



ORID
Office of Research, Innovation & Development



UNIVERSITY OF GHANA
RESEARCH
REPORT

2014/2015



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UNIVERSITY OF GHANA

The University of Ghana was founded in 1948 as the University College of 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.

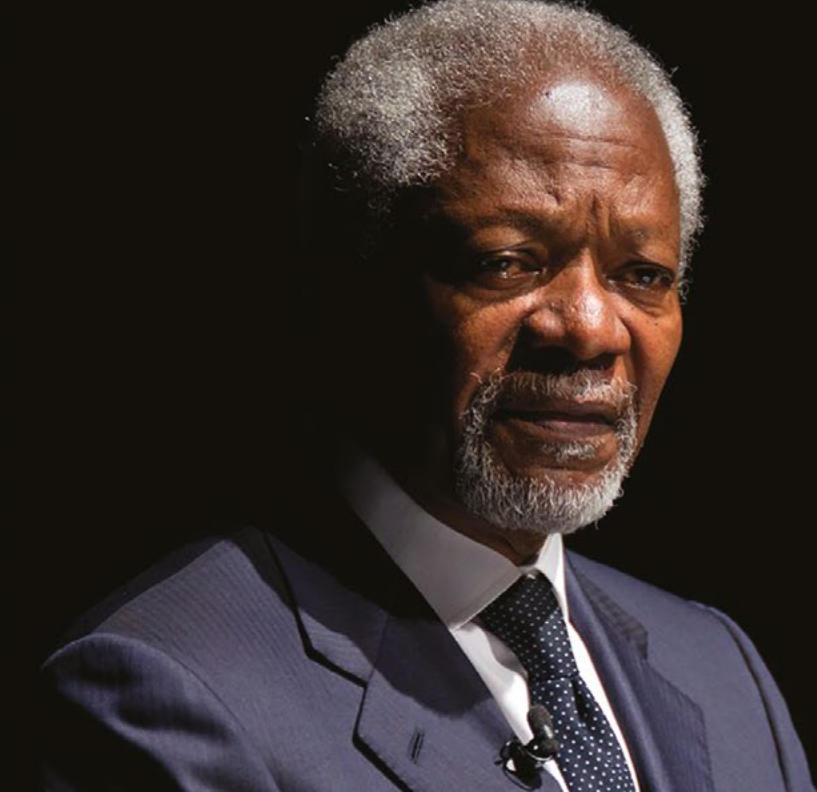
Over the last sixty-five years, the University of Ghana has evolved into one of Africa's leading universities, recognized worldwide for the academic and research excellence of its faculty, student body and for the professional success of its alumni.

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.



KOFI ANNAN

Chancellor

Foreword

This third edition of the University of Ghana's Research Report represents the continuous effort of the University to bring its research activities to a global audience

"create a vibrant intellectual climate that stimulates relevant cutting edge research and community engagement"

Research is key to sustainable development - research conducted by Higher Educational Institutions makes these institutions relevant to the development agenda of a nation.

In our quest to become a "research-intensive" University, research has been identified as one of nine strategic priority areas of the University of Ghana where we seek to *create a vibrant intellectual climate that stimulates relevant cutting edge research and community engagement*. It is in light of the above, that the University has made a lot of investment into the acquisition of new equipment and other research tools including databases to strengthen research impact and improve the visibility of the University's research output across the globe.

This report showcases the University's research output by highlighting key research activities of the University to its stakeholders.



Research funding contributes significantly to University RANKINGS

Vice Chancellor

PROFESSOR ERNEST ARYEETAY

Message

Research funding contributes significantly to University rankings. At the end of the 2014/2015 academic year, the University had signed various research grant agreements with a total value of USD 52,524,883.11.

The latest university rankings compiled by Thomson Reuters places the University of Ghana in the 10th position among African universities. This is the best position we have ever attained in any rankings, and it is exciting to observe that our placement in the rankings has consistently improved across all the major ranking organisations. I congratulate all colleagues, students and other stakeholders of the University who have enabled us to attain this feat.

The introduction of the Collegiate system has seen many of the colleges working on their individual strategic plans; primarily focusing on research. The Collegiate system has provided new opportunities for Schools and Institutes to carry out cutting-

edge research with collaboration from local and international partners.

I am proud to announce that the four Centres of Excellence established in the University have been allocated GHS 1 million each, as seed money to develop research areas in Climate Change Adaptation, Malaria Research, Food Production and Processing, and Development Policy and Poverty Monitoring and Evaluation, to address key developmental issues in Ghana and beyond. In a developing country like Ghana, it is especially important that research activities at universities give focused attention to research uptake.

I applaud the efforts of our hardworking researchers and research administrators for a good job done in showcasing research accomplishments at the University.

Pro-Vice Chancellor
Research, Innovation and Development (RID)

PROFESSOR JOHN GYAPONG

Message



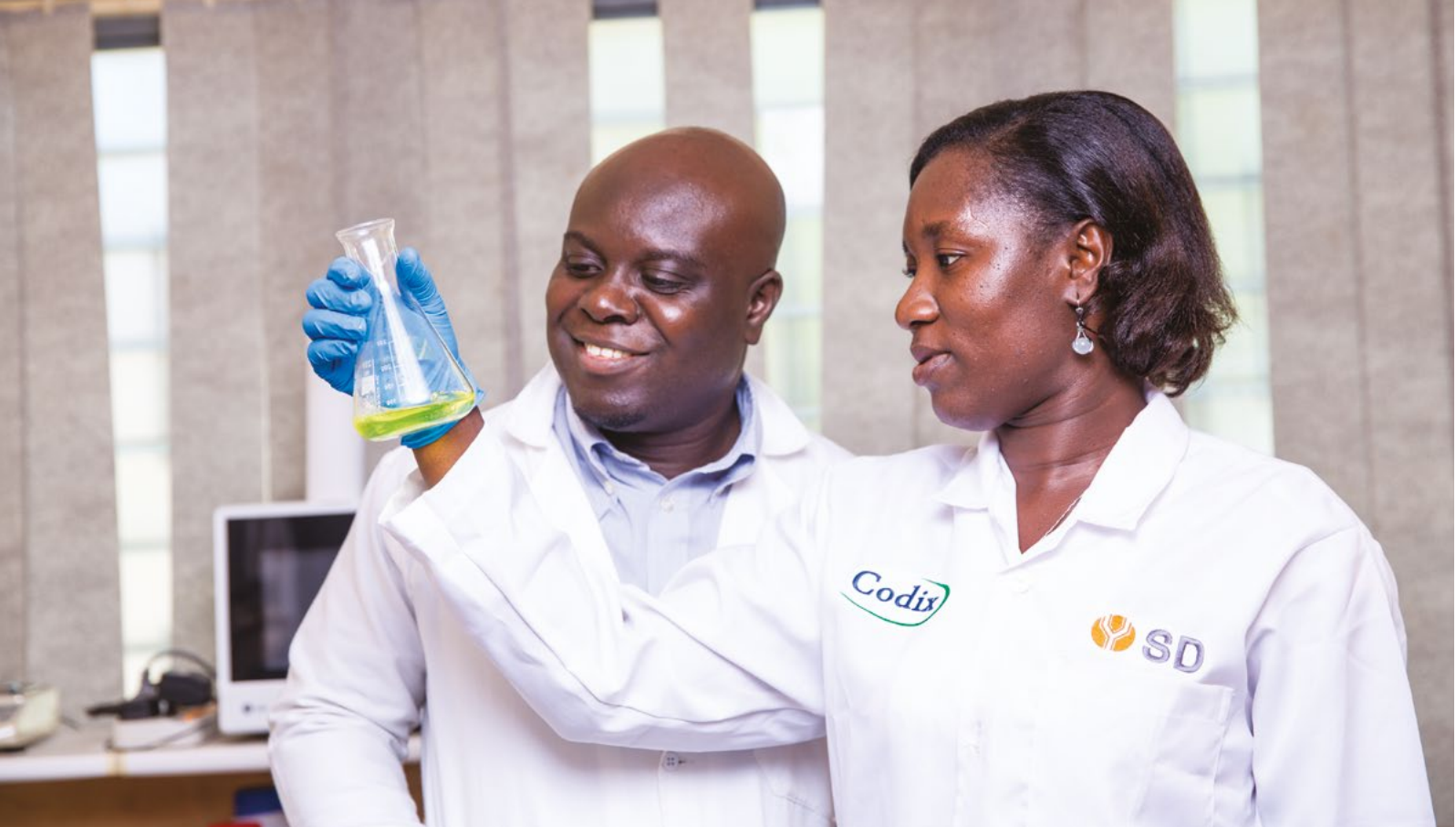
In this third edition of the University of Ghana Research Report, we share with our stakeholders the outcome of our collective research and innovation efforts which have kept the University of Ghana progressing towards its vision of becoming a research-intensive university in the near future.

We continue to promote and foster strategic partnerships and collaborations. In addition to existing funding agencies we work with, our research office successfully regularised the University's registration with a number of funding institutions such as the Wellcome Trust, the UK Research Council through the Joint Electronic submission system, European Union, National Science Foundation and WIPO Re:Search of the World Intellectual Property Organisation. Additionally, internal support systems and services have been streamlined to ensure proposal submissions by researchers are processed for institutional endorsement in a timely manner.

Our Intellectual Property Office is gradually positioning itself to fulfill its mandate. We have initiated and strengthened links with national and international Intellectual Property organisations to provide the needed support to our scientists.

The University Council has also remained committed in the allocation of funds to support research activities by approving 5million Ghana cedis of the University's internally generated funds to support various research activities. We acknowledge the commitment of our researchers, and the continual support of donors and partners.

We continue to promote and foster strategic partnerships and collaborations



UG RESEARCH SNAPSHOT

2014/2015 UG Research Profile in Brief

Research-intensive UG centres, institutes and schools*: ISSER, NMIMR, RIPS, School of Public Health, WACCBIP, WACCI.

*(*based on reported research budgets of at least USD 500,000 and investment in graduate and early career research training)*

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Major Donors providing funding to multiple UG units: AGRA, Bill and Melinda Gates Foundation, DANIDA, DFID, European Union, FAO, IDRC, Leverhulme-Royal Society, NIH, USAID, World Bank (WB), World Health Organization (WHO).



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Major University Partners and collaborators include: University of Cambridge, University of Cape Coast; Cornell University, University of Michigan, Kwame Nkrumah University of Science and Technology (KNUST), London School of Hygiene and Tropical Medicine, New York University, University of Sussex, Yale University.

Cross-cutting research areas funded by competitive external grants: Climate Change; Food Safety and Security; Infectious Diseases/Neglected Tropical Diseases; Maternal Health; Chronic Non-communicable Diseases; Policy Research; School Age Health.

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Countries in Africa, Asia, Europe, and Latin America in which UG has a research presence through 12 multi-country collaborative research studies and partnerships. Countries include: Bangladesh, Benin, Botswana, Burkina Faso, Cameroon, China, Cote d'Ivoire, Ethiopia, The Gambia, Germany, Guinea, India, Kenya, Mali, Malaysia, Mexico, The Netherlands, Niger, Nigeria, Senegal, South Africa, Tanzania, Togo, Uganda, United Kingdom, Zimbabwe.

Development Partners, Industry and Civil Society collaborators Institute of Economic Affairs, Ministry of Health, Ministry of Gender, Children and Social Protection, ECOWAS, Ghana Journalists Association, FAO, WHO, UNICEF.

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Summary of Research Funding (2014/2015) Academic Year

College	GHS	USD
College of Humanities	60,897,957.85	17,585,318.46
College of Health Sciences	56,107,527.56	16,202,000.45
College of Basic & Applied Science	64,874,332.82	18,733,564.20
College of Education	13,852.00	4,000.00
TOTAL	181,893,670.22	52,524,883.11

Dominant Research Areas Funded with Competitive External Grants

	Climate Change	Food Safety & Security	ID/NTDs*	Maternal Health	Mental Health	NCDs**	Policy***	Age & Health
College of Basic and Applied Sciences								
Institute of Applied Science & Technology (IAST)								
School of Agriculture								
School of Biological Sciences								
School of Physical and Mathematical Sciences								
West Africa Centre for Crop Improvement (WACCI)								
College of Education								
School of Information and Communication Studies								
College of Health Sciences								
Noguchi Memorial Institute for Medical Research (NMIMR)								
School of Biomedical & Allied Health Sciences (SBAHS)								
School of Medicine & Dentistry (SMD)								
School of Pharmacy								
School of Public Health								
College of Humanities								
Centre for Gender Studies and Advocacy (CEGENSA)								
Centre for migration Studies (CMS)								
Centre for Social Policy Studies (CSPS)								
Institute of Statistical, Social and Economic Research (ISSER)								
Regional Institute of Population Studies (RIPS)								
School of Social Sciences								

Major Funders of UG Research and Recipient UG Units

	AGRA	BMGF	DANIDA	DFID	EU	FAO	IDRC	Leverhulme	NIH	USAID	WB	WHO	
College of Basic and Applied Sciences													
Institute of Applied Science & Technology (IAST)						●							1
Institute of Environment & Sanitation Studies (IESS)				●			●						2
School of Agriculture		●											1
School of Biological Sciences			●		●					●			3
School of Engineering Sciences								●	●				2
School of Physical and Mathematical Sciences								●					1
West African Centre for Cell Biology of Infectious Pathogens (WACCBIP)								●			●		2
West Africa Centre for Crop Improvement (WACCI)	●									●	●		3
College of Education													
School of Information & Communication Studies							●						1
College of Health Sciences													
Noguchi Memorial Institute for Medical Research (NMIMR)		●	●	●			●		●			●	6
School of Biomedical & Allied Health Sciences (SBAHS)							●						1
School of Medicine & Dentistry (SMD)					●				●			●	3
School of Public Health		●		●			●					●	4
College of Humanities													
Centre for Gender Studies and Advocacy (CEGENSA)				●			●						2
Centre for migration Studies (CMS)				●	●								2
Centre for Social Policy Studies (CSPS)						●	●						2
Institute of Statistical, Social and Economic Research (ISSER)	●	●		●			●			●	●		6
Language Centre										●			1
Regional Institute of Population Studies (RIPS)				●	●		●		●				4
School of Social Sciences			●										1
University of Ghana Business School (UGBS)				●									1
	2	4	3	8	4	2	9	3	4	4	3	3	



OFFICE OF RESEARCH, INNOVATION AND DEVELOPMENT (ORID)

The Office of Research, Innovation and Development (ORID) continues to pursue its mandate of promoting, facilitating and coordinating cutting-edge research within the University of Ghana (UG). This mandate is to help achieve the broader vision of becoming a world class research-intensive University. This offers a number of unique challenges, but also numerous opportunities. From accessing funding and, providing research administration and grant management services through to the protection of intellectual property and collaboration with the private sector, ORID offers a creative and supportive environment in which research at the University of Ghana thrives.

Our attention now is not only to support groundbreaking research, but also to make these research and innovative technologies visible to the public through collaboration

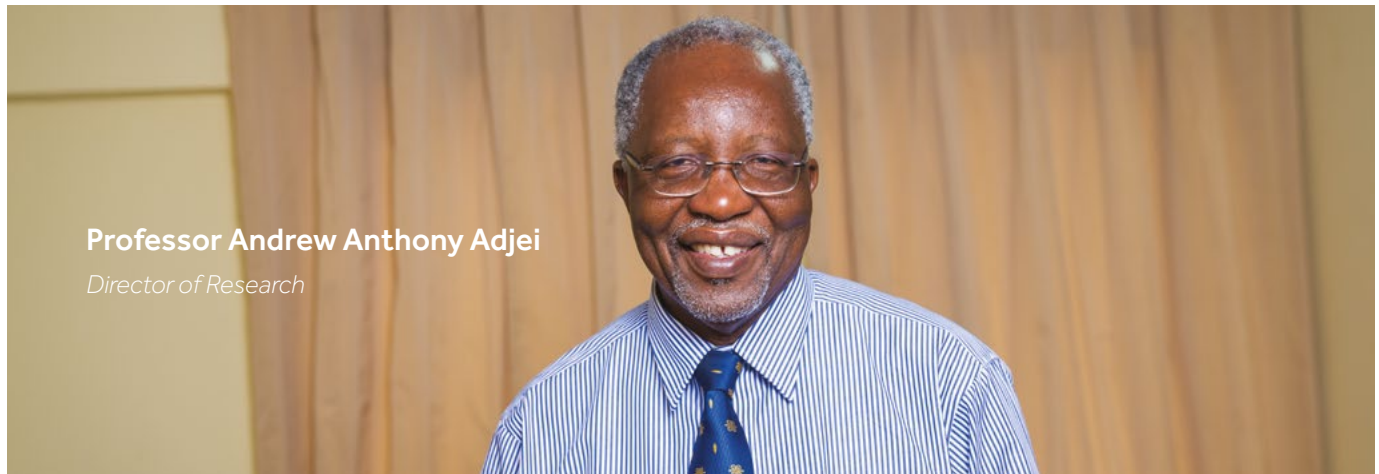
with the private sector for possible commercialisation. To achieve this, we have instituted a Technology Transfer Grant Scheme which aims to assist researchers to transfer their demand-driven technologies to the private sector. This year, a number of technology fairs and exhibitions have been organised to showcase the University's technologies to the outside world.

The Office of Research, Innovation and Development continues to provide research support services across the following areas:

- Research and Grant Management
- Capacity Building
- Intellectual Property and Technology Transfer
- Ethics and Research Dissemination
- External Funds



We believe that this year has been an improvement on the previous year and it is our hope that the University shall continue to witness several successful research outcomes.



Professor Andrew Anthony Adjei

Director of Research

RESEARCH AND GRANT MANAGEMENT SERVICES

UNIVERSITY OF GHANA RESEARCH GRANTS

As part of the University's efforts to improve and promote its research activities, the University of Ghana during the 2014/2015 academic year, increased the funding thresholds for its Research Grants Scheme. These grants are awarded to enable faculty members to either explore new ideas that could leverage larger grants from other donors/ sponsors or to conduct inter and multi-disciplinary research aimed at addressing national developmental issues and capable of shaping or influencing policy in Ghana.

