and public adaptation to urban floods among the poor in Accra from an actor-oriented perspective.

The study found that the level of agreement on the perceived causes of flooding among actors involved in flood adaptation in Accra is low. The differences in opinions are influenced by externalisation of blame and responsibility among actors as well as different actor interests. At the household level, the predictors of flood adaptation choices are tenancy status, home elevation, type of wall material, perceptions about future occurrence of floods and perceived adaptation cost as well as perceived adaptation efficacy and availability of bonding social capital. The study found that taking precautionary measures ahead of floods and living in sandcrete houses away from water bodies and at

high elevations reduces households' susceptibility to property damage or loss from urban floods.

### Development of high-yielding and stable maize (zea mays l.) hybrids tolerant to low soil nitrogen



Dr. Priscilla Adofo Boateng

Low soil nitrogen (N) impedes maize production in the small-scale farming sector in Ghana. Development of improved maize varieties that are tolerant to low soil nitrogen will reduce the need for nitrogen inputs and enhance production. The objectives of this study were to (1) assess maize production constraints of Ghanaian maize farmers and their perceptions and knowledge on soil fertility, (2) determine heterotic patterns and combining ability of grain yield for intermediate maturing maize inbred lines under low and high soil nitrogen environments, (3) determine the mode of gene action conditioning grain yield under low nitrogen, (4) evaluate the testcrosses (single cross hybrids) for high yield, stability and tolerance to low and high soil nitrogen and (5) identify and map Quantitative Trait Loci (QTL) for grain yield (GY) and secondary traits under high N and low N.

Low soil fertility, drought, pests and diseases were found to be the major constraints on maize production. Most farmers grow improved varieties,



but have very little knowledge about hybrids. Farmers preferred low N and drought tolerant varieties with good storability that are disease and insect resistant and require low inputs. The research identified hybrids that are high yielding and low nitrogen tolerant. These are recommended for further testing for potential release to farmers in low soil N environments. Seven were among the 20 best yielding hybrids across environments and were identified as candidates for further testing for commercialization. Two hybrids were identified as the highest yielding and stable hybrids. These hybrids should also be further tested in multi-location trials and promoted for release.

### Amikacin treatment with or without aminophylline in neonates with suspected sepsis at Korle-bu Teaching Hospital: A pharmacokinetic and pharmacodynamic study

Neonatal sepsis still represents an important cause of morbidity and mortality. The symptoms of sepsis are often non-specific and diagnosis requires a high index of suspicion. Thus, the role of additional diagnostic markers is important. Amikacin is used as first-line treatment of neonatal sepsis and it is usually co-administered with aminophylline in preterm neonates in Ghana. Amikacin dosing is well-established; however, optimal effect requires specific dose titration and individualized maintenance therapy especially in preterm neonates. However, information on the pharmacokinetics (PK) of amikacin in neonates of African origin is limited. The aim of the study was to describe the PK of amikacin and evaluate aspects of the pharmacodynamics (PD) of amikacin, including aminophylline co-administration, in neonates with suspected sepsis.

Neonates with suspected sepsis and requiring amikacin or amikacin with aminophylline treatment were recruited within 24 hours of delivery, at the Neonatal Intensive Care Unit, Korle-Bu Teaching Hospital. Serum levels of the acute phase reactants, C-reactive protein (CRP) and procalcitonin (PCT), blood culture and sensitivity, selected haematological and biochemical parameters, as well as brainstem auditory evoked potential (BAEP), were taken before treatment. Serum amikacin concentration was measured at specified times before and after treatment initiation and analysed by means of a non-linear mixed effects based, population PK modelling approach.



Dr. Seth Kwabena Amponsah

The results showed PCT as a more sensitive marker for early onset neonatal sepsis diagnosis and suggested increased drug dose and prolonged dosing interval as an effective strategy for optimizing amikacin dosing in this cohort of neonates.

### Epidemiology of Beta-Lactamase Producing Escherichia Coli and Klebsiella Pneumonia Ghana

This study was conducted in Ghana to determine the occurrence and clinical significance of beta-lactamases in Escherichia coli and Klebsiella

pneumoniae among clinical and gut colonization strains from hospital patients and community residents. Particular focus was placed on genotypes of plasmid mediated AmpCs, ESBLs and carbapenemases; E.coli phylogeny and O25b:ST131 isolates; treatment outcomes; as well as risk factors for colonization and infection with these organisms. Study isolates were collected consecutively from clinical and faecal specimens in Korle-Bu Teaching Hospital and from selected community residents.



Dr. Noah Obeng-Nkrumah

AmpC, ESBL, and carbapenemase genes were analysed by PCR and sequencing. Phylogenetic groups were determined and the O25b-ST131 E. coli clones identified. ESBL-producing E.coli, mostly those with CTX-M-15 enzymes, are prevalent in Ghana and remain a principal source of multidrug resistance and inappropriate antibiotic treatment in infections caused by Enterobacteriaceae. Carbapenem therapy remain the most effective option against these isolates, however, the presence of NDM-1 in the hospital and in gut flora of healthy community persons remains a serious public health concern.