8th Call Review and Success Statistics

The 8th Call for Proposals was announced in September 2014. The call yielded fifty-six (56) applications out of which thirty-one (31) applications representing 55% of the total number were selected to receive funding. Grant awards totaling GHS 996,723 were made to Principal Investigators in the various disciplines ranging from Social Sciences to Health Sciences. Table 1 (on page 12) shows a breakdown of the number of awards and total funding awarded by College:



Mrs. Afua Yeboah

Senior Assistant Registrar in charge of Research & Grant Management



Table 1: 8th Call Distribution of Awards by College

COLLEGE	GRANT CATEGORY			TOTAL FUNDING WON (GHS)
	SEED FUNDS	INVESTIGATOR-LED	LARGE MULTI-DISCIPLINARY	
College of Health Sciences	5	5	5	376,484.00
College of Humanities	2	2	2	142,735.00
College of Education	-	1	1	29,873.00
College of Basic & Applied Sciences	1	11	11	447,631.00
TOTAL	8	19	4	996,723.00

The projects funded for the 8th call as well as information on the Principal Investigators are as shown in **Table 2 below:**

Table 2: Details of the 8th Call Grant Awards

GRANT TYPE	COLLEGE	PRINCIPAL INVESTIGATOR	TITLE OF PROJECT	DEPARTMENT	BUDGET (GHS)
SEED FUNDING	College of Basic and Applied Sciences	Dr. Samuel Iddi	The Effects of Misspecification of Nonlinear Link Functions in Marginalized Hierarchical Models	Statistics	4,347
	College of Health Sciences	Dr. Vincent Boima	Public perceptions of Kidney transplantation in Accra, Ghana	Medicine and Therapeutics	5,413
	College of Health Sciences	Dr. Akua Serwaa Obeng	Characterization of Campylobacter Associated Gastric Enteritis among Patients with Human Immunodeficiency Virus (HIV) in Accra, Ghana	Microbiology	7,476
	College of Health Sciences	Mr. Emmanuel Bonney	Six-Minute Walk Test: Reference Values and Prediction Equation among Adults in two university communities in Ghana	Physiotherapy	7,465
	College of Health Sciences	Dr. Augustine Adomah-Afari	A Study of Existing Relationship Marketing Orientation of Providers and Patients of Public and Private Sector Specialist Hospitals in Ghana	Health Policy, Planning and Management	6,405
	College of Health Sciences	Dr. Mercy Anna Nuamah	Plasma Leptin Concentration in Obese and Non Obese Pregnant Ghanaian Women and its Relationship with Gestational Outcome in Terms of Maternal Well Being and Fetal Outcome	Obstetrics and Gynaecology	6,350
	College of Humanities	Dr. George Domfe	Changes in the Living Conditions and Well-Being of Older Persons in Ghana, 1992-2012	Centre for Social Policy Studies	7,000
	College of Humanities	Dr. Mavis Dako-Gyeke	Experiences of Stigmatization and Discrimination: Insights and Perspectives of Cured Lepers and their Caregivers	Social Work	5,850



GRANT TYPE	COLLEGE	PRINCIPAL INVESTIGATOR	TITLE OF PROJECT	DEPARTMENT	BUDGET (GHS)
INVESTIGATOR-LED GRANTS	College of Basic and Applied Sciences	Dr. Patrick Asamoah Sakyi	Geochronological, Geochemical and Sr–Nd–Hf Isotopic Studies of the Bongo-Type Granitoids in the Palaeoproterozoic Bole–Nangodi Greenstone Belt of Ghana, West Africa	Earth Science	36,997
	College of Basic and Applied Sciences	Dr. Thomas Nii Narku Nortey	Sorghum Barley Brewers' Spent Grain as a Replacement for Wheat Bran in Broiler Diets	Animal Science	37,000
	College of Basic and Applied Sciences	Dr. Kwabena Doku-Amponsah	Development of a Statistical Model for Overdispersed Count Outcome with Many Zeros: An Approach for Direct Marginal Inference	Statistics	20,000
	College of Basic and Applied Sciences	Dr. Richard Osei-Amponsah	Genome Wide Association Study of Disease Resistance, Growth, Meat Quality, Reproduction Traits in the Ashanti Dwarf Pig (ADP) of Ghana and Its Crosses with Exotic Breeds	Animal Science	34,997
	College of Basic and Applied Sciences	Dr. Fred Aboagye-Antwi	Characterization and Identification of Environmental Factors that Influence the Survival Fitness of Bedbugs in Ghana	Animal Biology & Conservation Sciences	29,595
	College of Basic and Applied Sciences	Dr. Joseph Okani Honger	Importance, Identification of the Causative Organism and Control of Tree Decline, a New Disease of Mango in Ghana	Soil and Irrigation Research Centre	29,999
	College of Basic and Applied Sciences	Dr. Daniel Nukpezah	Understanding Stratification Effects on Sediment Nutrient Release and Internal Nutrient Loading in the Kpong Headpond	Institute for Environment and Sanitation Studies	35,000
	College of Basic and Applied Sciences	Dr. Joseph Ofori	Increasing Rice Productivity through Integrated Nutrient and Water management in Irrigated Rice Ecosystem	Soil and Irrigation Research Centre	29,925
	College of Basic and Applied Sciences	Dr. Eric Cofie Timpong-Jones	Estimating the Spatial Variability of Herbage Yield and Quality in the Coastal Savannah of Ghana	Livestock and Poultry Research Centre	35,000
	College of Basic and Applied Sciences	Dr. Bethel Kwansa- Bentum	Molecular Characterization of Cryptosporidium Parasites in Cattle that Graze around Water Treatment Plants in Southern Ghana	Animal Biology and Conservation Sciences	34,830
College of Basic and Applied Sciences	Professor Isaac Kojo Asante	Antimicrobial Properties, Antioxidant Activity and Bioactive Compounds Characterization of Mushrooms from Ghana	Botany	29,951	



GRANT TYPE	COLLEGE	PRINCIPAL INVESTIGATOR	TITLE OF PROJECT	DEPARTMENT	BUDGET (GHS)
INVESTIGATOR-LED GRANTS	College of Humanities	Professor Kwabena Asomanin Anaman	Assessment of the Economic and Social Benefits of Meteorological Services in Ghana	Institute of Statistical, Social and Economic Research	24,885
	College of Education	Dr. Michael Ayitey Tagoe	Migration from KEWL.NEXTGEN to Sakai: Students and Faculty Preparedness for Diffusion and Adoption of Sakia CLE at University of Ghana	University of Ghana Learning Centers	29,873
	College of Health Sciences	Dr. Josephine Akpalu	The Effect of Diabetes on Stroke Pattern and Outcome at the Korle Bu Teaching Hospital	Medicine and Therapeutics	38,000
	College of Health Sciences	Dr. Lydia Aziato	The Role of Religion in Labour Pain Management in Ghana: A Focus on Pentecostal/Charismatic Churches and African Traditional Religion	Adult Health	20,000
	College of Health Sciences	Dr. Samuel Antwi- Baffour	The Role of Plasma Membrane-derived Vesicles (PMVs) in Malaria Pathogenesis	Medical Laboratory Sciences	34,993
	College of Health Sciences	Professor Augustine Ankomah	HIV Prevention and Sexual Risk-Taking among Female Sex Workers in Oil Communities of Western Region, Ghana	Population, Family and Reproductive Health	34,918
	College of Health Sciences	Dr. Grace Korkor Ababio	Effects of Factor V Leiden Polymorphism on the Pathogenesis and Outcomes of Preeclampsia	Medical Biochemistry	34,984
	College of Humanities	Professor Peter Quartey	Rural Financial Intermediation and Poverty Reduction: Evidence from Ghana	Economics	25,000
LARGE MULTI-DISCIPLINARY GRANTS	College of Health Sciences	Dr. Edeghonghon Olayemi	Establishing a Prospective Cohort of Pregnant Ghanaian Women with Sickle Cell Disease	Haematology	89,964
	College of Health Sciences	Dr. Charlotte Osafo	Validation of Creatinine and Cystatin C Based Prediction Equations in Estimating Glomerular Filtration Rate in Adult Ghanaians	Medicine and Therapeutics	90,000
	College of Humanities	Professor Samuel Nii Ardey Codjoe	Women, Climate Change and Food Security in Ghana	Regional Institute for Population Studies	80,000



UGRF Grants Leverage Funding and Collaborations

The University of Ghana Research Fund (UGRF) grants awarded for faculty research has served as a stepping stone for leveraging other funding from various donors/sponsors and also contributed to the establishment of collaborations

with other institutions.

During the 2014/2015 academic year, funding and collaborations were secured by some beneficiaries of the UG Research Grant Scheme. Two of these researchers are:



Dr. John Kwame Boateng, a UGRF beneficiary and a faculty member of the School of Continuing and Distance Education was awarded a Science, Technology, Engineering and Mathematics (STEM) Seed Grant in collaboration with the University of Michigan, to conduct research on technology mediated faculty-student interactions among Ghanaian University students. This additional funding and collaboration was based on his UGRF project which sought to explore e-learning needs for adults in Central Region, Ghana for a Centre-based Distance Education programme.



Professor Benjamin Kwadwo Ahunu of the Department of Animal Science was also awarded a grant to work on his project titled "Characterisation and Breeding for a docile and highly productive grasscutter in Ghana". This project sought to breed a docile and productive grasscutter as well as help to enrich the curriculum of the Department of Animal Science. The foundation stock used in the study comprised of animals selected from different regions in Ghana and from improved breeds from The Republic of Benin. Findings from this study indicated wide genetic variation which could be exploited in targeted breeding work. Also, the growth curve of the grasscutter was shown to be adequately described by standard growth curves, in particular the Gompertz, which will further facilitate breeding and selection and improvement of the grasscutter. In addition to impacting grass cutter conservation to promote meat production in Ghana, this project led to a collaboration with the Kyoto Wildlife Research Centre and has contributed to improving the quality of teaching, learning and extension services at the Department of Animal Science.

UG Registers with the National Science Foundation, The UK Research Councils and WIPO Research

During the 2014/2015 academic year, the University of Ghana regularised its registrations with the *National Science Foundation (NSF)*, *WIPO Re:Search* and the *UK Research Councils through the Joint Electronic Submission (Je-S) System*. With these registrations now regularised, faculty members will now have access to and be able to respond to calls for proposals from these donors and most importantly serve as lead investigators on these projects since the university now has the capability and capacity to submit grant applications directly to these donors.

The National Science Foundation (NSF) is an independent federal agency created by the Congress of the United States of America in 1950 "to promote the progress of science; to

advance the national health, prosperity, and welfare; and to secure the national defense". The NSF is the funding source for approximately 24% of all federally supported basic research conducted by America's colleges and universities and also provides funding to eligible foreign institutions including the University of Ghana.

Je-S is the UK Research Councils' web-based Joint Electronic Submission System for grant applications and award administration. This is used by the Arts and Humanities Research Council (AHRC), Biotechnology and Biological Sciences Research Council (BBSRC), Engineering and Physical Sciences Research Council (EPSRC), Economic and Social Research Council (ESRC), Medical Research Council (MRC), Natural Environment Research Council (NERC) and the Science and Technology Facilities Council (STFC), as well as Innovate UK (formerly the Technology Strategy Board -TSB), Energy Technologies Institute (ETI) and National Centre for the Replacement, Refinement and



Reduction of Animals in Research (NC3Rs).

WIPO Re: Search is a consortium led by the World Intellectual Property Organisation (WIPO) in partnership with BIO Ventures for Global Health (BVGH), several leading pharmaceutical companies, academic institutions and research organizations worldwide. It acts as a gateway to a range of development-related tools, including training in Intellectual Property management. The University of Ghana has joined the consortium as a Provider and potential user to enable its faculty members gain access to an extensive range of knowledge assets, compounds, technology, and expertise provided by other private and public sector members. The University of Ghana's participation in this consortium will also enable it to identify opportunities for

collaboration and knowledge-sharing between members.

To date, ORID has regularised the University's registration with the following donors as shown below. ORID has systems in place for faculty members who want to submit applications to these donors. To submit grant applications to any of these donors, interested faculty members should:

- Contact the Research Development Officer assigned to their unit; or
- Send an email to ORID via orid-researchadmin@ug.edu.gh providing information on the grant opportunity being targeted.

University of Ghana's registrations with external donors



wellcometrust



National Institutes of Health (NIH)
(through Grants.gov, eRA commons and SAM) <http://www.nih.gov/>

Welcome Trust
<http://www.wellcome.ac.uk/>

European Union (EU)
<http://ec.europa.eu/research/participants/portal/desktop/en/home.html>

National Science Foundation (NSF)
(through Fastlane) www.nsf.gov

UK Research Councils
(through the Joint Electronic Submission System)
<https://je-s.rcuk.ac.uk/JeS2WebLoginSite/Login.aspx>

WIPO Re:Search
<http://www.wipo.int/research/en/>



UG Research affiliation attracts visiting research students from across the world

The University of Ghana (UG) Research Affiliation programme provides the opportunity for visiting research students to enjoy mentorship offered by experienced UG faculty members, gain access to UG's institutional resources such as laboratories, libraries and wireless networks as well as campus recreational facilities; and opportunities for research networking and collaboration.

Applications for the UG Research Affiliation programme are received from diverse institutions from Africa, North America and Europe. Since the programme was streamlined in the 2012/2013 academic year, the University of Ghana has received applications from thirty-one (31) different institutions. The range of applications in the various disciplines highlights the University's research strengths. The institutions from which these applications have been received are shown in Table 3 below:

Table 3: Applicants' Institution (UG Research Affiliation: 2012/2013 to 2014/2015)

NO.	NAME OF INSTITUTION	LOCATION
1	African Leadership Centre- King's College London	United Kingdom
2	American University	United States of America
3	Brandeis University	United States of America
4	East Stroudsburg University of Pennsylvania	United States of America
5	Federal University of Technology	Nigeria
6	Hamilton College	United States of America
7	Indian Institute of Advanced Study	India
8	International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) -Sacanna Agricultural Research Institute (SARI)	Mali
9	Justus Liebig University Giessen	Germany
10	Makerere University	Uganda
11	McGill University	Canada
12	Morgan State University	United States of America
13	Osun State University	Nigeria
14	Simon Fraser University	Canada
15	Stellenbosch University	South Africa
16	Stockholm University	Sweden
17	Syracuse University	United States of America
18	Tanzania Fisheries Research Institute	Tanzania
19	Universidad Autónoma de Barcelona	Spain
20	University College London	United Kingdom
21	University of British Columbia	Canada
22	University of Copenhagen	Denmark



NO.	NAME OF INSTITUTION	LOCATION
23	University of Edinburgh	United Kingdom
24	University of Florida	United States of America
25	University of Guelph	Canada
26	University of Kiel	Germany
27	University of Nigeria	Nigeria
28	University of Oxford	United Kingdom
29	University of Pavia	Italy
30	University of Pittsburgh	United States of America
31	University of Pretoria	South Africa

During the 2014/2015 academic year, the University of Ghana formally hosted seven (7) Research Affiliates (Visiting Research Students) with details in Table 4 below:

Table 4: Research Affiliates hosted at the University of Ghana in 2014/2015

Name of Affiliate	Affiliate Home Institution	Host Department/ Institute	Name of Mentor	Duration of Affiliation	Research Title
Mr. Humphrey Asamoah Agyekum	University of Copenhagen	Institute of African Studies	Dr. Samuel Ntewusu	1st January, 2014–31st December, 2014	Officers and Men: How Discourses of 'Professionalism' and Civility Transformed the Ghana Armed Forces
Ms. Akhona Pearl Nomvuyisi Mehlo	University of Pretoria	School of Law	Professor Kofi Quashigah	1st August, 2014 -30th November, 2014	Slaves of Men: The Girl Child in Ghana
Mr. Victor Lowilla	University of Pretoria	School of Law	Professor Nii Ashie Kotey	1st August, 2014 – 15th December, 2014	A bed of Thorny Roses: Ethico-Legal issues in Human Rights Fact-Finding
Mr. Paul Klugmann Currie	Stellenbosch University	Institute of Environment and Sanitation Studies (IESS)	Dr. Benjamin Dankyira Ofori	10th October, 2014 – 10th May, 2015	A Research Flow Typology of African Cities
Ms. Franziska Ollendorf	Justus Liebig University Giessen	Sociology	Dr. Dan-Bright Dzorgbo	18th November, 2014 –17th July, 2015	Transitional Responsibility in Agriculture on Effects of Transitional Corporate Social Responsibility in Ghanaian Cocoa Production
Mr. Samuel Olorunfemi Baiyeri	University of Nigeria	Crop Science	Dr. Mrs. Christiana Adukwei Amoatey	2nd February, 2015 – 29th February, 2016	Tuber Yield response of 36 African Yam Bean (<i>Sphenostylis stenocarpa</i>) Accessions to Organic Manure Amendment



IN FOCUS: A DIARY OF A MENTOR AND A MENTEE

This diary highlights the experiences, achievements and benefits gained by working together under the UG Research Affiliation programme from the perspectives of both the Visiting Research Student and the Mentor during the 2014/2015 academic year.

The Experience of a Visiting Research Student



Ms. Franziska Ollendorf

The Justus Liebig University Giessen, Germany

“Transnational Corporate Social Responsibility and Sustainable Development of the Cocoa Industry in Ghana”

In November 2014, I was successfully offered placement on the UG Research Affiliation Programme to conduct part of my research work for my dissertation titled *“Transnational Corporate Social Responsibility and Sustainable Development of the Cocoa Industry in Ghana”* which combines political economy theory with an empirical study in the Ghanaian cocoa industry. This work is part of my PhD programme in Political Science and in Rural Development Studies.

Social Science research requires a continuous inclusion of experiences, perspectives and knowledge from different actors in the research process. It enables the description of the plurality of social realities in a more context-sensitive and well-informed way. Thus, the discussion of my research topic and of the concept of my fieldwork with Ghanaian scholars was the major motivation to be affiliated with the University of Ghana.

The first eight (8) months of my research visit was devoted to preparation for the fieldwork during which period; I received supervision and continuous advice from my local mentor, Dr. Dan-Bright Dzorgbo, a well-known expert in Development of Sociology. His many suggestions and valuable insights in the rural settings in Ghana helped me to develop a sophisticated survey instrument which would adequately fit the context of Ghana's cocoa sector. Additionally, I took the opportunity to interview professors and scholars from other disciplines relevant for my dissertation topic, specifically from Geography, Agricultural Economics and Political Science. This enabled me to obtain a sound overview of the ongoing research activities on rural development issues and especially, studies related to



the cocoa sector currently taking place at the University of Ghana.

Next to the highly interesting insights I gained during these discussions, I also enjoyed participating in various academic events at the Department and other institutions of the University namely: the weekly research colloquium at the Department of Sociology, PhD courses, PhD Vivas, ISSER 'Roundtable Seminar on Youth, Employment and Agriculture' as well as seminars at the Institute of African Studies. This helped to obtain an improved understanding of many social aspects and current developments in

Ghana and provided me with very important background information for my study.

While on the field, I continuously discussed the intermediary findings at the Department and received substantial and logistical support from my local mentor during the whole period. The institutional affiliation also eased the research process and the establishment of contacts with some of the key players in the cocoa industry. I am very grateful for all the support, time spent and information shared during my visit and look forward to exchanging work results and experiences in the future.

The Experience of a Mentor



Dr. Samuel Nteuwusu

Institute of African Studies, University of Ghana

I had the opportunity of mentoring Mr. Humphrey Asamoah-Agyekum, a PhD student from the Department of Anthropology of the University of Copenhagen in Denmark from January to December 2014. His research was on Civil-Military relations in Ghana and examined *how discourses of 'professionalism' and 'civility' transformed the Ghana Armed Forces*.

Under my mentorship, Humphrey conducted extensive research with staff of the Ghana Armed Forces in Accra, Takoradi and Tamale and with a cross section of the Ghanaian Civil Society. In November 2014, he presented

some of his findings to the University of Ghana community at the History Department. Humphrey was very cooperative and ready to make use of suggestions useful to his research. Based on his research, I felt the need to collaborate with him to undertake research after his graduation. I have already published on the history and nature of Gold Coast Hausa Constabulary in colonial times. With the mentee's knowledge on modern or post-colonial military, the two of us shall embark on a broader historical research project that will investigate the similarities and differences between indigenous military establishments (Asafo, Kabonse, Mbonwura's) and 'modern' day military.



Yale University hosts first two UG fox fellows under the UG-Yale University partnership

At the beginning of the 2014/2015 academic year, **Mr Reuben Tete Larbi** and **Ms Mabel Oti-Boadi** both PhD candidates of the Regional Institute for Population Studies and the Department of Psychology respectively, travelled to Yale University to begin their one year Fox Fellowship. The fellowship is structured as an exchange and therefore UG also hosted Ms Jessica Brooks, a fellow from Yale University who was affiliated to the Institute of Environment and Sanitation Studies.

Mr Larbi, during the fellowship period, worked on his research titled *"Climate change and schistosomiasis transmission in the endemic communities in Ghana: Investigating the effect of risk perceptions"*, a study which is expected to contribute to the understanding of climate change and schistosomiasis transmission relations and provide an insight on how risk perception influences

schistosomiasis infection.

Ms. Oti-Boadi on the other hand, worked on her research titled *"Examining the relationship between Africentric worldview and psychological well-being among primary caregivers of children with intellectual disability in Ghana"*, a study which aimed to examine the interpretations primary caregivers of children with intellectual disability ascribe to their experiences and how they cope.

The Fellowship provided a platform for the UG Fellows to acquire knowledge and relevant skills as well as provided an opportunity for the UG Fellows to network with other Fox Fellows and global subject-area experts in attempt to foster possible/future collaborations between the University of Ghana and other institutions worldwide. In addition, the programme also exposed the Fellows to different cultures and provided an opportunity for the Fellows to participate in extracurricular activities (such as the Yale Africa Initiative events, Ghana-China dinner and Fox thanksgiving).

IN FOCUS:

Experience from the 2014/2015 Fox International Fellowship



Reuben Tete Larbi

PhD candidate – Regional Institute for Population Studies (2014/2015 Fox International Fellow)

"The Fox International Fellowship at Yale University was a life-transforming experience."

The exposure to different cultures, the great academic opportunities and the professional network was awesome. I had the opportunity to attend some conferences and workshops where I met a number of influential writers in my field. Further, visiting some historic places like the initial migrants' destination in Galveston, and its implication on infectious disease transmission provided a new perspective



of global issues on population and health. In addition, access to Yale library and other academic resources enhanced my progress.

While in Yale, I took some relevant courses and worked on my PhD research and presented it at various platforms. The useful comments and contributions that I received, particularly at the Fox Fellowship seminar series helped to

shape my work. This research is expected to provide in-depth understanding of schistosomiasis control in Ghana, and to make useful policy recommendations towards its control and eradication. " I am very grateful to the University of Ghana, Fox team, and to Yale University for offering me this unique opportunity."



Mabel Oti-Boadi

*PhD Candidate – Department of Psychology
(2014/2015 Fox International Fellow)*

The two semesters I spent at Yale University have given me the exposure to different cultures, people and languages. It was an amazing year at Yale with the people, the weather, and academic resources. I was privileged to have met Mr. and Mrs. Fox, the sponsors of the programme. The spirit of entrepreneurship and philanthropy has been rekindled in me.

" The Fox fellowship has positively impacted on my educational life. I have the sense of urgency in helping my institution and fellow students of University of Ghana put up solutions to some of the challenges confronting the research capabilities of students. Most of my goals set out at the beginning of the fellowship were achieved and others are still in the process of being achieved. The quality of my thesis improved and has subsequently been submitted. I believe the capacity that I have built over the period will continue to energize me till the total realization of my academic goals."

"The Fox fellowship at Yale University promotes leadership qualities of deserving students around the globe and improving upon their appreciation of cultural values of other parts of the world especially the American culture. "



2015/2016 Fox International Fellowship

For the 2015/2016 academic year, Yale University is hosting one (1) fellow, Mr. Johnson Appiah-Kubi of the Department of Economics. Mr. Appiah-Kubi's research focuses on the relationship between risk preferences, attitudes and personality traits of people and the labour market. The University of Ghana (through the Institute of Environment and Sanitation Studies) is also hosting Ms Jassica Brooks a fellow from Yale University for the same period.



Bromkamp Endowment Continues to Support UG Masters' Level Training

The Bromkamp Endowment has since 2003 offered scholarships to UG graduate students enrolled on MPhil programmes in economics related disciplines. The Scholarship was instituted by Dr. Joachim Bromkamp who was the Honorary Consul of Ghana at the Stifterverband in Germany. Each year, up to three (3) high performing graduate students who have indicated the commitment to pursue an academic career are given the award.

The award has a current value of USD 2,000 per academic year for two academic years.

For the 2014/ 2015 academic year, four (4) students from the Departments of Accounting and Finance of the University of Ghana Business School were selected to receive a scholarship of USD 4,000 each to support their masters' programmes.



"Gender and Accounting Education in Ghana"

Ms. Alice Anima Aboagye, an MPhil student of the Department of Accounting is working on her master's dissertation titled *"Gender and Accounting Education in Ghana"*. Ms. Aboagye seeks to identify the role of gender in the teaching of accounting, ascertain whether gender plays a role in the choice of accounting as a majoring area of study and to determine the performance of male and female accounting students.



“Financial Access, Economic Growth and Poverty Reduction in Africa”.

Mr. Daniel Asante-Amponsah, an MPhil Finance student is researching on *“Financial Access, Economic Growth and Poverty Reduction in Africa”*. His dissertation aims to establish the relationship between financial access and poverty reduction, the relationship between economic growth and poverty reduction and also examine the impact of financial access and economic growth on poverty reduction in Africa.



“Pricing Decisions of state-owned Enterprises in Ghana”

Mr. Justice Asante, an MPhil student of the Department of Accounting is researching on the *“Contemporary Management of Accounting Systems in the Public Sector”*. The study which is being carried out within the Ghanaian public sector seeks to examine the level of adoption of management accounting systems among state owned enterprises in Ghana, provide evidence of benefits derived from the adoption of the systems in state owned enterprises and examine factors that influence the choice of management accounting systems in these state owned enterprises.



“Effects of Corporate Governance on Productivity of Ghanaian Banks - A Malmquist DEA Approach”

Courage Hodey, an MPhil student of the Department of Accounting is researching on *“Effects of Corporate Governance on Productivity of Ghanaian Banks - A Malmquist DEA Approach”* which aims to ascertain the level of integration of sustainability in accounting education in Ghana, examine the process of development of sustainability courses in some institutions and explore factors that hinder or promote sustainability education in Ghana.

Over the years, the Bromkamp Endowment has shown immense support to the University of Ghana through the provision of scholarships to University of Ghana students which has better positioned its beneficiaries to complete their programs and contribute to their fields of study.



Association of Commonwealth Universities Awards early career Academic grants to University of Ghana Faculty members

The Association of Commonwealth Universities (ACU) as part of its centenary celebrations announced an academic grant for early career faculty members for its member universities. The grant enables faculty members to attend various conferences/training programmes in their fields of study which will contribute to their career development and/or progression.

University of Ghana submitted thirteen (13) applications for consideration out of which four (4) were successful. The awardees were among forty (40) winners selected from a total of 170 applicants. Each of the University of Ghana award winners received an amount of GBP2,000 to cover their travel costs, conference fees, accommodation and subsistence costs. The beneficiaries of the grant are:



Ms. Cecilia Smith, an Assistant Lecturer of the Department of Pathology, had the opportunity to participate in the *Beaston International Cancer Conference* as a beneficiary of the Early Career Academic Grant 2015 award. The conference took place at the Cancer Research UK Beaston Institute from the 5th-8th of July, 2015 and afforded Ms. Smith the opportunity to learn about new technologies in laboratory investigations and analysis and their appropriate applications. She also met and established contact with researchers, both established and early career, with whom she hopes to collaborate in the future.



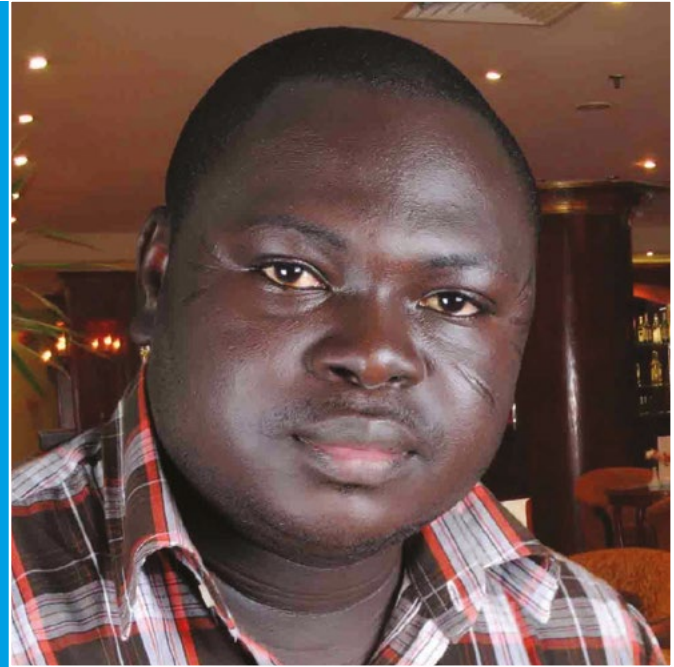
Mr. Emmanuel Abitty, a Teaching Assistant at the Department of Earth Sciences participated in the 4th Annual International Conference on Geological and Earth Science (GEOS 2015) held in Singapore from 5th-6th October, 2015. Mr Abitty delivered an oral and full paper presentation titled 'Potassic magmatism in southern Ghana: Inference from geochemistry of the Palaeoproterozoic "Banso-type" granitoids'.

The conference provided the opportunity for Mr. Abitty to receive quality feedback/comments on his work and also provide networking and mentorship opportunities.



Mr. Emmanuel Kwaku Ofori, Assistant Lecturer of the Chemical Pathology Department participated in the World Diabetes Congress in Vancouver, Canada from 30th November to 4th December, 2015 where he presented a paper titled: *"Primary Hypogonadism and Obesity in Ghanaian Men with Type 2 Diabetes."*

The conference granted him the opportunity to interact with local and international scientists/ researchers, health professionals, policy makers and other representatives. This is expected to enhance his research and teaching capabilities as well as acquire new skills and knowledge in the design of new and appropriate therapies for the management of diabetes.



Mr. Siaw Appiah-Adu is an Assistant Lecturer with the Department of Archaeology and Heritage Studies. The Early Career Academic Grant award enabled Mr. Appiah-Adu to participate in the Prehistoric Studies Skills Development Workshop at the University of Liverpool. The visit to Liverpool was hosted by Professor Lawrence Barham and was fashioned to incorporate classes and laboratory sessions for the awardee as a visiting researcher. Mr. Appiah-Adu had the opportunity to acquire practical skills related to the analysis of prehistoric tools and associated palaeo-environmental issues and conditions as well as network with other scholars in the field of environmental sciences. He also gave a lecture at the Archaeology seminar series related to his research in Komaland, Ghana



University of Ghana Partners In USHEPiA Programme

The University of Ghana in partnership with the University of Cape Town (UCT) in South Africa, Makerere University in Uganda and the University of Nairobi in Kenya is implementing the Universities Science, Humanities, Law and Engineering Partnerships in Africa (USHEPiA) programme to build the human capacity of African institutions and foster collaborations between African Universities. The USHEPiA programme aims to address the issues of faculty retention in order to promote teaching and research within the partner Universities.

The programme enables fellows to spend time both at UCT as the “away” university and at their home university.

The fellows also get to enjoy joint supervision from supervisors from both the home and away institutions. Under this programme, funds are available for the home supervisor to visit UCT for similar purposes. Re-entry grants are also made available to the fellow to ease their re-entry into the teaching life at their home institutions. The levels of funding vary depending on the need of the fellow.

The University of Ghana has committed to supporting up to ten (10) faculty members each academic year through this programme in specific disciplines for a five-year period.

Table 5: Scholarships Calendar

Grant / Scholarship Name	Target Group	Timelines	
		Announcement Date (Provisional)	Deadline
Bromkamp Scholarships	Masters' students	January of every 2 years	1 month after announcement
CAPREx Post-doctoral Fellowships	Faculty members on PhD programme	October of each academic year	1 month after announcement
Commonwealth Scholarships/ Fellowships	Faculty members/ PhD students	October of each year	4 – 6 weeks after announcement
Fox Fellowships	Faculty members/ PhD students	October/November of each year	6 weeks after announcement
USHEPiA Scheme	Faculty members on PhD programme	November of each year	6 weeks after announcement
UG Research Grants	Faculty members	September of each academic year	4 – 6 weeks after announcement



Pre- and Post-Award Research Support Services

As part of ORID's mission in promoting, coordinating and facilitating research activities in the University, ORID offers a range of research and grant management services to members of the University community. These include:

- Circulating funding opportunities
- Review of proposals and budgets for submission to external donors;
- Provision of Letters of Endorsement/Support for research grant applications, fellowships and scholarships outside UG;
- Negotiation and review of research contracts and agreements;

- Provision of signature of approved/ authorized institutional representative on research contracts and consultancies; and
- Facilitation of the submission of progress/technical and financial reports to external donors.

This institutional support offered by ORID is delivered through decentralized (i.e. College/ School level through the Research Development Officers) and centralized (i.e. through the central ORID office) systems. The aim is to provide the necessary administrative and management support which allow our researchers to focus on the technical and/or science aspects of research proposals and projects.



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
- Download and complete the **APPLICATION FORM** and submit with requisite documents via email to orid-researchadmin@ug.edu.gh at least one month before the intended date of commencement of the affiliation.

ORID
Office of Research, Innovation & Dev't

RESEARCH SUPPORT PROCESS

SUBMISSION OF DOCUMENTS

- Researcher contacts Research Development Officer (RDO) for guidance
- Researcher downloads and completes the Research Support Request Form from orid.ug.edu.gh/lettersofsupport.php
- Completed form and supporting documents submitted to RDO
- RDO forwards documents to Dean/Director for appropriate endorsement and then submits to ORID

CHECKING THE DOCUMENT

Upon receipt, documents will undergo a preliminary review with respect to the type/nature of support and required documents:

Letter of Endorsement/ Support
(to apply for research grants outside of UG or
to apply for a Fellowship)

- Completed grant application form and/or proposal; • Budget;
- Completed and endorsed request form;
- Indication from the HoD/Dean/Director how the grant will benefit the applicant, department and the school as a whole;
- Format for letter of support (if provided by funder/ donor).

**Signature of Approved/
Authorised Institutional Head**
(for research contracts, consultancies etc.)

- Approved proposal;
- Budget;
- Electronic copy of contract agreement to be signed and send to orid at orid-researchadmin@ug.edu.gh through the Research Development Officer.

ACCEPTANCE AND PROCESSING

- Requests with satisfactory documentation would be recommended for approval.
- Requests without required documentation will be returned to the respective RDO for the necessary attachments.

SIGNING OF LETTERS OF SUPPORT/ ENDORSEMENT OF DOCUMENTS

Letters of support signed/ documents endorsed by Pro Vice-Chancellor (RID) and original copy returned to PI

Please take note that a Minimum of five (5) working days is required for processing and feedback

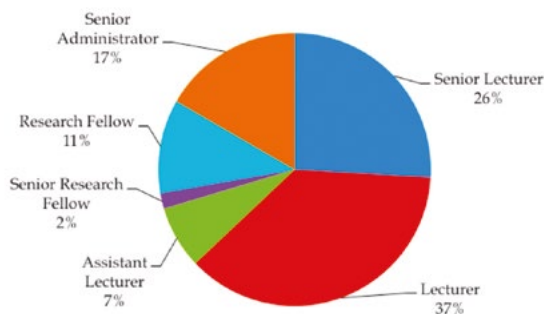


CAPACITY BUILDING

Conference Grants

The 2014/2015 academic year has been an interesting year for conference grants management at ORID. A total of forty-five (45) applicants were awarded conference grants to attend workshops, seminars and training programmes all over the world with a total value of GHS 207,205.49. Out of this number, 55% was awarded to early career faculty members. Of the remaining, 45% was awarded to mid-career faculty members. Out of the total, 17% was awarded to Senior Members in Administration

2014/2015 ACADEMIC YEAR CONFERENCE GRANT AWARDS BY POSITION



Ms. Empi Baryeh
Assistant Registrar in charge of Capacity Building

Additionally, 25% of grants went to female faculty and staff recipients. Notably, the number of conferences, seminars and training programmes organised at UG is increasing. For the 2014/2015 academic year, GHS 60,000 was awarded to nine (9) departments to organise both local and international meetings, a 50% increase from the last academic year.

SPOTLIGHT ON SELECTED CONFERENCE GRANT BENEFICIARIES

Conferences/ Workshops Attended



Mrs. Theodosia Adanu

Mrs Theodosia ADANU, a *Senior Assistant Librarian*, of the Balme Library was awarded USD 1,500 to attend the Library Research Seminar VI in Champaign, Illinois, USA, from 7th - 9th October, 2014. On her motivation to attend the conference, Mrs Adanu indicated that *"the theme of the conference/seminar, the Engaged Librarian: Libraries Partnering with campus and community caught my attention. I was keen to learn what others are doing to partner with campus and knowing the kinds of research academic librarians were engaged in."*

Mrs Adanu reported that she gained invaluable knowledge on the foundational role of library services in research, as well as the importance of information literacy skills as a life skill with many stakeholders.



Dr. Nana Akua Anyidoho

Dr. Nana Akua ANYIDOHO, a Senior Research Fellow, of the Institute of Statistical, Social and Economic Research (ISSER) received USD 1,500 to attend and present a paper at the 57th Annual Meeting of the African Studies Association held in Indianapolis, USA, from 20th - 23rd November, 2014. The ASA annual conference is the biggest meeting of African Studies scholars in the world.

Commenting on the benefits from attending the conference, Dr. Anyidoho said, *"The conference provided a great forum for interaction with academics from all over the world, thus enabling me to deepen ties to the global community of scholars studying Africa. I also received useful feedback on my paper presentation on "Fighting structural violence: The strengths and limits of coalition". The response to the paper confirmed the importance of the topic and motivated me to put in a proposal for funds to carry out a follow-up study that would strengthen the empirical basis of the paper."*



From Left: Mr. Ezekiel Acquah, Mrs Diana Owusu Antwi, Mrs. Afia Serwaa Attrams

Mrs. Afia Serwaa ATTRAMS and Mr. Ezekiel ACQUAAH, two Research Development Officers (RDOs) received conference grant support to present papers in the 2015 Association of Commonwealth Universities (ACU) / South African Research and Innovations Management Association (SARIMA) conference, held in Johannesburg, South Africa, from 10th – 14th May, 2015. The theme of the conference: *Research and Innovation for Global Challenges* aimed to identify and promote good practices, structures, policies and incentives to ensure that research innovation and technology transfer play a critical role in global development. The conference brought together key role players, including research and higher education institutions, funders, policy makers and the private sector in an open, international dialogue.



Conferences/ Workshops Organised

The Balme Library was awarded a grant of GHS 5,000 in support of the organisation of a Workshop on records management, digitisation and institutional repository at the Ghana-Korea Information Access Centre, Balme Library, University of Ghana, Accra. The workshop was held from 8th – 10th, April 2015 and provided training for twenty-seven (27) participants comprising Librarians, Records Managers and Researchers in the University and five other participants from the National Accreditation Board, Ghana Standards Authority, Ghana Institute of Journalism and Kwame Nkrumah University of Science and Technology (KNUST). Forty-four percent (44%) of the participants were females. Participants gained practical hands-on training in document preparation, digitisation techniques, preservation and the management of institutional repositories.

The workshop highlighted the need for further training to ensure that staff develop the relevant skills to manage the entire process of digitising material in their institutions. It also underscored the need for ethical and security controls when digitising sensitive material such as hospital records and staff administrative records



Mr. Francis Boachie (Deputy CITO in charge of infrastructure) presenting a certificate to a participant.



Participants at a training workshop organised by the Balme Library


**CONFERENCES
ATTENDED**
Table 6: Conference Grants Awarded for the 2014-2015 Academic Year

Nº	Awardee	Department	Conference Title	Venue	Dates	Amount Awarded	Paper(s) Presented
1	Dr. Vivian TACKIE OFOSU	Family & Consumer Science	American Association of Family and Consumer Science 105th Annual Conference and International Federation of Home Economics	Missouri, USA and Ontario Canada	20th-28th July, 2014	USD,1500	Quality versus Quantity: the use of observation by early childhood educators in improving the performance of children enrolled in preschool programmes in Ghana
2	Dr. Ransford GYAMPO	Political Science	Student Representation in Higher Education Governance in Africa	Missouri, USA and Ontario Canada	20th-28th July, 2014	USD,1500	The Politization of the National Union of Ghana Students and Its Effects on Students Representation
3	Prof. Kwaku TANO-DEBRAH	Nutrition and Food Science	17th World Congress of International Union of Food Science and Technology	Montreal, Canada	17th-21st August, 2014	USD,1,000	Application of Starter Cultures in Traditional Cocoa Fermentation to improve the quality of Cocoa Beans
4	Dr. John BOATENG	Institute of Continuing & Distance Education	Exploring Mechanism for effective E-Learning integration into a Centre-Based Adult Education Program	Michigan, USA	August, 2014 January, 2015	USD,1,450	Exploring Mechanisms for Effective E-Learning Integration into a Center-Based Adult Education Program
5	Dr. Vera Adobe ESSUMAN	Surgery	American Academy of Ophthalmology 2014 meeting	Chicago, USA	16th-22nd October, 2014	USD, 1,500	Safety and Efficacy of combined Trabeculotomy-Trabeculectomy with Intra-Operative Mitomycin C for Developmental Glaucoma in Ghanaian Children, a West African Population
6	Mrs Nana Oye AKUFFO	NMIMR	2014 Society of Research Administrators International Annual Meeting	San Diego, USA	17th -23rd October, 2014	USD, 1,500	Did not present paper
7	Mrs. Theodosia ADANU	Balme Library	Library Research Seminar VI	Champaign, Illinois, USA	7th -9th October, 2014	USD, 1,500	Did not present paper
8	Dr. Isaac Julius ASIEDU-GYEKYE	School of Pharmacy	3rd International Summit on Toxicology and Applied Pharmacology	Chicago, USA	20th-22nd October, 2014	USD,1,500	Toxicological Study into new Molecules in Treating Raw Water to make it Potable
9	Prof. Agnes Simpson BUDU	Nutrition and Food Science	17th world Congress of Food Science and Technology	Montreal, Canada	17th-21st August, 2014	USD, 1,000	1. Evaluation of Product Quality and Shelf Life of Canned Peanut Soup Base. 2. Does Knowledge of the Benefits of a Food Product Affect its Consumption? The case of Consumption of Functional Foods by Ghanaians in the Accra Metropolis.