### African cultural values and psychological health of adults with sickle cell disease in Ghana

Although spirituality has been found to reduce psychological symptoms, the factors that intervene in the relationship remain unclear. The present study aimed at determining whether African cultural values would moderate the relationship between spirituality and psychological health and whether this observation was unique to Sickle Cell Disease (SCD) participants.



Dr. Michael T. Anim

Additionally, the study explored reasons for the use of African cultural values in coping. Finally, the study aimed at developing a model of coping with SCD. It was found that SCD participants differed significantly from comparison groups on specific African cultural values subscales and on specific psychological symptoms. The results implied that there were significant differences between SCD and diabetic or healthy participants on endorsement of specific African cultural values and their effects on psychological health. The results suggested that SCD individuals used other strategies to complement African cultural values to promote psychological health.

## Design of additional safety rod in conjunction with reactor core conversion studies of Ghana Research Reactor – 1

The feasibility study of core conversion of Ghana Research Reactor-1 was carried out using neutronics, thermal hydraulics and burnup codes. This study is informed by the recommendation to incorporate a safety rod to the reactor safety system as well as the intention to replace the reactor fuel with Low-Enriched Uranium (LEU) made by the Integrated Safety Assessment for Research Reactors mission. Conversion from one fuel type to another requires a complete re-evaluation of the safety analysis. Changes to the reactivity worth, shutdown margin, power density and material properties must be considered and appropriate modifications must be made.



**Dr. Henry Cecil Odoi**

Neutronics analysis including burnup was studied followed by thermal hydraulics analyses which comprise steady state and transients. Based on the results, it is concluded that the conversion of the GHARR-1 to LEU core is not likely to present any new potential accidents nor increase the consequences of any of the postulated design basis accidents identified in the current approved SAR.



## Balme Library

### Digitization and Institutional Repository

The Balme Library has been consistent in the digitization and uploading of scholarly publications onto the University of Ghana Space. For the 2015-2016 academic year, 2,203 academic materials were uploaded onto the UGSpace. Out of these materials, 1,105 were theses and 822 were journal articles. The figure for the theses in the 2015-2016 academic year is a 33% increase over the figure for the 2014-2015 period. This has been demonstrated by the Ranking Web of Institutional Repositories for 2015 and 2016 respectively.

### Book Donations

A former Vice-Chancellor of the University of Ghana, Professor Emeritus George Benneh, donated 273 books on Geography and Population Studies, and Parliamentary Proceedings to the Balme Library.

In addition, the University Alumni Association donated nine books to the Balme Library. The books included biographies of the late Dr. Hilla Limann. The books were written by a former Vice Chancellor of the University of Ghana, Professor Emeritus Ivan Addae-Mensah.

### Acquisitions

During the 2015-2016 academic year, the Balme Library added 1,463 books to its collection. Out of this number, 914 were purchased while 282 were donations. The Balme Library has also liaised with some colleges to acquire relevant titles to promote teaching and learning.





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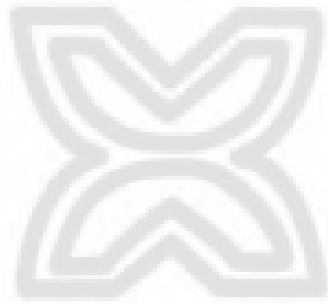
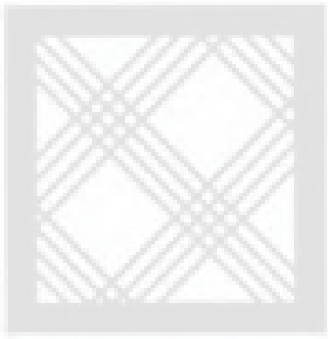
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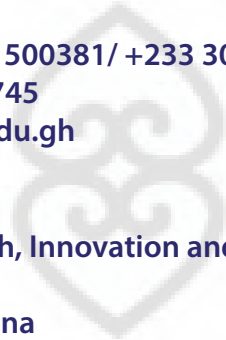
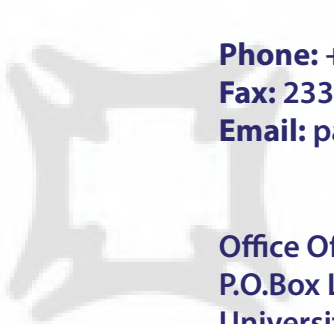
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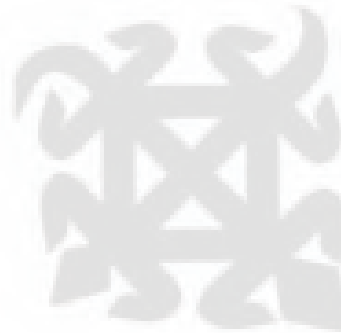


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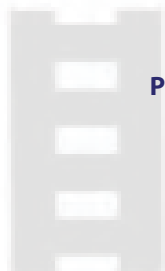
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