Nº	Awardee	Department	Conference Title	Venue	Dates	Amount Awarded	Paper(s) Presented
10	Dr. Mohammed-Aminu SANDA	Organisation and Human Resource Management	The 4th Congress of the International Society for Cultural and Activity Research	Sydney, Australia	20th-28th July, 29th September -4th October, 2014	USD 1,500	Significance of Systematic Structural Theory of Activity in Organisational Activity Research
11	Dr. Leander KANDILIGE	Centre for Migration Studies	Determinants of International Migration	Oxford, UK	23rd -25th September, 2014	USD 1,500	Did not present paper
12	Dr. Gloria ANSA	University Hospital	Measuring Progress	Oxford, UK	25th -27th September, 2014	USD 1,500	Health System Barriers and Facilitators of Integration of Tuberculosis (TB) and HIV Services in Ghana
13	Mrs. Regina AFARI BOATENG	Sports Directorate	EASM Conference-Social and Commercial Impact of Sports	Coventry, UK	9th -12th September, 2014	USD 1,500	Did not present paper
14	Dr. Daniel NUPKEZAH	Institute for Environment and Sanitation Studies	Environmental Informatics (Enviroinfo) 2014 Conference	Oldenburg, Germany	10th -12th September, 2014	USD 1,500	Electronic Waste Risk Assessment and Management in Ghana
15	Mr Solomon SULEMANI	Library (College of Health Science)	Association for Health Information and Libraries in Africa (AHILA) 14th Biennial Congress	Dar es-Saalam Tanzania	20th -24th October, 2014	USD 1,500	1. Copyright in an Era of Open Access, User Rights versus Authors Rights. 2. The Role of the Contemporary Academic Librarian in the African Context
16	Dr. Doris Susannah ESSAH	History	Rethinking Violence Reconstruction and Reconciliation Conference	Indianapolis, USA	20th -23rd November, 2014	USD 1,500	Violence, Poverty and Gendered Reconstruction in the Gold Coast Colony
17	Dr. Koffi Ganyo AGBEFLE	French	Teaching Conditions, Conditions for teaching Realities Implications, Challenges and Interacting for Languages in Multilingual Context	University of Lumiere, Lyon	8th -17th January, 2015	USD 1,500	1. Tertiary Teachers in Sub-Saharan black Africa: Cross-sectional study of the conditions and motivation of teachers in Ghana and Togo and their impact on the profession. 2. Challenges in the teaching of foreign languages in multilingual context in Africa: pedagogical methodologies for the French teacher in Ghanaian multilingual school settings.
18	Professor Joseph A. YARO	Geography & Resource Development	Diversity of Peasant Agriculture and Sustainable Rural Development	Harare, Zimbabwe	19th - 23rd January, 2015	USD 1,500	Food Security in Changing Global Commodity Systems: A West African Perspective



Nº	Awardee	Department	Conference Title	Venue	Dates	Amount Awarded	Paper(s) Presented
19	Dr. Nana Akua ANYIDOHO	Institute of Statistical, Social and Economic Research	57th Annual Meeting of the African Studies Association	Indianapolis, USA	20th -23rd November, 2014	USD 1, 500	Fighting Structural Violence: The Strengths and Limits of Coalition
20	Dr. Anthony DANSO-APPIAH	Epidemiology and Disease Control	African Evidence Net Colloquium 2014	Johannesburg, South Africa	25th -28th November, 2014	USD 1, 500	Increasing the use of Evidence in decision making in low and middle income Countries
21	Dr. Justice Nyigmah BAWOLE	Department of Public Administration and Health Service Management	International Research Society for Public Management Conference 2015	University of Birmingham, UK	30th March -1st April, 2015	USD 1, 500	Local Institutional Networks for Downward Accountability of NGO's: "Weapons of the Weak"unexplored?
22	Professor Emmanuel Ohene AFOAKWA	Nutrition and Food Science	The 249th American Chemical Society's National Meeting and Exposition	Denver, Colorado, USA	22nd -26th March, 2015	GHS 4,500	1. Roasting Effects on Phenolic Content and Free-Radical Scavenging Activities of Pulp Pre-conditioned and Fermented Cocoa (Theobroma Cacao) Beans. 2. Effects of Pod Storgae and Fermentation Duration on Total polyphenols, O-diphenols and Anthocyanin concentrations in Cocoa (Theobroma cacao) Beans.
23	Dr. Samuel Yaw OPOKU	Radiography	Pan African Congress of Radiology and Imaging	Nairobi, Kenya	17th – 20th February, 2015	USD 1, 500	Assessment of Safety Standards of Magnetic Resonance Imaging at the Korle Bu Teaching Hospital in Accra, Ghana
24	Dr. Gebremedhn H. Gebreyesus	Physics	Quantum Many -Body System far from Equilibrium: Quench Dynamics, Thermalisation, and Cold-Atom Experiment Workshop	Stellenbosch, South Africa	9th -13th March, 2015	USD 1,200	Did not present paper
25	Professor George OWUSU	Geography & Resource Development	Third Borders and Identity Conference (BIC 2015)	Berlin, Germany	16th -19th March, 2015	USD 1,500	Decentralized Development Planning and Fragmentation of Regional Development in Ghana: The Case of the Greater Accra Metropolitan Area



Nº	Awardee	Department	Conference Title	Venue	Dates	Amount Awarded	Paper(s) Presented
26	Dr. Clement AKOTSEN-MENSAH	Forest and Horticultural Crops Research Centre	89th Conference of the South-Eastern Branch of Entomological Society of America	Mississippi, USA	15th - 18th March, 2015	USD 1,500	Performance of Pimenta dioica Leaf Extract as an Attractant for Bactrocera Invadens in Sweet Orange Plantations in Ghana.
27	Dr. Adote ANUM	Psychology	International Convention of Psychological Science	Amsterdam, Netherlands	12th - 14th March, 2015	USD 1,500	The Link between Solving a Structured Puzzle and Meeting life Changes in School Age Children in Ghana, Bangladesh and Tanzania.
28	Mrs. Afia Serwaa ATTRAMS	College of Humanities	Association of Commonwealth Universities & South Africa Research and Innovation Management Association	Johannesburg, South Africa	10th - 15th May, 2015	USD 500	Growing and Rewarding Research Through Incentives - Pathways
29	Mr. Ezekiel ACQUAAH	College of Basic and Applied Sciences	Association of Commonwealth Universities & South Africa Research and Innovation Management Association	Johannesburg, South Africa	10th - 14th May, 2015	USD 500	Importance of Institutional and National Policies to Incentivise Research and Innovation for National Development
30	Mr. Emmanuel FRIMPONG	Physiology	Introductory Seminars	University of Witwatersrand, Johannesburg, South Africa.	1st - 31st May, 2015	USD 1,500	1. Effects of Acute Eccentric Exercise Stimulus on Muscle Injury and Adaptation; 2. The Effect of Unilateral Knee Arthroplasty (TKA) on Objectively Measured Physical Activity and Sedentary Behaviour of Osteoarthritis Patients.
31	Dr. Moses NII-DORTEY	Institute of African Studies	43rd World Conference of the International Council for Traditional Music (ICTM)	Astana, Kazakhstan	16th - 22nd July, 2015	USD 1,000	Re-defining African Traditional Theatre in Ghana: Saka Acquaye's Folk Opera's
32	Dr. Edward NANBIGNE	Institute of African Studies	43rd International Council for Traditional Music (ICTM) World Conference	Astana, Kazakhstan	16th - 22nd July, 2016	USD 1,000	Power and Conflict: Music Creativity and Performance among the Dagaaba of North Western Ghana



Nº	Awardee	Department	Conference Title	Venue	Dates	Amount Awarded	Paper(s) Presented
33	Mr. Abdul KARIM	Theatre Arts	Pedagogy and Theatre of the Oppressed	United States of America	4th-16th June, 2015	USD 1,500	Collective Struggle and the Common Cause: Theatre and The Reformation Process in Ghanaian Prison Systems
34	Dr. Lord MENSAH	Finance	Twenty Second International Conference	University of Renne, France	20th-22nd May, 2015	USD 1,500	Non-Linear Approach to Random Walk Test in Some selected African Countries
35	Dr. Samuel IDDI	Statistics	European Meeting of Statisticians, 2015	Amsterdam, Netherlands	6th-10th July, 2015	USD 1,500	Statistical Model for Overdispersed Count Outcome with Many Zeros: An Approach for Direct Marginal Inference
36	Dr. Eric OSEI-ASSIBEY	Economics	2015 African Finance Journal Conference	Cape Town, South Africa	20th-21st May, 2015	USD 1,500	Regulatory Capital and its Effect on Credit Growth, Non-Performing Loans and Bank Efficiency: Evidence from Ghana
37	Mrs. Gloria Agyeiwaa BOTCHWAY	Mathematics	Mathematical Modeling and analysis of complex systems	Kenya	20th-31st July, 2015	USD 1,500	Did not present paper
38	Dr. James Baba ABUGRE	Organisation and Human Resource Management	International Academy of African Business and Development	Nairobi, Kenya	13th-17th May, 2015	USD 1,500	Training as an Effective Antecedent of Employee Commitment in Organizations: A Review of Extant Literature
39	Mr. Jerome MASAMAKA	English	The 41st Annual Conference of African Literature Association (ALA)2015	Bayreuth University, Nuremburg, Germany	3rd-6th June, 2015	USD 1,500	1. Ayi Kwei Armah's Egalitarian Africa-An Authentic African Way or An Artistic Utopian Propaganda. 2. The National Literature of Nigeria in the Light of Bernth Lindfor's Claim
40	Dr. Genevieve Cecilia ARYEETEEY	Health Policy Planning and Management (HPPM)	11th World Congress of the International Health Economics Association (Ihea)	Bocconi University, Milan, Italy	12th-15th July, 2015	USD 1,500	Accelerating Attainment of Universal Health Coverage in Sub-Saharan Africa through Strategic Purchasing of Health Care Services - Lessons from the Ghanaian Experience



Nº	Awardee	Department	Conference Title	Venue	Dates	Amount Awarded	Paper(s) Presented
41	Mr. Alexander MARTIN-ODOOM	Medical Laboratory Sciences	ASM2015 115TH General Meeting	New Orleans, Louisiana, USA	30th May- 2nd June, 2015	USD1,500	Did not present paper
42	Prof. Daniel AVORGBEDOR	Music	43RD World Conference of the International Council for Traditional Music http	Astana, Kazakhstan	16th-22nd July, 2015	USD1,500	Invention, Resistance and Resistency; the Pan-African Orchestra in Context.
43	Dr. Ernest Yaw TWENEBOAH-KODUAH	Marketing	The International Journal of Arts & Sciences' (IJAS) International Conference for Business and Economics	Boston, Massachusetts, USA	26th-30th May, 2015	USD1,500	Social Marketing Interventions on Demestic Energy Conservation in Ghana
44	Mr. Sampson ADDO	CBAS	Global Bioethics Initiative Summer School	New York City, USA	15th June – 18th July, 2015	USD1,500	Did not present paper

CONFERENCES ORGANISED

Nº	Awardee	Department	Conference Title	Venue	Dates	Amount Awarded	Paper(s) Presented
1	Dr. Mark TETTEY	College of Health Sciences	7th Biennial Scientific Conference	Ghana College of Physician and Surgeons	24th – 26th September, 2014	GHS 10,000	Medical Emergencies and Trauma in Ghana, How prepared are we?
2	Professor Charles MATE-KOLE	Psychology	4th Annual Psychology-Psychiatry Conference	University of Ghana, Legon	24th October, 2014	GHS 5,000	Emerging Trends in Mental Health in Ghana: Collaborations, Partnerships and Challenges
3	Dr. Mawuli ADJEI	English	Kofi Awoonor International Symposium	University of Ghana, Legon	18th -19th September, 2014	GHS 5,000	Kofi Awoonor and the Challenge of History
4	Professor. Samuel N. A. CODJOE	RIPS	3rd Climate Change and Population Conference on Africa	University of Ghana, Legon	22nd – 25th July, 2014	GHS 10,000	Climate Change, Migration & Security
5	Dr. Eric Kwasi OFORI	Radiography	Quality Assurance for Diagnostic Radiographers	Ghana Medical Association Hall, Korle-Bu	10th - 11th April, 2015	GHS 5,000	Ensuring Quality Radiographic Services in Ghana- The Role of Quality Assurance
6	Ms Gifty Boakye	Balme Library	Workshop on Records Management, Digitization and Institutional Repository	Ghana-Korea Information Access Centre, Legon	17th -27th March, 2015	GHS 5,000	Link to the presentations: http://balme.ug.edu.gh/index.php?option=com_content&view=article&id=286&Itemid=316



Nº	Awardee	Department	Conference Title	Venue	Dates	Amount Awarded	Paper(s) Presented
7	Dr Elsie Effah KAUFMANN	Biomedical Engineering	8th Annual Ghana Biomedical Convention (GBC) Conference	ISSER Conference Facility	29th-31st July, 2015	GHS 5,000	Cutting Edge Biomedical Research for National Development
8	Dr Yaa COLE	Teacher Education	International Conference on Education Research for Development in Africa (ICERDA)	ISSER Conference Facility	4th-5th May, 2015	GHS 5,000	Harnessing Education Research for Evidence-Based Development
9	Professor Perpetua S. DADZIE	Information Studies	Fourth International Conference on African Digital Libraries and Archives (ICALLA -4)	Institute of African Studies	28th-29th of May, 2015	GHS 5,000	Strategic Frame Work And Action Roadmap for Africa's Digital Libraries and Archives

FACULTY DEVELOPMENT GRANT

As UG advances toward achieving its objective of ensuring that all faculty members have a minimum of a PhD degree, the Faculty Development Grant has seen a steady reduction in the number of applicants over the last three academic years. This reduction in numbers enabled an increase in the maximum possible grant per awardee by over 200%, resulting in eleven (11) faculty members receiving grants to a total value of **GHS 318,538.08** from UG's Internally Generated Funds (IGF). Table 7 below shows a summary of the awardees:

Table 7: Faculty Development Grant Beneficiaries for the 2014/2015 Academic Year

Beneficiary	Department	Thesis Title	University Registered	Grant Amount (GHS)
David Kwasi Mensah Abrampah	Archaeology and Heritage Studies	Archaeology of Danish Plantation, Agriculture and Historical Heritage at Dodowa, Ghana	La Trode University, Australia	26,656.10
Felicia Owusu-Ansah	Theatre Arts	Exploring testimonial theatre as a tool to investigate irregular migration in the Brong Ahafo Region of Ghana	University of Ghana	34,000.00
Godfred Matthew Yaw Owusu	Accounting	International Financial Reporting Standards(IFRS) adoption, accounting quality and foreign capital inflows in sub-Saharan Africa	University of Putra, Malaysia	28,350.00
Anita Asiwome Adzo Baku	Public Administration and Health Services Management	Gender sensitivity of occupational health and safety management systems in Ghana: The case of bottling companies in Ghana	University of Putra, Malaysia	30,000.00
Nana Nimo Appiah-Agyekum	Public Administration and Health Services Management	Assessment of primary health care implementation in Ghana	Leeds Beckett University	15,643.40



Beneficiary	Department	Thesis Title	University Registered	Grant Amount (GHS)
Sherry Ama Mawuko Johnson	Veterinary Medicine	Prevalence, clinical manifestations, antihelmintics efficacy, diagnosis and management of helminthosis in dogs in Ghana and Kenya	University of Nairobi, Kenya	23,745.68
Joana Aba Modupeh Hodasi	Physics	Construction and investigation of mode-locked fibre laser	University of Ghana	34,000.00
Raphael Aloa Ayizanga	Animal Science	Phenotypic characterisation and genetic diversity study of the indigenous black pig of Ghana	Kwame Nkrumah University of Science and Technology	32,779.50
Kwaku Owusu Afriyie Osei-Tutu	English	A grammar of Ghanaian student pidgin	Victoria University of Wellington, New Zealand	30,000.00
Edmund Tetteh Nartey	Centre for Tropical Clinical Pharmacology and Therapeutics	Factors associated with hypertension among people living with HIV: A case control study at the Korle-bu Teaching Hospital in Accra	University of Ghana	34,000.00

External Grants Received



Climate Impacts Research Capacity and Leadership Enhancement (CIRCLE)

Total Grant Amount

GBP 4.85 million

Current Status

The CIRCLE programme is an initiative of the Department for International Development (DfID) of the United Kingdom to develop the skills and research output of early career African researchers in the field of climate change and its local impacts on development. The programme which is being managed and implemented by the Association of Commonwealth Universities (ACU) and the African Academy of Sciences (AAS) commenced in 2014 and will end in 2018. University of Ghana is currently hosting two (2) CIRCLE Visiting Fellows (CVFs) under the project.

CVFs

Nº	Name	Home Institution
1	Dr. Philip Antwi-Agyei	Kwame Nkrumah University of Science and Technology, Kumasi
2	Dr. (Mrs) Mercy Afua Adutwumwaa Derkyi	University of Energy and Natural Resources



External Grants Received

**The Association
of Commonwealth
Universities**

 Structured Training for African
Researchers (STARS)

Total Grant Amount

Not Applicable

Current Status

This project aims at developing and piloting effective support mechanisms and professional development training to early career academics, by institutionalising and embedding early career support.

It does this through:

1. Assisting participating universities to strengthen and develop their institution's support framework for early career researchers;
2. Collaboratively developing an openly licensed, online professional skills course, which is backed-up by individual mentoring;
3. Helping institutions to adapt the training courses and embed them within their own training programmes.

In the first phase, twelve (12) early career researchers from UG received training.

Participants:

Nº	Name	Department	Position
1	Margaret Amankwah-Poku	Psychology	Lecturer
2	Samuel Benagr	Theatre Arts	Lecturer
3	Yvonne Agbetsoamedo	Linguistics	Lecturer
4	Gerald A.B. Yiran	Geography and Resource Development	Assistant Lecturer
5	Benjamin K Kwansa	Institute of African Studies	Research Fellow
6	Peace Mamle Tetteh	Sociology	Snr. Lecturer
7	Mercy Bobuafor	Linguistics	Lecturer
8	Lydia Aziato	Adult Health	Lecturer
9	Naa Dodua Dodoo	RIPS	Lecturer
10	Obadele Kambon	Institute of African Studies	Research Fellow
11	Joseph Adusei Sarkodie	Pharmacognosy and Herbal Medicine, School of Pharmacy	Lecturer
12	Inusah Abdul-Nasiru	Psychology	Lecturer



The Association of Commonwealth Universities

Commonwealth Scholarships in low and middle income countries

Total Grant Amount

USD 42,000

Current Status

The Commonwealth Scholarship and Fellowship Plan (CSFP) is a unique programme offering a new strand of Commonwealth Scholarships located in low and middle income countries.

University of Ghana won a grant to host one (1) fully-funded student for Master's level studies from August 2015.

Participants:

Nº	Name	Home Country	Department
1	Mr. Royronald Ochieng Ongong'a	Kenya	Medical Laboratory Sciences



TDR International Postgraduate Training Scheme (2015 – 2019)

Total Grant Amount

USD 3,305,720.00

Current Status

University of Ghana was selected to host an international postgraduate training scheme for postgraduate students, providing full scholarship for up to ten (10) Masters and five (5) PhD students each year. The training focuses on implementing research which supports the identification of health system bottlenecks and approaches to address them.

This scheme is being implemented with funding from TDR, the Special Programme for Research and Training in Tropical Diseases. TDR is hosted at the World Health Organization (WHO) in Geneva, Switzerland, where it is co-sponsored by UNICEF, UNDP, the World Bank and WHO.



Externally Funded Research Projects

Spotlight On BSU Phd Scholarships Awardees

Successful completion of PhD Programmes

George Acheampong:

Title of PhD thesis: *SME Survival in Ghana: A Network Theory Perspective*

Motivation for choosing topic: The key motivation was to contribute to the debate on how SMEs can be aided to survive and contribute to national development. The study area particularly is noted for young people trekking the desert for greener pastures in Europe. Hence, survival of SMEs in the area is very important to me.

What has been your PhD journey: The journey has been an enlightening one which requires learning daily and understanding different issues from different perspectives and yet having to integrate them.

Views concerning the BSU scholarship: The BSU scholarship has been immensely helpful to me. I am extremely thankful to the funding agency. My wish is that it can be expanded to help other students.

Ernest Agyemang

PhD Thesis Title: *Transportation system as a climate mitigation strategy for the Greater Accra Metropolitan Area (GAMA)*

Motivation for choosing topic: I was motivated to choose the topic based on the dearth of academic and policy attention on present land use and transportation systems towards travel reduction and climate mitigation.

My PhD Journey: In the 2012/2013 academic year, I reviewed the original research proposal, conducted a literature survey and designed a conceptual framework. A number of academic courses and supervisory meetings were undertaken in Denmark. I actively participated in

the 2013 Africa Climate Conference (Arusha, Tanzania) and a seminar (University of Ghana). The 2013/2014 academic year saw the development of methods and techniques which were used for data generation. During the 2014/2015 academic year, the data analysis and thesis writing commenced in Denmark and was finally submitted to the University of Ghana. In all, five research articles were published during the entire PhD study period.

Views concerning the BSU scholarship: The BSU scholarship has enabled me build my capacity in the identification and solving of research problems. It has also helped me to improve on my communication, interpersonal and project management skills.

Seth Amponsah

PhD Thesis Title: *Interaction between Amikacin and Aminophylline in Ghanaian newborns with sepsis*

Motivation for choosing topic: My PhD research was a pharmacokinetic and pharmacodynamic study that sought to investigate amikacin treatment with or without aminophylline in neonates with suspected sepsis at Korle-Bu Teaching Hospital. Despite the fact that globally child mortality is on a decline, neonatal mortality has remained relatively stagnant in Africa. Although amikacin is the drug of choice in the treatment of neonatal sepsis, there is a paucity of data on its pharmacokinetics and pharmacodynamics especially in low-income countries, hence the need for this study.

Views concerning the BSU scholarship: In as much as the entire PhD journey was challenging, the experience has given me enough skills for future pharmacological research. With the aid of the Health Platform of Building Strong Universities (BSU) initiative, a collaboration between University of Ghana and Danish universities, all financial aspects of the research were catered for. This scholarship also made possible, travels to Danish Universities for courses and laboratory work that aided the successful completion of my PhD.



Raphael Odoom

PhD Thesis Title: SME Branding and Outcome in Ghana: The Differential Roles of Resources and Capabilities

Motivation for choosing topic: Owing to recent reports that most SMEs are failing not because of lack of finances but inappropriate deployment of strategic marketing practices, it became essential to focus on branding activities in SMEs. The concept fundamentally unearths key differentiating strategies for SMEs for growth and sustainability.

My PhD Journey: It has been an awesome journey. There have been many illuminating and enlightening perspectives of issues as well as newer and better approaches to carrying out research.

Views concerning the BSU scholarship: The BSU scholarship has contributed immensely to the entire journey. I wouldn't have been able to go through the PhD without their support. I hope it will be a perpetual platform so others can also benefit from it.

INTELLECTUAL PROPERTY AND TECHNOLOGY TRANSFER

TDTC Participates In Technology Fairs

The University of Ghana's Technology Development and Transfer Centre (TDTC) participated in a technology fair organised by the Ministry of Environment, Science, Technology and Innovation (MESTI) in partnership with the Council for Technical and Vocational Education and Training (COTVET). Other universities and research institutions that took part in the fair were the Ghana Atomic Energy Commission (GAEC), Council for Scientific and Industrial Research (CSIR), Ghana Technology University College and Kumasi Polytechnic.

Technologies exhibited by the University of Ghana at the fair included smart house technology, soilless vegetation medium, protocol for domestication and conservation of medicinal plants, stable iced kenkey, automatic pineapple peeling machine, wine produced from local fruits, and traditional medicinal products and spices.

The **Smart House Technology** is specifically designed to offer support to physically challenged persons. This technology uses a mobile application and a Bluetooth to perform certain activities in a building, such as opening



Mrs. Diana Owusu Antwi

Research Development Officer in Charge of Intellectual Property and Technology Transfer

of doors and activating/ deactivating lighting systems. It works by sending signals from the mobile phone application through the Bluetooth to a channel and board system which activates the intended part of the building to be accessed. The technology is also capable of handling other mechanical activities in a building so long as channels are allocated for such activities.



Mr. Lawrence Hayford (Department of Computer Science) demonstrating how the Smart House Technology works to Honourable Mahama Ayariga, Minister of Environment, Science, Technology and Innovation

A domestication protocol (cropping cycle) for the cultivation of *Cryptolepis sanguinolenta* and *Croton membranaceus*, two important species used in the

treatment of malaria and prostate cancer was also on display at the fair. A key benefit of developing domestication protocols for the cultivation of medicinal plants is to ensure a reliable and constant supply of authentic medicinal plant material. The protocol offers an alternative to wild harvesting by helping to conserve endangered species in their natural habitat.



Dr. Naalamle Amissah explaining the protocol for the cultivation of *Cryptolepis sanguinolenta* and *Croton membranaceus*, used in the treatment of malaria and prostate cancer

The **soilless vegetation medium** supports the production of vegetables and other short season crops in non-traditional areas such as roof tops and concrete surfaces so long as there is sufficient sunlight. It uses less planting space and has a relatively shorter time from planting to harvesting. This medium supplies crops with the required amounts of nutrients, eliminates the use of fertilisers which may have residual effects on crops and consequently consumers of such crops. It also retains the amount of pathogens and pests that would have otherwise penetrated the crops, making it a safe medium for production. The medium is environmentally friendly and possesses the ability to reduce nutrient run-off and erosion of top soil.



Mr. Joseph Ampah (Department of Crop Science) explaining the Soilless Vegetation Medium (on behalf of Professor Frank Kumaga) to visitors at his stand

The **stable iced kenkey** developed at the Department of Nutrition and Food Science, is a low fat food with high nutritional value that could be used in the traditional management of anorexia. It is also used as a weaning food and in supplementary feeding. This food product has a three-year shelf life.

The **automated pineapple peeling machine** used by most local fruit juice producing companies, minimizes fruit and juice waste whilst maximizing efficiency in the peeling of pineapples. The use of this machine reduces the risk of developing musculoskeletal disorders among workers in the juice manufacturing industry.



TDTC's Support For Conferences

TDTC introduced a Conference Grant scheme for Research Commercialisation (CGRC) to support the participation of faculty and researchers in industry or practitioner-oriented seminars and training workshops. This is aimed at enhancing their knowledge and skills in areas which either contributes to technology development, commercialization or the delivery of technology transfer services to the private sector.

Dr. Regina Appiah-Opong of the Department of Clinical Pathology, Noguchi Memorial Institute for Medical Research, received an award of Four Thousand Ghana Cedis (GHS 4,000) to support her participation in the **Global Compact +15: Business as a Force for Good**, a conference which was held from 23rd – 25th June, 2015 in New York, USA.

Dr Appiah-Opong reported that "the Conference offered me the opportunity to meet representatives of renowned



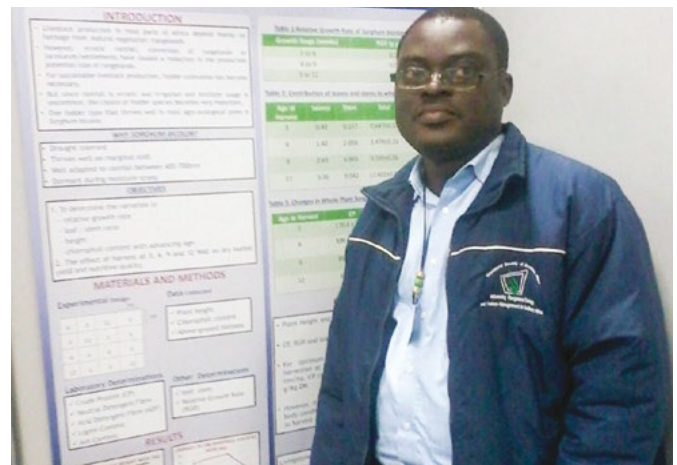
Dr. Regina Appiah-Opong at the Conference

chemical and pharmaceutical companies, learn of their challenges and share research interests for partnership and collaboration in the area of drug development. It also provided an avenue to demonstrate to Governments, the critical role played by universities and research institutions in collaborating with the private sector in solving the greatest challenges faced across the globe."

Dr. Eric Cofie Timpong-Jones of the Livestock and Poultry Research Centre was awarded an amount of Four Thousand, Eight Hundred Ghana Cedis (GHS 4,800) to support his participation in the **50th Annual Congress of the Grassland Society of Southern Africa**, from 19th – 23rd July, 2015 in Pietermaritzburg, South Africa.

Dr. Timpong-Jones noted that "I have been introduced to applications that will enable me use smartphones and tablets for field data collection of plants species. In addition, I have strengthened ties with other researchers for future collaborations in rangeland studies. The mid-congress tour provided the opportunity to learn about new pasture management techniques. I have gained some experience in climate change and livestock studies through the

presentations by the other delegates and made aware of agencies that fund research in range science."



Dr. Eric Cofie Timpong-Jones at the Annual Congress of the Grassland Society of Southern Africa



ETHICS AND RESEARCH DISSEMINATION



Mr. John Anoku

Research Development Officer in charge of Ethics and Research Dissemination

UG Inaugurates Ethics Committee for Basic and Applied Sciences

The University of Ghana, on 28th January, 2015, inaugurated the Ethics Committee for the Basic and Applied Sciences (ECBAS). The Committee, which is one of the four (4) Ethics Committees established by the University, is mandated to provide effective and integrated support for ethical review and approval processes for research in disciplines within the College of Basic and Applied Sciences. The role of this Committee is to ensure that research conducted within the College are safeguarded from all risk and harm to human and animal subjects, as well as ensure that research activities within the College are in compliance with both local and international ethical regulations. The Ethics Committee for Basic and Applied Sciences (ECBAS), which is located at the College of Basic and Applied Sciences, is a 13-member Committee managed by, Mr Sampson Addo, a Research Development Officer at the College of Basic and Applied Sciences.

The Committee is multidisciplinary with the following representatives:

Very Rev. Dr. Maxwell Aryee, a Medical Officer by profession; Rev. Hanson Akrofi Ansah, Reverend Minister; Professor Daniel Bruce Sarpong, an Agricultural Economist; Professor George Oduro Nkansah, a Horticulturalist; Dr. Augustine Ocloo, a Biochemist; Dr. Dorcas Osei-Safo, with a background in Natural Products Chemistry & Drug Analysis; Dr. Christiana Amoatey, a Weed & Agronomy Scientist; Dr. Esi Colecraft, a Nutritionist; Dr. Mary Boadu, with expertise in Medical Exposure & Diagnostic Radiology; Dr. Caesar Atuire, a Bio-ethicist; Dr. Samuel Kwofie, with expertise in biomedical software; Dr. Kofi Afakye, a Veterinary Doctor; and Mr. Kofi Abotsi, a Lawyer.



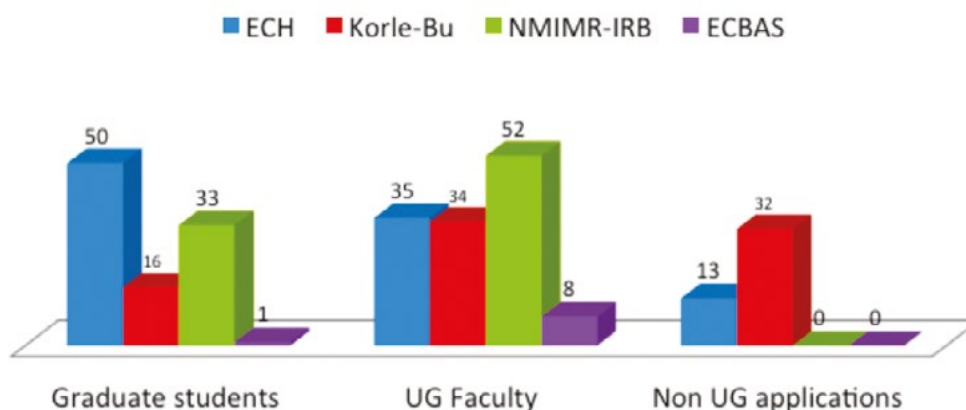
Newly inaugurated Basic and Applied Science Ethics Committee members with other UG Officials.



University of Ghana Research Ethics Committees

Name of Ethics Committee	Location	Administrator	Email	Web Address
Ethics Committee for the Basic and Applied Sciences (ECBAS)	College of Basic and Applied Sciences, Provost Office	Mr. Sampson Addo	ethicscbas@ug.edu.gh	
Ethics Committee for the Humanities (ECH)	ISSER, New Conference Building	Mrs. Dorcas Opai-Tetteh	ech@ug.edu.gh	http://www.isser.edu.gh/index.php/the-ethics-committe-for-humanities
Ethical and Protocol Review Board, (EPRB-Korle-Bu)	College of Health Science, Korle-bu, Provost Office	Mr. Fidelis Anumu	eprc@chs.edu.gh	http://chs.ug.edu.gh/content/ethical-protocol-review
Noguchi Memorial Institute for Medical Research- Institutional Review Board (NMIMR-IRB)	Noguchi Memorial Institute for Medical Research	Ms. Helena Baidoo	irb@noguchi.ug.edu.gh	http://www.noguchimedres.org/index.php?option=com_content&view=article&id=109&Itemid=535

Number of Ethical Clearance Applications received by the UG Ethics Committees in the 2014/2015 Academic Year



RESEARCH UPTAKE AND UTILISATION

Research is of paramount importance to every research-led institution due to its contribution to national and developmental needs. As such, managing the research process and ensuring the use of research evidence by society is very essential. In line with this, the University of Ghana in 2010 joined the Development Research Uptake in sub-Saharan Africa (DRUSSA) programme, a partnership between twenty-four (24) universities in Africa which is aimed at promoting the uptake of research findings.

In order to create an enabling environment for the use of research evidence by society, the University of Ghana is promoting initiatives that support research uptake and utilisation through capacity building.

In April 2015, three (3) staff - Mr. John Anoku, Research Development Officer in charge of Ethics and Research Dissemination at ORID; Mrs. Amma Appah, Senior Administrative Assistant at ORID; and Mrs. Dorcas Opai-Tetteh, Research Development Officer & Administrator



for the Ethics Committee for the Humanities, based at the Institute of Statistical, Social and Economic Research (ISSER) - participated in a 2-day **Research Uptake Communication Workshop** in Rwanda. The training covered areas such as research uptake management and communication, role of research uptake communicators,

skills for building and writing university research uptake profile among others.

The immediate impact of the training was that it provided a better understanding for research uptake at the University and the need to establish its utilisation at the University.

EXTERNAL FUNDS

As part of its core function of rendering financial support by facilitating applications for grants and the management of external projects, the unit introduced financial templates to be used by the University. The templates are expected to harmonise and streamline the various templates in use across the University. During the year under review, the Unit received an total of thirty eight (38) Research Projects amounting to **USD16,826,747.29**

Table 8 below shows the breakdown of the projects received:



Table 8: Externally Funded Projects received at ORID

PROJECT TITLE (FUNDING AGENCY)	LEAD RESEARCHER	TOTAL BUDGET	USD EQUIVALENT
TDR International Postgraduate Training Scheme on Implementation Research	Proessor John Gyapong	USD 1,396,175.00	1,396,175.00
Global Quantitative Survey in Ghana	Professor Mariama Awumbila	GBP 94,400.00	147,264
Regional Research - Urbanisation Migration	Professor Mariama Awumbila	GBP 35,000.00	147,264
Global Qualative Survey in Ghana	Professor Mariama Awumbila	GBP 73,820.00	115,159.20
Migration intra - Household Dynamics and Youth Aspiration in Ghana	Professor Mariama Awumbila	GBP 49,907.00	77,855
Poverty I Depart You: Today I be a Moneyman	Dr. Annabella Osei Tutu	GBP 127,900.00	159,875.00
The Shift from Traditional to FTT Smoking	Professor Emmanuel Afoakwa	USD 42,900.00	42,900.00
Web and Mobile Development Training Programme	Professor Richard Boateng	GHS 20,000.00	5,775.34



PROJECT TITLE (FUNDING AGENCY)	LEAD RESEARCHER	TOTAL BUDGET	USD EQUIVALENT
Vodafone Group Services Ltd.	Professor Richard Boateng	GBP12,765.00	19,913.40
Property, Access and eXclusion Project (DANIDA)	Professor Kojo Sebastian Amanor	DKK 1,689,471.00	257,488.00
Circle Programme	Professor Samuel Adiku	USD 64,000.00	64,000.00
Gender and Agriculture Policy Assessment	Professor Ama De-graft Aikins	USD 90,000.00	90,000.00
Financial Literacy for Adolescent Girls	Dr. Esi Colecraft	USD 76,476.00	76,476.00
Development Excellence in Leadership, Training and Science Africa initiative	Dr. Gordon Awandare	USD 7,500,000.00	7,500,000.00
Accelerated PhD Training through UG- Diaspora	Professor Yaa Ntiamao-Baidu	USD 650,000.00	650,000.00
Alternative Formulations: RUTF, Stunting and Material Complimentary Feeding	Professor Firibu K. Saalia	USD 75,000.00	75,000.00
Valorising African Agriculture (DANIDA)	Professor Joseph Yaro	DKK 843,758.00	151,717.00
Enhancing Community of Practice in One Health for infectious Disease through Postgraduate Training	Professor Andrew A. Adjei	EUR 1,993,925.00	2,492,406.25
Capture of Primary Biodiversity of West African Plants	Dr. Alex Asase	USD 230,230.00	230,230.00
Agriculture Investment in Gender	Dr. Akosua Darkwah	USD 64,207.00	64,207.00
Evidence and Lessons from latin America:Phase 2 (UK Department for International Development)	Dr. Akosua Darkwah	GBP 130,000.00	212,190
Increase the Effectiveness of the Ghana Parliament	Professor Essuman Johnson	USD 19,150.00	19,150.00
Co-Producing Knowledge on Food System for Development in Africa	Professor Yaa Ntiamao-Baidu	USD 794,423.00	794,423.00
Migration into Cities in Ghana: An Analysis of the Counterfactual	Professor Mariama Awumbila	GBP 94,644.00	147,656
Organising and Facilitating ENACT Nutrition Training	Dr. Esi Colecraft	USD 38,385.00	38,385.00
Institutional Capacity Building to improve Agricultural Productivity and Food Security	Proessor John Ofofu-Anim	USD 900,000.00	900,000.00
Feed the future Innovation lab for genome to improve poultry (USAID)	Dr. Boniface B. Kayang	USD 178,325.00	178,325.00
Adaptation at scale in Semi-Arid regions-ASSAR (START internation Inc. (Funding form IDRC)	Professor Chris Gordon	USD 586,747.00	586,747.00



PROJECT TITLE (FUNDING AGENCY)	LEAD RESEARCHER	TOTAL BUDGET	USD EQUIVALENT
Using Applied Research and Technology Transfer to minimize aflatoxin contamination and increase production, quality and marketing of peanut in Ghana (Virginia Tech)	Professor Agnes Budu	USD 6,600.00	6,600.00
HIV Malignancy Research in LMIC Supplement (Yale University)	Professor Maragret Lartey	USD 94,036.00	94,036.00
4th Annual International Conference on Geological and Earth Sciences (GEOS 2015 Association of Commonwealth Universities)	Mr. Emmanuel Abithey	GBP 2,000.00	3,096.00
World Diabetes Congress (Association of Commonwealth Universities, London)	Mr. Emmanuel Ofori	GBP 2,000.00	3,096.00
2015 Beatson international Conference (Association of Commonwealth Universities, London)	Ms. Cecilia Smith	GBP 2,000.00	3,096.00
Business Writing Course for e Service Africa (eService Africa)	Professor Richard Boateng	GHS 6825.6	1,701.10
Investigating technology-mediated faculty-student interactions among Ghanaian Universities students (University of Michigan Africa Studies Centre)	Dr. John Boateng	USD 4,000.00	4,000.00
Application of whole genome sequencing to investigate staphylococcus aureus outbreak in Ghana (Wellcome Trust Sanger Institute (Alborada Award)	Professor Eric Sampane-Donkor	USD 1,358.00	1,358.00
Can forgiveness be strengthened in West and South Africa (Templeton World Charity Foundation, Inc through Virginia Commonwealth University)	Dr. Anebella Opape-Henaku	USD 116,350.00	116,350.00
School Performance: The role of Early Stages (International Growth Centre (ICG)	Dr. Pearl Kyei	GBP 28,937.21	45,497
TOTAL			USD16,826,747.29



INSTITUTIONAL RESEARCH AND PLANNING OFFICE

The mandate of the Institutional Research & Planning Office (IRPO) working under the Pro-VC (RID) is to provide corporate services for effective strategic planning and management at the University of Ghana.

The Office has three main units; Policy and Planning Analysis, Institutional Research, and Institutional Assessments.

Policy & Planning Analysis

The Policy and Planning unit currently led by Mr. Matthew Danquah provides professional and technical services for effective strategic planning and management for the University of Ghana.

The unit also coordinates and integrates all aspects of institutional research and planning in conjunction with the relevant units of the University of Ghana.

The unit is also mandated to execute appropriate institutional research and planning initiatives as determined by the strategic direction of the University.

The Unit's duties includes the monitoring, review and reporting of broad industry trends in higher education regarding collection, analysis, and reporting practices to keep the University current with evolving national and international best practices, the unit liaises with the National Accreditation Board, ranking bodies and the International Association of Institutional Analysts and the (IREX) International Research Exchange Board among others.

Recent publications emanating from the Unit includes the University of Ghana Strategic Plan 2014 -2024 Public Document and the Strategic Planning Working Document. The unit is currently working on the first Annual Review Report of the current University Strategic Plan.



Institutional Research

The Institutional Research unit currently led by Mr Osei Bonsu prepares short, medium and long term enrolment plans and monitors the University's enrolment activities. The unit also coordinates the preparation of data and compliance reports for internal and external reporting needs, the unit currently liaises with the National Commission for Tertiary Education, Ministry of Education and the Ministry of Finance among others.

Recent publications from the Unit include the University of Ghana's 10 year Enrolment Projections by all colleges schools, institutes and departments.

The unit is currently working on the University's Basic Statistics.

Institutional Assessments

The Institutional Assessments unit lead by Mr Eric Adomako initiates surveys and studies to answer questions relevant to the University and to keep the University informed about broad issues with respect to higher education.

The unit also prepares qualitative and quantitative analyses of data that focus on cost-effectiveness of the University's programmes and critical academic indicators relevant to higher education.

Recent publications include undergraduate and graduate exit surveys, the unit is currently working on Alumni Tracer Studies.



University of Ghana Strategic Plan 2014-2024



FELLOWSHIPS

POST-DOCTORAL FELLOWSHIPS

The NMIMR Post Doctoral Fellowship Programme

The Noguchi Memorial Institute for Medical Research (NMIMR) with funding from the Bill & Melinda Gates Foundation (B&M) has established a postdoctoral fellowship program aimed at training young African postdoctoral candidates in an African environment. This fellowship seeks to provide the next generation of biomedical research leaders with the requisite skills to advance their careers in biomedical research on the continent. The program aims to become a model to be replicated by other African institutions that lack postdoctoral schemes. The premier enrolment of postdoctoral fellows commenced in June 2011 and currently, the program has eleven (11) fellows conducting research in Malaria, Tuberculosis, Buruli Ulcer and HIV/AIDS. The fellows are from Senegal (Dr. Aminata Thiaw Colle Lo), Cameroon (Dr. Patrick Tsouh, Dr. Protus Tarkang, Dr. Emmanuel Tekwu and Dr. Nfor Nlinwe), Kenya (Dr. Edward

Maina and Dr. Joseph Nguta) and Ghana (Dr. Jewelna Osei-Poku, Dr. Patrick Arthur, Dr. Samuel Sakyi and Dr. Evelyn Yayra Bonney).

Profiles of selected Doctoral Fellows

Dr. Joseph Mwanzia Nguta is currently a Postdoctoral Fellow pursuing *drug discovery against tuberculosis from natural products of plant biodiversity*. He is specifically using whole cell assay and subcellular targets for hit compound identification against *Mycobacterium tuberculosis* (M. tb) with rapid kill kinetics against latent, intracellular and active M. tb. Prior to the postdoctoral award by Bill and Melinda Gates Foundation, he was a doctoral and later a postdoctoral fellow at the Department of Public Health, Pharmacology and Toxicology (PHPT), University of Nairobi, under support from RISE-AFFNET, University of Nairobi, investigating medicinal plants for antimalarial activity. As a Lecturer, he has supervised eight (8) Master of Science (MSc) students to completion, with three PhD and three MSc students currently under his supervision.



Dr. Joseph Mwanzia Nguta

He has twenty (20) peer reviewed publications in leading journals and has actively participated in 19 conferences and 30 workshops both locally and internationally. Dr. Nguta observed that:

"By developing a new class of drugs, we hope to contribute to the development of the next generation of effective and well tolerated medicines that will be used over short periods of time to treat patients suffering from drug sensitive, multi-drug resistant and latent tuberculosis."

Dr. Edward Maina is a Senior Research Officer at the Centre for Microbiology Research, Kenya Medical Research Institute (KEMRI), and is currently a Postdoctoral fellow attached to the Virology Department at NMIMR. He holds a BSc (Hons) in Applied Biology from the Kenya Methodist University (Kenya), MSc in Medical Microbiology from Institute of Tropical Medicine and Infectious Diseases, Jomo Kenyatta University (Kenya) and PhD (Medicine) from Hirosaki University Graduate School of Medicine (Japan).

Dr. Maina's previous research has focused on investigation of mechanisms and functions of Staphylococcal enterotoxins. He has widely investigated emetic activities of Staphylococcal enterotoxin A (SEA) and Toxic Shock Syndrome Toxin 1 (TSST-1) using a small laboratory model, *Suncus murinus*, to understand the importance of these toxins in the pathogenesis of *S. aureus* infections. Other past research themes include investigation of the importance of MRSA in skin and soft tissues infections in HIV infected individuals.

Dr. Maina has a broad interest in HIV/AIDS research but the consistent underlying theme of his current research is on understanding how a small population of HIV infected individuals, referred to as Elite controllers and Long-term non-progressors, are able to control HIV infection. He is

specifically investigating *the role of T cells in the persistence and progression of HIV infection* to understand this phenomenon. T cells subsets, especially Interleukin 17 secreting T helper and regulatory T helper cells have widely been recognized as major T cell subsets, having profound influence on the outcome of HIV infection. His hypothesis is that these cells are key to HIV control by Elite controllers and Long-term non-progressors. He believes data generated from these studies are imperative for design of HIV vaccine.



Dr. Edward Maina



Dr. Aminata Thiaw Colle Lo is from the Department of Parasitology and Mycology of the Faculty of Medicine, University Cheikh Anta Diop (UCAD), Dakar, where all lines of work focus on parasitic diseases. Dr. Lo's postdoctoral training is based on Biology (Molecular Biology and Immunology). Following her Master's degree in the Faculty of Science and Technology, she focused her PhD on Seasonal Malaria Chemoprevention's project (SMC) funded by the Bill and Melinda Gates Foundation, and partly undertaken at the London School of Hygiene and Tropical Medicine (LSHTM), UK. Her research involved studying the molecular markers and immunity development during SMC in Senegal.

Dr. Lo holds certificates in Cell Biology of Infectious Pathogens from the American Society for Cell Biology in Accra and Good Clinical Practice and Research Clinic Introduction by Vienna School of Clinical Research. Dr. Lo was a member of the Career Development Group (CDG) founded by Malaria Capacity Development Consortium (MCDC) to support the career development of researchers and faculty members at the Faculty of Medicine in UCAD. She has worked for many years in the implementation of malaria prevention strategies in Senegal such as Seasonal Malaria Chemoprevention (SMC), Intermittent Preventive Treatment (IPT) in infants and children. Her research interests are generally in resistance of malaria parasite mainly mechanism of acquisition of anti-malaria antibodies, and to what extent human immune factors and parasite drug-resistance influence the susceptibility of outcome of disease.

Currently as a postdoctoral fellow in the Immunology Department of NMIMR, her research project titled *'Contribution of host and parasite diversity to malaria transmission in Ghana'* seeks to understand how gametocytes are rendered infectious, the dynamics of the development of transmission blocking antibodies which are developed against these gametocytes, and how these work together to cause malaria transmission.



Dr. Aminata Thiaw Colle Lo

Cambridge-Africa Partnership for Research Excellence (Caprex) Programme

The Cambridge-Africa Partnership for Research Excellence (CAPREx) programme is a three-way partnership between the Makerere University in Uganda, the University of Cambridge in UK and the University of Ghana with funding from the Carnegie Corporation of New York. It is aimed at strengthening academic research and research management capacity in the African partner institutions mainly through the provision of fellowships.

Caprex Post-Doctoral Fellowships

The 3rd Call for Applications for Postdoctoral Fellowships was announced in August 2014 and yielded a total of sixteen (16) applications. Out of this number, ten (10) applicants were selected to receive Early Career Postdoctoral Research Fellowships under the programme. The fellowship provides funding for recipients to spend up to six (6) months at the University of Cambridge to undertake collaborative research projects with Cambridge-based collaborators.



Profiles of the 3rd Cohort of Award Winners from the University of Ghana



Dr. Ken Okwae Fening

Dr. Ken Okwae Fening of the Soil and Irrigation Research Centre is working with Dr. John Peter Carr of the Department of Plant Sciences of the University of Cambridge in exploring the *"Role of aphids in the transmission of a suspected viral disease and the disease's impact on the growth and yield of cabbage in Ghana"*.

Dr. Fening in his research, identified a new disease threat to cabbage in Ghana which appears to have the characteristics of an insect-transmitted viral disease. The project aims to test the hypothesis that the causative agent of this new disease is viral in nature. Additionally, it will identify the causative agent and its most important aphid or whitefly vector (s), and assess the impact of the disease by initiating field experiments in Ghana.

The outputs of the project will provide the basis of diagnostic tests and allow for the formulation of sustainable disease management or eradication methods. The project also seeks to contribute to capacity building through

training of the fellow in molecular-virological methods and building a collaborative relationship with the University of Ghana. The work is also beneficial to the Cambridge group; allowing the translation of basic research work on plant-virus aphid interactions in a model crucifer (*Arabidopsis thaliana*) to an important crucifer crop (cabbage).

Working in collaboration with subject-based experts from a world class University has offered Dr. Fening the necessary skills, access to state-of-the-art facilities and equipment, research links and platform to develop himself as an early-career Scientist. Additionally, the fellowship offered networking opportunities in different fora. The links made will be useful in attracting additional grants for research. The knowledge and experience obtained from this programme will position Dr. Fening to conduct collaborative demand-driven and action-oriented research as well as better equip him to contribute to the teaching and supervision of graduate students in Entomology, under the ARPPIS programme at the University of Ghana.

Dr. Samuel Kojo Kwofie of the Department of Biomedical Engineering is working with Dr. Simon Frost of the Department of Veterinary Medicine, Cambridge Veterinary School on the project titled *"Genomics and Bioinformatics of Infectious Pathogens"*.

The project seeks to use High Performance Computing (HPC) to undertake research in bioinformatics, phylogenetics and genomics of infectious pathogens, including Hepatitis B and C viruses. Specifically, it aims to use Next Generation Sequencing (NGS) methods to generate entire genomes from hepatitis viruses and elucidate phylogeography patterns of hepatitis virus transmission. Additionally, it seeks to perform NGS analysis of host and viral genomes to understand disease pathogenesis and epidemiology and to develop robust bioinformatics pipelines integrating algorithms which



facilitate easy and efficient assembly of viral genomes. Participating in this fellowship will enable Dr. Kwofie to significantly improve his research and teaching capabilities. He aims to leverage opportunities emanating from the CAPREx Fellowship to facilitate the establishment of the West African Centre of Excellence for Genomics and Bioinformatics of Infectious Pathogens. This will position him to help establish graduate programmes in bioinformatics and genomics, which are currently not offered at the University of Ghana. This could be done through the development of e-learning platforms in bioinformatics and molecular biosciences to support students.



Dr. Samuel Kojo Kwofie



Dr. Seloame Tatu Nyaku

Dr. Seloame Tatu Nyaku of the Department of Crop Science is collaborating with Dr. Uta Paszkowski of the Department of Plant Sciences of University of Cambridge. Dr. Nyaku's research will investigate *"Comparative transcriptome analysis of susceptible and resistant tomato (*Solanum lycopersicum*) genotypes from Ghana to root nematode (*meloidogyne incognita*)"*.

The study aims to examine tomato-root knot nematode interactions, with a major emphasis on the root

transcriptome and will enhance the current knowledge on the innate immunity and tolerance mechanism used by tomato against root-knot nematodes. Also, the creation of functional genomics resources will enable the identification of cross-talk between various defense pathways in distant tomato species. Dr. Nyaku will also acquire new skills and knowledge that will be shared with his students.

Dr. Neils Ben Quashie of the Centre for Tropical Clinical Pharmacology and Therapeutics is collaborating with Dr. Julian Rayner of the Malaria Programme, Wellcome Trust Sanger Institute to undertake research on *"Use of CRISPR-Cas9 genome editing to identify novel antimalarial drug targets"*. Dr. Quashie will spend time at the Wellcome Trust Sanger Institute to learn the CRISPR-Cas9 approach, and applied it to the follow-up of potential new drug targets identified through ongoing large-scale screens. Transfer of the technology to Ghana will allow much more routine generation of transgenic parasites in endemic countries, allowing local follow up of resistance mutations. Dr. Quashie's collaboration with renowned scientists has greatly enhanced his continuous development as an independent researcher. With his vision of training the next generation of graduate students from Ghana to carry out research on infectious diseases. Dr. Quashie hopes to transfer the knowledge acquired to younger



scientists/ students and fellow colleagues at the University of Ghana. Also, the fellowship provided an opportunity for Dr. Quashie to develop joint research projects with his collaborators at the University of Cambridge for possible short term exchange of students/scientists between the two institutions.



Dr. Neils Ben Quashie (extreme back) with some colleagues at Cambridge

Dr. Lydia Mosi of the Department of Biochemistry, Cell and Molecular Biology has a research interest in Buruli ulcer and is working on the project titled "*Identification of specific metabolites in Mycobacterium ulcerans infection: exploring potential diagnostic biomarkers*" in collaboration with Dr. Jules Griffin of the Department of Biochemistry of the University of Cambridge.

The project aims to characterise the metabolome of *M. ulcerans* with respect to other mycolactone producing mycobacteria and pathogenic environmental mycobacteria. Specifically, it seeks to characterize the protein and lipid metabolomes of selected mycobacterial species including *M. ulcerans* and other mycolactone producing mycobacteria. It also seeks to identify key *M. ulcerans* metabolic markers that can be found only in Buruli ulcer patients. This will ultimately help to identify potential targets for further development as a diagnostic tool.

Through this fellowship, Dr. Mosi aims to obtain increased knowledge and improved research skills which will enhance her career. The knowledge and training acquired under this fellowship will be beneficial to the Department through active teaching and training conducted for graduate students. Also, this fellowship will provide a platform for fostering partnerships with the Department of Biochemistry of the University of Cambridge to promote work on Buruli ulcer.



Dr. Lydia Mosi



Dr. Dilys MacCarthy

Dr. Dilys MacCarthy of the Soil and Irrigation Research Centre and Professor Howard Griffiths of the Department of Plant Sciences, University of Cambridge collaborated on a project to *“Assess the efficacy of locally produced rice husk biochar in managing Greenhouse gas emissions and the mechanism in improving yield”*. This study aims to assess the impact of rice husk biochar produced under local technology in managing Greenhouse Gases (GHGs) and characterise it to understand the mechanism of its impact on yield and GHG emissions. It will also determine the structural characteristics of the biochar.

Dr. MacCarthy aims to build a network of international scientists from which she can gain mentoring and research support to improve her research output. Dr. MacCarthy will have access to state-of-the-art laboratory facilities, obtain skills on the use of state-of-the-art analytical tools, improve her chances of collaborative research work with faculty members from the University of Cambridge, enhance the quality of research output and fast track her academic progression.

Dr. Linda Eva Amoah of the Immunology Department of the Noguchi Memorial Institute for Medical Research has an interest in malaria transmission and is collaborating with Dr. Gavin Wright of the Cell Surface Signalling Laboratory, Wellcome Trust Sanger on the project titled *“Identification of human host receptors for Plasmodium falciparum gametocyte antigens”*.

Dr. Amoah is interested in identifying antigens on the surface of gametocyte infected red blood cells using avidity based extracellular interaction screening (AVEXIS). This will pave way for the identification of novel transmission blocking vaccine candidates for malaria as well as enhance immune recognition of the transmissible stages of *P. falciparum*.

Participating in this fellowship has helped Dr. Amoah to establish professional relationships with new and well-established researchers with interest in malaria



Dr. Linda Eva Amoah



transmission reduction. Also, the fellowship has helped to build capacity in Proteomic analysis, designing heterologous expression vectors, purification of recombinant proteins and extracellular interaction screening, areas of molecular biology that are lacking in Ghana. The fellowship is expected to enhance local collaboration within the University of Ghana and other Ghanaian Universities as there is the need for local scientists to start thinking about and setting the pace to identify and produce vaccine candidates for local infectious and non infectious diseases using combinations of genomic and proteomic analysis in addition to heterologous

expression and purification. After the program, Dr. Amoah aims to incorporate knowledge and experiences gained into the undergraduate and graduate practical courses organized by the Department of Biochemistry, Molecular and Cellular Biology as well as organize hands-on training workshops to train young researchers and students on how to make these valuable recombinant antigens using a variety of heterologous systems as well as using proteomics to identify candidate proteins and the importance of extracellular interaction screening.



Professor Eric Sampane-Donkor

With a background in infectious diseases, **Professor Eric Sampane-Donkor** of the Department of Microbiology, College of Health Sciences, is working with Professor Stephen Bentley of the Wellcome Trust Sanger Institute on a research project titled *"Application of whole genome sequencing to investigate Staphylococcus aureus outbreaks in Ghana"*.

The study seeks to apply whole genome sequencing to retrospectively investigate three recent *Staphylococcus aureus* outbreaks at the Korle-Bu Teaching Hospital in Accra, Ghana. This study is relevant as the information obtained would be useful in preventing further *Staphylococcus aureus* outbreaks in Ghana.

The fellowship has provided a platform for Professor Sampane-Donkor to work in a state-of-the-art genome sequencing laboratory at the Sanger Institute, improve his research skills and expertise in infectious diseases, and publish his work in top tier journals. This has better positioned him to contribute to the research profile of the University and ultimately enhance the University's vision of becoming a research-led institution. Also, both undergraduate and graduate level students will benefit from improved teaching and supervision.



Dr. Naalamle Amissah of the Department of Crop Science, is collaborating with Dr. Lesley Boyd of the National Institute of Agricultural Botany, to explore "*Alternative methods of cultivation of *Cryptolepis sanguinolenta* and *Croton membranaceus* to maximize active compound production and prevent species extinction in the wild: GhanaMedPlants*".

The fellowship has opportunities for north-south and south-south collaborations and interactions with scientists at the National Institute of Agricultural Botany (NIAB). This will provide insights into methodologies and techniques that would enhance Dr. Amissah's research competencies in tissue culture and micropropagation whilst providing an opportunity for mentorship and networking with senior colleagues working in that area of interest. This will provide the necessary expertise for career advancement and in turn enable Dr. Amissah to serve as a mentor to young faculty and students in her field of study.



Dr. Naalamle Amissah

Dr. Joseph Okani Honger of the Soil and Irrigation Research Centre of the School of Agriculture is collaborating with Professor George Salmond, a Microbiologist in the Department of Plant Sciences at the University of Cambridge and worked on the project titled "Genetic diversity of *Erwinia* (*Pectobarium*) strains from Ghana".

The fellowship enabled Dr. Honger to work in a plant pathology laboratory to learn and acquire knowledge on the use of modern equipment for the diagnosis of plant diseases as well as obtain improved research skills to facilitate the formulation of control measures. The fellowship also provided an opportunity for Dr. Honger to understudy distinguished experts in the field of plant pathology. This has helped establish a linkage with the scientists which could translate in future collaborations in the area of plant pathology. Also, the knowledge gained will be used to modify the teaching syllabus to help enhance the teaching activities at the Centre as well as impart to other plant pathologists in Ghana through collaborative research programmes.



Dr. Joseph Okani Honger



MID-CAREER FELLOWSHIP

Takemi fellowship at Harvard University

Dr. Deborah Atobrah, Research Fellow at the Institute for African Studies, has been selected as a 2015 Takemi Fellow at the Harvard School of Public Health. The letter of award states, inter alia, *"this group of Takemi Fellows is an exceptionally well-qualified group of professionals interested in issues of resource allocation for health....The Harvard selection committee was greatly impressed by the quality of the candidates."*



Dr. Deborah Atobrah

OTHER FELLOWSHIPS

Sub-Saharan Africa Scholarship Programme for Young African Researchers

Since 2008, Coimbra Group Universities have been providing young researchers from Sub-Saharan African Universities the opportunity to spend a short period (1 to 3 months) at a Coimbra Group University to carry out part of their research activities. **Dr. Justice Nonvignon**, of the School of Public Health, received one Young African Researcher award. He was based at Aarhus University (AU), Denmark, for three months working on collaborative projects with Professor Ulrika Enemark of AU Department of Public Health.

Africa Science Leadership Programme-2015/2016 Inaugural Cohort

Dr. Lydia Aziato, a lecturer at the School of Nursing, received a fellowship award from the inaugural Africa Science Leadership Programme (ASLP). The ASLP is an initiative of the University of Pretoria and the Global Young Academy, with the support from the Robert Bosch Stiftung Foundation. It aims to grow mid-career African academics in the areas of thought leadership, team management and research development. The inaugural Fellows were rigorously selected from across the African Continent from countries including Ghana, Nigeria, Kenya, Uganda, South Africa, Zimbabwe, Egypt, Ethiopia and Mauritius. The first

training programme was held at the University of Pretoria from the 7th to 12th of July, 2015. The second training programme will be held in Pretoria in April 2016.

Caprex Promotes Research Management Initiatives

As part of efforts to strengthen research management initiatives at the University of Ghana, three (3) Research Development Officers from the Colleges of Humanities, Health Sciences and Basic and Applied Sciences of the University of Ghana, were awarded Research Management Fellowships under the Cambridge-Africa Partnership for Research Excellence (CAPREx) programme in September 2014 to undertake specialized training in Research Administration and Management.

They comprised the second cohort of CAPREx Research Management Fellows from the University of Ghana.

The benefits from this programme were enormous as it helped to build capacity and develop better subject-area knowledge and understanding which has helped in implementing systems to facilitate research management work at their assigned units.

As a way of contributing to build research management capacity at the University of Ghana, the Research Development Officers delivered a half-day training workshop to share the knowledge acquired and to train other research management support staff in order to enhance their work output.



AWARDS AND ACHIEVEMENTS

AWARDS

PROFESSOR NAA AYIKAILEY ADAMAFIO **Receives Meritorious Service Award**

Naa Ayikailey Adamafo, Professor of Biochemistry and Dean, International Programmes obtained a Bachelor of Science (Honours) degree in October 1977 from the University of Ghana and a PhD degree in Biochemistry in 1985 from Monash University in Melbourne, Australia. She was appointed lecturer in the Department of Biochemistry on May 22, 1989. After a period of intensive research, teaching and publications, she was promoted to the grade of Senior Lecturer in 1996 and Associate Professor in 2005. On May 1, 2013, she was promoted to the grade of Professor. Key Positions she held include;

1. Head of Department of Biochemistry - 2004 to 2006
2. Examination Officer for International Programmes Office - 2007 - 2009



Professor Naa Ayikailey Adamafo



1. Dean of International Programmes - 2009 - 2015

In recognition of Professor Naa Ayikailey Adamafo's noteworthy contribution to the development of the International Programmes Office of the University of Ghana, the promotion of internationalization in the University, and

helping to improve the visibility of the University on the international stage, the University of Ghana recognized her classic leadership as deserving of the ***DISTINGUISHED AWARD FOR MERITORIOUS SERVICE TO THE UNIVERSITY, 2014.***



Dr. Gordon Awandare (Middle) holding his award

DR. GORDON AWANDARE **Receives The 2015 Royal Society PFIZER Early Career Award**

Dr. Gordon Awandare, Head of the Department of Biochemistry, Cell and Molecular Biology was awarded the 2015 Royal Society Pfizer Early Career Award.

The Royal Society is a self-governing Fellowship of many of the world's most distinguished scientists drawn from all areas of Science, Engineering and Medicine. The Society's fundamental purpose since its foundation in 1660, is to recognise, promote, and support excellence in Science and to encourage the development and use of Science for the benefit of humanity. The Early Career Award is presented to a research scientist showing exceptional promise, but at an earlier stage of his or her career, usually having received their PhD within the last 20 years

The award won by Dr. Awandare, is in recognition of his sterling achievements in Molecular and Cellular Studies of Malaria, including how malaria parasites invade red blood cells and cause disease. The award consists of a grant of GBP14, 000 and a personal prize of GBP 1,000.

PROFESSOR YAA NTIAMOA-BAIDU **Awarded a grant for Climate Change and Food Systems Research**

Under the leadership of Professor Yaa Ntiamoah-Baidu, Chair of the Centre for African Wetlands, the University of Ghana has been awarded an initial seed grant of USD 794,000 by the Open Society Foundation to coordinate

the implementation of a project titled "Co-producing knowledge on food systems for development in Africa" under the Africa Climate Change Adaptation Initiative (ACCAI) Partnership. The project amongst other things aims to contribute expertise, knowledge and development of implementable policies in Africa to guarantee food security. The project will also provide research grants to train PhDs, MPhils and Postdoctoral Fellows to deliver



aspects of the project's research agenda.

The UG component will focus on research questions in the area of climate change and food security, thus advancing two of UG's research priorities namely Climate Change Adaptation and Food Security research. Specifically, the UG component will focus on the following thematic areas:

1. Shifting eating habits, nutrition and food technology in relation to Climate Change and Food Security;
2. Rural-rural migration, urban-urban migration, urbanization and food system change in the face of climate change; and
3. Indigenous crops, indigenous knowledge and wild food.

Other members of the ACCAI Partnership are Mekelle University (Ethiopia), University of Dar-es-Salaam (Tanzania) and Universities of Stellenbosch & Witwatersrand (South Africa).



Professor Yaa Ntiamoah-Baidu

DR JOSEPH OSAFO **Receives Prestigious De Leo Fund Award**

Dr. Joseph Osafo, a Senior Lecturer at the Department of Psychology, has received the prestigious De Leo Fund Award. The award is in recognition of his outstanding research on suicidal behaviours carried out in developing countries, Dr. Osafo was presented with this award during the 28th World Congress of the International Association for Suicide Prevention (IASP) held in Montreal, Canada. The De Leo Fund Award is an award established by the IASP which supports and promotes research in Science in developing countries.

Prof. Diego De Leo, Chairperson of the De Leo Fund Award said at the award ceremony, *Let me just add that I am personally very pleased that a researcher from an African country is the winner of the Prize. I hope he can promote new research projects and initiatives on the prevention of suicide in his country and the entire continent".*



Dr Joseph Osafo (centre) holding his award. With him are Prof. Diego De Leo (left), De Leo Fund Award Chairperson and Prof. Ella Arensman (right), President of IASP



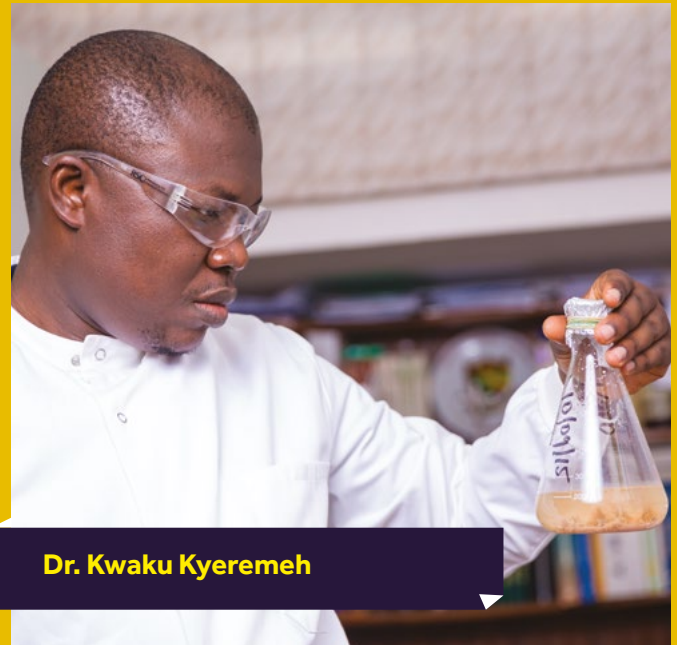
ACHIEVEMENTS

DR KWAKU KYEREMEH

Collaborates In Discovery of Legonmycins: Future Microbial And Cancer Fighting Agents

An international research team from the University of Ghana, University of Aberdeen and Wuhan University in China has discovered a set of new alkaloids from a novel Ghanaian microorganism which have great potential as future microbial and cancer fighting agents. The research was sponsored by the Leverhulme Trust and the Royal Society's Africa Award.

Legonmycins A and B belong to a group of naturally occurring alkaloids based on the pyrrolizidine backbone. Pyrrolizidine alkaloids (PAs) are produced mainly by plants as a defence mechanism against insects, pests and herbivores but have been used by humans since ancient times for therapeutic and recreational purposes. Interestingly, while over 660 plant pyrrolizidines are known, only up to 10 bacteria PAs have been characterized. More recent studies have shown PAs to have pharmaceutical importance as anti-tumour and anti-inflammatory agents but their biosynthetic origins remained poorly understood until now. The compounds were named after Legon, a suburb of Ghana,



Dr. Kwaku Kyeremeh

where the producing microorganism was found and isolated.

Dr. Kwaku Kyeremeh, a Lecturer at the University of Ghana's Department of Chemistry and his colleagues, Dr. Hai Deng (University of Aberdeen), Professor Yi Yu (Wuhan University), and their colleagues, solved the mystery behind the amino acid composition and other biosynthetic precursors involved in the biosynthesis of bacteria PAs.

PROFESSOR HELEN YITAH

Appointed Distinguished Scholar for the Mellon Multidisciplinary Team Research Project

Professor Helen Yitah, Head of the Department of English, was appointed Distinguished Scholar for the Mellon Multidisciplinary Team Research Project, 2014-2015. This honour was conferred based on her research and publications on children's literature. In this capacity, she is collaborating with Professor Molly Brown of the Department of English, University of Pretoria on the research theme, "The Child and the Story", which was one of four themes launched by the Vice-Chancellor of University of Pretoria (UP) in February 2015. An important aspect of the project is

to collaborate on the supervision and mentoring of graduate students from both University of Ghana and University of Pretoria in the field of children's literature



Professor Helen Yitah



PROFESSOR NANA ABA APPIAH AMFO **Admitted into the International Dean's Course Africa**

Professor Nana Aba Appiah Amfo, of the Department of Linguistics, and Dean of the School of Languages, was admitted into the International Dean's Course Africa from June 2015 to February 2016. She was also made a Commonwealth Professionals Fellow, which fellowship was tenable at Roehampton University, Department of English Language and Linguistics from February to April 2015.



Professor Nana Aba Appiah Amfo



Ms. Doris Akyere Boateng

TWO UNIVERSITY OF GHANA GRADUATE STUDENTS **Win Carnegie Corporation of New York (CCNY) Carnegie Fund for Conference Attendance (CFCA) Award**

Two University of Ghana graduate students, **Ms. Doris Akyere Boateng** and **Ms. Hannah Naa Kai Sackey**, have won awards under the internationally competitive Carnegie Fund for Conference Attendance (CFCA). The CCNY established the CFCA in February 2015 with the aim of supporting African beneficiaries of CCNY-supported postgraduate degree and postdoctoral programmes to present papers at major international conferences. The fund is managed by the Institute of International Education (IIE), USA.

Ms. Doris Akyere Boateng is a doctoral candidate pursuing a split-site Doctoral programme at the Departments of Social Work at the University of Manitoba, Canada and the University of Ghana. She has since presented her work on *"Experiences of Ghanaian women in Academia: resilience, self-efficacy and success."* at the International Conference on Gender and Education at the Indiana University,



Ms. Hannah Naa Kai Sackey has just completed her MPhil studies at the Department of Animal Biology and Conservation Science at the University of Ghana. Ms. Sackey's work focused on *"The changing trends in bush meat exploitation in Ghana"*.



Ms. Hannah Naa Kai Sackey



Mr. Thomas Anning Dorson (Left) in a pose with other participants

MR. THOMAS DORSON,
A PhD Marketing Student, wins Best Paper Award at the 2015 Annual Conference of the Emerging Markets Conference

A final year PhD student, **Thomas Anning Dorson** of the Department of Marketing, University of Ghana Business School, won the best paper award at the 2015 Annual Conference of the Emerging Markets Conference Board. The conference was hosted by Institute of Management Technology, Dubai from 18th – 22nd January, 2015 on the theme *"Redefining Value in Emerging Markets"*. The Emerging Markets Conference Board (EMCB) brings together marketing and emerging markets scholars and practitioners from around the world to discuss contemporary issues and challenges in emerging economies.



PUBLIC LECTURES

In the year under review the University of Ghana hosted two (2) Inaugural Lectures, the 2015 Aggrey-Fraser-Guggisberg Memorial Lectures, the 2014-2015 Alumni lecture and one (1) Vice Chancellor's Occasional Lecture.

INAUGURAL LECTURES

Not Just Visiting – Towards Leveraging Tourism for Enhanced National Development in Ghana.

Professor Alex Boakye Asiedu of the Department of Geography and Resource Development, and Principal at the University of Ghana Accra City Campus, delivered his inaugural lecture on the topic *Not Just Visiting – Towards Leveraging Tourism for Enhanced National Development in Ghana*. The lecture was held on December 4th, 2014 at the Great Hall and was chaired by the Vice Chancellor, Professor Ernest Aryeetey. He said tourism has become an effective tool for pursuing modernization, economic development and prosperity and also has become an effective tool for advancing wider international integration through globalization.



Professor Alex Boakye Asiedu



However, as a multi-faceted activity and geographically complex one, different services and facilities are sought and supplied at different stages from the origin to the destination. In the process, several physical, socio-cultural and economic impacts are experienced. Governments and the other stakeholders in tourism encourage types of developments that result in many of the “blessings” of

tourism while limiting the associated “blights”.

The main thrust of this lecture was to provide an initial understanding of the nexus between tourism and development to provide the basis for exploring how tourism has impacted on the development of the Ghanaian space economy. Measures to enhance the future role of industry in the development of the country are then proposed.



Professor Richard Adanu

Her Right not a Favor: The Future of Women's Health in Ghana”.

Professor Richard Adanu, Dean of the School of Public Health, delivered his inaugural lecture on the topic, *“Her Right not a Favor: The Future of Women's Health in Ghana”.*

The lecture was held on September 25th, 2014 at the Great Hall and was chaired by the Vice Chancellor, Professor Ernest Aryeetey.

He discussed women's health as a concept that embraces the complete World Health Organization definition of health. This concept looks at the well-being of women through the lenses of accepted societal and cultural practices as well as through the lens of gender issues. Women's health is closely related to reproductive health, which began its rise to prominence in 1994 after the International Conference on Population and Development in Cairo. Reproductive health, unlike what many people think, is however not only about the health of women. There are issues in reproductive health that concern both men and women, hence the terms Women's Reproductive Health and Men's Reproductive Health. Women's Health has many different aspects which can be addressed by the clinician, the public health specialist and the gender advocate among others. This lecture examined women's health from these three perspectives.



2015 Aggrey-Fraser-Guggisberg Memorial Lectures



Professor Gayatri Chakravorty Spivak

Professor Gayatri Chakravorty Spivak gave the 2015 Aggrey-Fraser-Guggisberg memorial lectures. Professor Spivak, a university Professor at Columbia University, is a critical theorist best known for her seminal essay, "Can the Subaltern Speak?" (1985) which is regarded as the opening text of postcolonial discourse. Internationally renowned as a key expositor of the elusive and esoteric post structuralist Derrida, she simultaneously places emphasis upon centralising the cultural texts of those marginalised by dominant western culture: the new immigrant, the working class, women, and other identities denied the voice of authority. Professor Spivak used the three-day lecture series to highlight the transformative power of the Humanities, using her years of teaching experience in countries such as her home country India, the United States as well as collaborations in Ghana, Kenya and Nigeria. The lectures were held at the Great Hall, from 27th to 29th May, 2015 and chaired by the Vice Chancellor, Professor Ernest Aryeetey.

2014-2015 ALUMNI LECTURE

Professor Henrietta J.A.N Mensa-Bonsu, Director of the Legon Centre for International Affairs and Diplomacy (LECIAD) delivered the 2014-2015 Alumni Lecture on the theme "*The African Union's Peace and Security Architecture: A Guarantor of Peace and Security on the Continent*". The lecture was held at the Great Hall, and was chaired by the Vice Chancellor, Professor Ernest Aryeetey.



Professor Henrietta J.A.N Mensa-Bonsu

Vice-Chancellors' Occasional Lecture

Professor William G. Powderly, the Director of the Institute for Public Health at Washington University in St. Louis, USA, delivered the Vice-Chancellor's Occasional Lecture on the topic "*Why Transdisciplinary Science is Critical to Address Global Health Challenges: Lessons from HIV/AIDS*". The lecture was held at the Centre for African Wetland Auditorium on May 14, 2015 and was chaired by the Vice Chancellor, Professor Ernest Aryeetey.



Professor William G. Powderly



MAJOR RESEARCH INITIATIVES

UNIVERSITY OF GHANA'S FOUR RESEARCH CENTRES OF EXCELLENCE

Malaria Research Centre of Excellence

The Malaria Research Centre of Excellence working group has identified a demonstration project to provide evidence for the combined effects of proven interventions on malaria morbidity and mortality, through the implementation of a set/combo of interventions at the household level, targeting several facets of the parasite life cycle, including vector control (ITNs, Wall Lining, IRS) and those that identify and target the asymptomatic parasite reservoir in the population. Within this intervention, several questions on malaria from parasite biology, vector behavior and adaptability, human responses to changes in the epidemiology and the cost effectiveness of the intervention will be addressed by investigators at the Malaria Centre. The project will serve as a template to be replicated across the country towards the objective of malaria elimination in

Ghana and the sub region at large.

The Centre has five (5) research sub-groups currently engaged in researching various aspects of Malaria at Paakro in the Akuapem South district, Eastern Region of Ghana.

Research Area One: Epidemiology and Control

An integrated intervention against malaria: an implementation research towards elimination in Paakro, in the Akuapem South district, Eastern Region of Ghana

While the implementation of ongoing interventions has resulted in marked reduction of malaria morbidity and mortality, it is becoming evident that any drive towards elimination will need interventions against the large parasite reservoir in the population. This is a demonstration project to show the combined effect of proven interventions on malaria morbidity and mortality.



The general aim of this implementation and effectiveness study is to reduce malaria prevalence and incidence and by extension, morbidity and mortality in the population through IPT Mass Drug Administration and testing for the presence of malaria parasites combined with timely home management while maintaining a high bed net coverage.

Research Area Two: Parasite Biology and Immunology

Identifying New Vaccine Targets and Developing Novel Diagnostic Methods for Malaria Intervention Research

The best strategy for successfully controlling malaria is the development of a safe, effective and deployable vaccine. The group proposes that the major factor that has hindered the development of such a vaccine is the lack of an adequate understanding of the biology of the parasite and the molecular interactions between the parasite and host cells. Malaria eradication will only be successful if there is a successful interruption of malaria transmission. A deeper understanding of sexual stage biology is essential to providing a platform for transmission-blocking vaccine development and for identification of novel viable drug targets for malaria eradication. The aim is to facilitate a greater understanding of malaria parasite biology, the mechanisms that mediate pathogen-host interactions and develop new approaches to malaria diagnosis.

Research Area Three: Vector Studies (Entomology)

Monitoring malaria transmission dynamics after multiple interventions in Paakro, in the Akuapem South district, Eastern Region of Ghana

Malaria vector control interventions such as the use of long lasting insecticide nets (LLINs), indoor residual spraying (IRS) and house improvement through the provision of ceiling and trap doors are known to affect the behavior of *Anopheles* mosquitoes and disease transmission dynamics. Long-term use of insecticides also leads to the development of insecticide resistance in

Anopheles mosquitoes, which could also influence malaria transmission patterns. The goal of the study is to measure the impact of multiple interventions including LLINs and house improvement on disease prevalence. In line with this, the primary objective of our survey is to measure and evaluate the malaria transmission dynamics and insecticide resistance trends in the study area prior to and after the introduction of the multiple interventions.

Research Area Four: Antimalarial Drug Discovery, Development, Drug Resistance and Clinical Trials

The scale up of malaria control interventions has resulted in a substantial decline in prevalence, and reduction of transmission in certain areas. In the absence of an efficacious vaccine, appropriate case management based on prompt initiation of safe and efficacious antimalarial therapy remains an important control strategy. However, the emergence and spread of parasites resistant to antimalarial drugs poses a continued threat to this aspect of malaria control.

The objectives of the study are to i) undertake antimalarial drug discovery activities based on screening Ghanaian medicinal plant extracts to identify novel or lead compounds with antimalarial activity, including those with potential anti-gametocidal activity; ii) establish and validate novel approaches for detecting and characterizing sub-patent malaria parasitaemia among target groups; iii) establish and validate markers relevant for potential safety monitoring of 8-aminoquinoline therapy; and validate novel molecular markers linked to, and which may be important for large-scale surveillance of artemisinin resistance.

Research Area Five: Socio-economic Studies and Health Systems research

This study will survey participants in the study district on their perspectives on the usefulness of the intervention(s) as well as economic studies to ascertain the cost per life



saved by the intervention both from the household and also from the health facilities.

Trans-Disciplinary Research into Climate Change Adaptation Centre of Excellence

The Trans-Disciplinary Research into Climate Change Adaptation Centre of Excellence organised the 4th Climate Change and Population Conference on Africa at the Noguchi Memorial Institute for Medical Research, from 29th – 31st July, 2015. The conference, held under the theme “Climate Change, Sustainable Innovation and Partnerships” brought together over 100 participants from 17 countries, including *world renowned scientists, academics, graduate students, policy makers and civil society organisations.*

The event aimed to promote regional and intercontinental networking amongst individual scientists and institutions in collaborating to pursue a common agenda; to bring together the often forgotten stakeholders in development such as civil society, industry and business, to interact with researchers, policymakers and politicians on how to address challenges of climate finance and development. The conference created a platform to share lessons on rigorously pursuing a fundraising agenda that allows the participation of the scientific research community in the next COP meeting in Paris towards the Intended Nationally Determined Contributions (INDCs).

Oral presentations and discussions focused on Climate assessment and development, Climate Change and Finance, Climate Change and food security, Climate smart agriculture/adaptation and indigenous knowledge systems, Gender mainstreaming, Climate, Water and Health, Green Economy and Green growth, Sustainable energy and Industrialization and Education and Capacity building. The following themes emerged from the proceedings:

- In Africa, climate change is contributing largely to food insecurity as a result of increasing water shortages, temperature rise, delayed and quickened seasonal changes and drought.

- Gender equality accounts for the efficiency of the fight against climate change vulnerability
- Barriers to climate change adaptation and their distinctive outcomes are interconnected across the African continent
- African governments should invest in climate change and provide sustained financial support for climate change initiatives.
- It is imperative to strengthen collaboration between academia and policy makers towards reaching agreement on the intended Nationally Determined Contributions (INDCs) in Paris 2015.

Enhancing Food Production and Processing Research Centre of Excellence

During the 2014-2015 academic year, the Convener of the Centre of Excellence for Enhancing Food Production and Processing, Professor Samuel Kwame Offei was replaced with the Provost of the College of Basic and Applied Sciences, Professor Ebenezer Oduro Owusu, this was to ensure continuity as the former has become the Pro Vice Chancellor of the University.

In keeping with its key objective of enhancing food production and processing for national and international impact, the Committee through meetings and consultations focused on developing activities that fall within the already identified key research areas of regional significance, namely:

- Crop Production and Processing improvement;
- Livestock production and processing systems;
- Technologies to address Post-harvest losses; and,
- Food safety processes

As such, key activities were identified with the main aim of financially supporting profitable and sustainable existing and new food productive and processing project activities and using the revenue accrued to do further research in the abovementioned four areas.



The following activities were prioritised in the year under review:

- **Cereals and Grains** - Integrated Research and Development System for improved Maize and Rice Production, Processing and Preservation
- **Vegetable Production** - Research into improving production, processing and preservation of quality vegetables using already developed technologies
- **Animal Production** - Integrated Research and

Development system for Animal production / Processing (Poultry and Piggery). Research on Integrated Tilapia production and processing at Kpong, Eastern Region

- **Existing Commercial Products** - Enhancing the production of existing UG-branded food products such as Yogurt, Ice Kenkey and fortified cereals.



Development Policy, Poverty Monitoring and Evaluation (DPPME) Centre of Excellence

The Development Policy, Poverty Monitoring and Evaluation (DPPME) Centre of Excellence has identified five thematic areas as core research, practice and policy issues for the centre's activities: (1) Sustainability and Enterprise Development; (2) Labour Market issues; (3) Health and Social Wellbeing; (4) Public Spending and Millennium Development Goal (MDGs) Targets; and (5) Poverty Analysis. Each sub-theme is led by Centre members with the relevant expertise, as summarised in the table below.

DPPME sub-theme	DPPME sub-theme
Health and Social Wellbeing	Professor Ama de-Graft Aikins (Regional Institute for Population Studies) & Professor Moses Aikins (School of Public Health)
Labour Market issues	Dr William Baah-Boateng (Dept of Economics)
Poverty Analysis	Professor Ellen Bortei-Doku Aryeetey (CSPS) and Ms Abena Oduro (Dept of Economics/CSPS)
Public Spending and Millennium Development Goal (MDGs) Targets	Dr. Robert Darko Osei (ISSER)
Sustainability and Enterprise Development	Professor Robert Hinson (UGBS)

The two main activities that were developed for the year under review are:

1. Bibliographic Projects on Development and Poverty
2. Development Policy and Practice Seminars



Planned Activities for 2015-2016

- Embark on multidisciplinary research projects identified through the thematic scoping workshops
- Hold Roundtable discussions on topical issues related to the DPPME thematic areas
- Organize workshops for PhD students on Monitoring and Evaluation, Randomized Control Trials for development research and techniques in poverty analysis.

THE UNIVERSITY OF GHANA READERS PROJECT

The University of Ghana Readers Project is a collection of discipline specific essays reflecting the history and developments of various disciplines and sub-disciplines at the University over several decades. Partly funded with internally generated university funds and funds from the Carnegie Corporation, the project is managed by a seven-member multidisciplinary Editorial Board, led by Professor Emerita Mary Esther Dakubu. Readers are categorised under 6 Series, each with a series editor or editors as indicated in the table below.

30 readers were published between 2013 and July 2014.

The first set of 6 readers was launched in November 2013 as part of the University's 65th anniversary.

The second set was launched in July 2014. In the year under review 6 Readers were published and 10 Readers were in Press by end of the academic year. A final launch to mark the end of the first phase of the UG Readers Project was held in July 2015, at the Great Hall. The event was chaired by the Vice Chancellor, Professor Ernest Aryeetey.

With 8 forthcoming titles in the coming months, the UG Readers Project will have produced 54 disciplinary titles by 47 departments, centres and institutes, by the end of 2016. This will be the largest publication initiative of an African University.

AGRICULTURAL SCIENCES SERIES

Series Editors: Professor Kwadwo Koram and Professor Ama de-Graft Aikins

M. Yanyuoru, a. Naazie, D.S. MacCarthy, G.O Nkansah and S.K Torkpo (Eds). (2015). *Agricultural Research for Food Security and Sustainable Livelihood*. Accra: Digibooks Ghana Ltd.

Gertrude S. Aboagye, Benjamin K. Ahunu, Richard Osei-Amponsah and Raphael A. Ayizanga (Eds) (2015). *Readings on Some Key Issues in Animal Science in Ghana*. Accra: Digibooks Ghana Ltd.

ARTS AND HUMANITIES SERIES

Series Editor: Professor Mary Esther Dakubu

Abamfo O. Atiemo, Ben-Willie K. Golo and Lawrence K. Boakye (Eds) (2014). *Unpacking the Sense of the Sacred – A Reader in the Study of Religions*. Oxford: Ayebea Clarke Publishing.

Josephine Dzahene-Quarshie, Ildiko Csajbok-Twerefou and Joana Boampong (Eds). (2014) *Journeys through the Modern Languages at the University of Ghana*. Oxford: Ayebea Clarke Publishing.

Awo Mana Asiedu, E. John Collins, Francis Gbormittah and F. Nii-Yartey (Eds) (2014). *The Performing Arts in Africa – Ghanaian Perspectives*. Oxford: Ayebea Clarke Publishing.

Gordon S.K. Adika, Sika Ahadzie and Charles Asante (Eds) (2014). *Multilingualism, Language in Education and Academic Literacy. A Reader from the Language Centre*. Accra: Sub Saharan Publishers.



BUSINESS SERIES

Series Editors: Professor Joshua Abor, Professor Mary Esther Dakubu and Professor Ama de-Graft Aikins

Kwasi Dartey-Baah and Kwesi Amponsah-Tawiah (Eds) (In Press). Organization and Human Resource Management: Relevance of Current Practices in Ghana. Accra: Digibooks Ghana Ltd.

E.K. Sakyi and A. Ahenkan (Eds) (In Press). Public Administration in Ghana: Selected Contemporary Issues. Accra: Digibooks Ghana Ltd.

Samuel C.K Buame, Dan M. Quaye, Robert E. Hinson and Kobby A. Mensah (Eds) (In Press). Developing Economy Perspectives on Marketing and Entrepreneurship – The Ghanaian Dimension. Accra: Digibooks Ghana Ltd.

CLINICAL SCIENCES SERIES

Series Editor: Professor C. Charles Mate-Kole

Nii Otu Nartey and Ebenezer Anno Nyarko (Eds) (In Press). Dentistry in Ghana: The Journey so Far and the Challenges Ahead. Accra: Sub Saharan Publishers.

Margaret Lartey, Timothy Acheampong and Michael O. Mate-Kole. (Eds). (In Press). Internal Medicine Practice in Ghana: Challenges, Innovations and Future Directions. Accra: Digibooks Ghana Ltd.

George Obeng Adjei and David Ofori-Adjei (Eds) (In Press). Towards Safe and Effective Treatment of Disease in Ghana: Contributions from Clinical Pharmacology. Accra: Digibooks Ghana Ltd.

PHYSICAL AND LIFE SCIENCES SERIES

Series Editor: Professor Kwadwo Koram

Patrick K. Ofori-Danson, Elvis Nyarko, Kwasi Appeaning Addo, Dzidornu K. Atsu, Benjamin O. Botwe and Euine K. Asamoah (Eds) (In Press). Assessment and Impact of Developmental Activities on the Marine Environment and the Fisheries Resources of the Gulf of Guinea. Accra: Digibooks Ghana Ltd.

Matilda Steiner-Asiedu, Agatha Ohemeng and George A. Annor (Eds). (In Press). Perspectives from the World of Nutrition and Food Science. Accra Digibooks Ghana Ltd.

SOCIAL SCIENCES SERIES

Series Editor: Professor Ama de-Graft Aikins

Ellen Bortei-Doku Aryeetey, Brigid Sackey and Stephen Afranie (Eds) (In Press). Contemporary Social Policy Issues in Ghana. Accra: Sub-Saharan Publishers.

George Owusu, Robert D. Osei and Felix A. Asante (Eds) (In Press). Development Policies and Practices in Ghana: A Reader. Accra: Sub-Saharan Publishers.



RESEARCH ACTIVITIES WITHIN INSTITUTES AND CENTRES

NOGUCHI MEMORIAL INSTITUTE FOR MEDICAL RESEARCH (NMIMR)

In many respects the 2014/2015 year recorded a number of significant attainments for the Noguchi Memorial Institute for Medical Research. A number of infrastructural projects were completed, significant among them being the 2nd and final phase of the JICA supported *“Project for Introducing Clean Energy by the Solar Electricity Generation System”* that was completed in August 2014.

This added an additional 400 kVA to the 315 kVA of the first phase thereby bringing a total generation of 715 kVA of photovoltaic power to the University’s grid.



PROFESSOR KWADWO KORAM

Director, Noguchi Memorial Institute for Medical Research (NMIMR)



Solar Energy Plant at MNIMR

In addition, the refurbishment of the Institute continued with the upgrading of the old laboratories and a further 4 laboratories were refurbished with a grant from the Ghana National Petroleum Corporation (GNPC).

Following the initial enrollment of postdoctoral fellows in 2011, the Bill and Melinda Gates Postdoctoral Fellowship program currently has eleven (11) fellows conducting research in Malaria, Tuberculosis, Buruli Ulcer and HIV/AIDS. The fellows, who are of different nationalities, continue to display exemplary commitment to research in their various fields of study.

During the period, the Institute succeeded in attracting a grant income of more than USD 5.8 million and about GHS 800,000. This increased level of funding has enabled the institute to maintain its high standard of scientific research in all the departments.

Our mandate to support the Ministry of Health (MOH)/ Ghana Health Service (GHS) with advanced laboratory support in disease control activities was stretched to the limit as we were called upon during the year to test suspected samples for Ebola not only from Ghana but also from other countries in the sub region.

Our scientists performed admirably as we were more or less depended upon as a first line laboratory rather than a reference laboratory. By the end of the year, we had successfully tested more than 140 samples from Ghana and Togo. All samples were negative for the Ebola virus.

Our administrative systems have seen some injection of effective practices leading to further streamlining of procedures.

I am very optimistic that all the levels of success recorded will continue to make the institute maintain its first class position in research in Africa and globally.

Young Research Fellows

NMIMR has an institutional policy to support young scientists to establish themselves in their field of research. In the year under review, four (4) such young trainees completed their doctoral studies and are ready to be absorbed into their various departments. These trainees are:



Dr. Adwoa Asante-Poku Wiredu

Dr. Adwoa Asante-Poku Wiredu (*Bacteriology Department*)

Dr. Asante-Poku Wiredu graduated with a PhD in Microbiology from Swiss Tropical and Public Health Institute, University of Basel in December 2014. Her research interest focused largely on mycobacterial diseases of public health interest.

Dr. Gloria Ivy Mensah (*Bacteriology Department*)

Dr. Mensah graduated with a PhD from the Centre for International Health, Ludwig Maximilians University, Munich-Germany in September 2014. The title of her PhD research was "*Biomarkers for TB treatment response and cure: Immunological profiles of individuals infected with Mycobacterium tuberculosis complex in Ghana*".



Dr. Gloria Ivy Mensah

Dr. Beverly Egyir (*Bacteriology Department*)

Dr. Beverly Egyir is a product of the Faculty of Health and Medical Sciences, University of Copenhagen, Denmark. Her PhD study in Molecular Bacteriology and Infection focused on nasal carriage prevalence, antimicrobial resistance and molecular diversity of *Staphylococcus aureus* isolated from hospital and community settings. She hopes to study the epidemiology and control of multi-drug resistant bacterial of clinical relevance, such as MRSA in Ghana.



Dr. Beverly Egyir



Dr. Bright Adu (*Immunology Department*)

Dr. Bright Adu joined the Immunology Department as a Research Assistant on the NIH sponsored EBA175 malaria vaccine trial. Dr. Adu completed his PhD in 2014 and is currently a co-principal investigator alongside Professor Doodoo as the Principal Investigator on a project that seeks to identify functional immunogenetic correlates of malaria immunity in Ghanaian children. The project attracted a **USD 1,435,200** funding support from the Danish Ministry of Foreign Affairs. His career plans include elucidating the functional implications of genomic structural variations such as gene inversions, duplications, translocations and deletions in communicable and non-communicable



Dr. Bright Adu

Featured Research Fellows



Dr. Benjamin Kwaku Abuaku

Dr. Benjamin Kwaku Abuaku, is a Research Fellow in the Epidemiology Department. His main research interest is malaria epidemiology. His work on the therapeutic efficacy of antimalarial drugs contributed to the change of the national malaria treatment policy in 2005, when chloroquine was replaced with artesunate-amodiaquine combination as first line treatment for uncomplicated malaria. He continues to provide efficacy data on Artemisinin-based Combination Therapies (ACTs) to the National Malaria Control Programme (NMCP) and the World Health Organization (WHO), with support from the Global Fund to fight AIDS, Tuberculosis and Malaria (GFATM) and the U.S National Institute of Health (NIH). He is currently a member of the Malaria Case Management Technical Working Group at the Ministry of Health. He collaborates with the NMCP to monitor the impact of malaria interventions on disease prevalence by tracking malaria parasite positivity rates in thirty (30) sentinel



sites across Ghana, with support from GFATM and the U.K Department for International Development (DFID). He provides epidemiological support for Indoor Residual Spraying (IRS) programmes in the Bunkpurugu-Yunyoo district of northern Ghana and the Obuasi Municipality with funding from the U.S. President Malaria Initiative (PMI) and AngloGold Ashanti (AGA). He also collaborates with Chinese Scientists in studying risk factors for tuberculosis and flood-

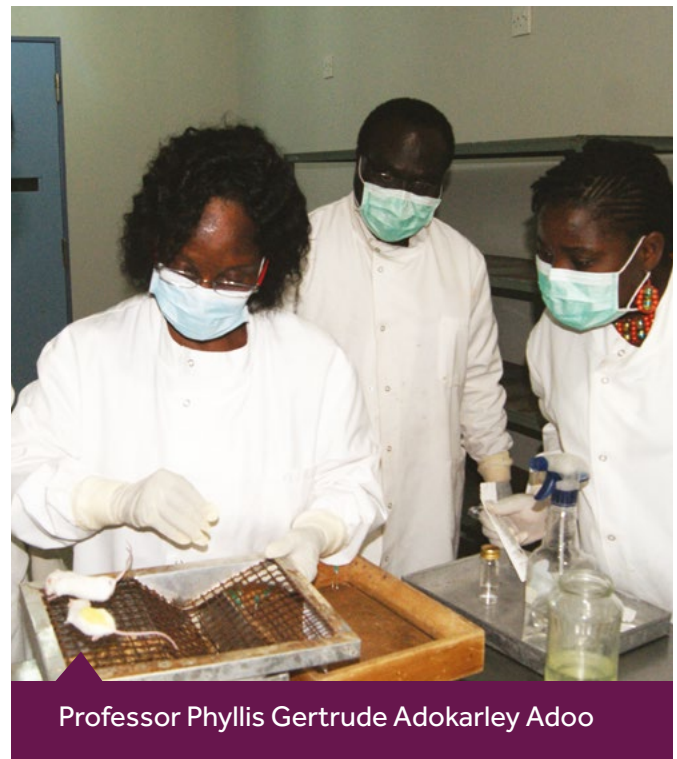
related health problems.

Dr. Abuaku holds a BSc (Nursing with Zoology) and MPhil (Public Health) degrees from the University of Ghana; Post-Graduate Diploma (Research Methodology) from the University of Copenhagen; and PhD (Epidemiology and Health Statistics) from the Central South University, China.

Professor Phyllis Gertrude Adokarley Addo is an Associate Professor and the Head of Department for Animal Experimentation NMIMR. With a PhD in Zoology from University of Ghana, she has expertise in the production of conventional and genotobiotic laboratory animals for research, teaching, testing and diagnosis, and genetic and microbiological assessment of laboratory animals. She is also an authority in the designing and management of conventional and environmentally-controlled breeding and experimentation animal facilities, and environmental and microbiological assessment of conventional and microbially-controlled animal facilities and accessories.

She played a pivotal role in the establishment of the Department of Animal Experimentation and designed the animal facility, which was accepted by the Japanese for construction. Professor Addo played a pivotal role in the establishment of a 15-member institutional animal care and use committee (IACUC), on her return from a month's working visit to Yale University. The IACUC currently serves the whole university.

Since joining the Institute in 1984, she has undertaken several research projects and has 42 peer-reviewed publications and 36 technical reports to her credit. She has successfully supervised 49 research projects of undergraduate and post graduate students. She has obtained research grants from various organizations, ranging from *USD15,000.00 to EUR 2,000,000.00*.



Professor Phyllis Gertrude Adokarley Addo

She is a member of the 'One Health National Networks for Enhanced Research in Infectious Diseases' which focuses on interdisciplinary collaboration in the prevention and control of zoonoses. The network comprises veterinarians, medics, wildlife personnel, microbiologists, epidemiologists, social scientists, environmentalists and laboratorians, from Ghana, Uganda, Tanzania and Zambia.

Professor Addo was a beneficiary of a Japan International Cooperation Agency Fellowship in 1986 and 1999, and a Yale University Research Fellowship in 2012.



Dr. Anita Ghansah's research experience began at the Institute as a national service personnel where she was trained at the Parasitology Department to apply basic molecular biology tools to identify malaria parasites and to answer basic research questions in malaria bordering on genetic variations in the malaria parasite. She progressed to managing the molecular biology laboratory of the Department from 1999-2004.

Her research focuses on how genetic diversity influences the epidemiology and pathogenicity of malaria and its implication on therapeutic, vaccination strategies as well as vector control. She is currently coordinating the parasite genetics aspects of a study that is measuring changes in reservoir of malaria infection in northern Ghana using molecular diagnostic methods funded by the Howard Hughes Medical Institute USA in collaboration with Professor Karen Day. She is also working on a study on the Impact of Distinct Eco-epidemiology on Malaria Drug Resistance in Ghana, an NIH funded grant awarded in 2013 for a five-year period. This project is in collaboration with Professor Dyann Wirth and her team at the Harvard TH Chan School of Public Health. She has also been appointed a visiting scientist in the Department of Immunology and Infectious Diseases at the same institution. She is also exploring *Plasmodium falciparum* genome to understand the genetic diversity, emergence of drug resistance and vaccine efficacy. To this end, the PDNA has received a Wellcome Trust/ DELTAS grant about 4.7 million GBP for genetics/genomics training,

geared towards malaria elimination in Africa.

Dr. Ghansah also supports the genetics/genomics aspects of research projects on other diseases apart from malaria. She serves as a member of the expert working group on malaria elimination in Ghana, constituted by the Vice Chancellor of the University of Ghana, with a mandate to produce a comprehensive approach for the elimination of malaria in Ghana. She is responsible for the role of parasite and human genetics and genomics in the malaria elimination efforts.



Dr. Anita Ghansah

Research Administration

To further enhance the skills of research administrators in order to provide improved research support services, two Research Development Officers and two Administrative Assistants participated in various capacity building workshops and conferences. This formed part of an effort to network the Office for Research Support with similar offices in Africa and to develop new skills in research management.

Conference on Research and Innovation Management

Under the auspices of the H3Africa Kidney Disease Research Network, Nana Oye Akuffo, Research Development Officer at NMIMR and Isabella Rockson, a Grant Administrator attended the Society of Research Administrators (SRA) 2014 conference in San Diego, California, USA in October. The conference brought together research administrators from across the globe



to learn, share and transform ideas into solutions. It was structured to provide unique opportunities for learning from other experienced research administrators. The topics were selected to expose participants to innovative ways of making grant management more efficient and rewarding. Useful information about the existence of various websites containing lists of available grants and the application requirements were provided to the participants.

NIH Bioethics/ IRB Internship Training

The Department of Bioethics, National Institute of Health (NIH) in cooperation with the NIH combined Neurosciences IRB and the National Human Genome Research Institute Education and Community Involvement Branch offers an IRB internship for a cohort of up to six (6) qualified candidates every year subject to availability of funding. **Ms Helena Baidoo** from NMIMR was selected among others from Nigeria, Malawi and China to participate in the 2014 Fall programme held from September to December, 2014.



Ms. Baidoo (right) together with other Interns: Rage, Segun and Champing, Supervisor (Christine) and the coordinator (Reidar) of the funding agency for the programme from Norway.

West African Research and Innovative Management Association (WARIMA) Workshop

Two Administrative Assistants in the Office of Research Support:- Griselda Annan and Mansuratu Hassaan attended the 8th WARIMA workshop and conference held in Elizade University, Ilara-Mokin, Ondo State, Nigeria, under the theme *"Enhancing University-Government-Industry Research and Innovation Partnerships for Local Relevance and Global Competitiveness."*

The conference was designed to provide a platform for open and round table discussion among participants with a view to engaging policy makers (Government), Professionals, Chief Executives of Industries (SMEs), Scientists and Researchers from Universities and Research Institutes within and outside of Nigeria. A pre-workshop forum

was organized for research administrators and key areas discussed included: types of research, characteristics of a good research proposal, accessing national/international funding sources and meeting funding requirements.



From left: Mansuratu Hassaan & Griselda Annan



Project Title	Donor	Principal Investigator	Total (USD)	Amount (GHC)
Presidential Malaria Initiative/Res. Triangle Inst. 2	ABT Associates Inc., Ghana	Dr. Samuel Dadzie		128,878.68
Supporting African Municipalities in Sustainable Energy Transitions (SAMSET)	ABT Associates Inc., Ghana	Dr. Samuel Dadzie		60,000.00
ABT/Presidential Malaria Initiative 5 2014	ABT Associates Inc., Ghana	Dr. Benjamin Abuaku		88,813.75
SCHISTOVAC	Academisch Ziekenhuis Leiden	Professor Daniel A. Boakye	38,697.48	
ACCESS BIO	Access Bio Inc.	Dr. William Anyan	193.18	
RELACS/PARRAF	Agence Comptable Secondaire	Professor Kwabena M. Bosompem	3,207.07	
Obuasi Prevalence Study	Anglogold Ashanti	Dr. Collins Ahorlu & Dr. Benjamin Abuaku		81,105.90
BAYER	BAYER	Dr. Samuel Dadzie	27,410.50	
Training Workshop	Bergen University	Helena Baidoo	5,819.85	
Epidemiology, Prevention and Treatment of Influenza	Center for Disease control	Professor William Ampofo	838,697.00	
Cutaneous Leishmaniasis in West Africa	CSM Intramural	Professor Daniel A. Boakye	61,778.29	
Bu One Afrique	CSRS Afrique One	Dr. Lydia Mosi	5,761.21	
Afrique One	CSRS Afrique One	Professor Kenedy .K. Addo	39,817.60	
Malaria Vaccine Research and Capacity Building in Ghana	Danida Fellowship	Dr. Michael Ofori	110,964.71	
Functional Immunogenetic	Danida Fellowship	Professor Daniel Dodoo	155,232.36	
PEERS EPIVAC	EPIVAC	Dr. Michael Ofori	15,762.29	
NIH Hookworm	Federal Reserve Bank	Professor Michael D. Wilson	47,167.00	
NMIMR-FIND BU LAMP	Fondation For Innovation New Diagnosis	Dr. Anthony Ablordey	60,000.00	
GEBI Nestle Foundation	Fons Nestle Etude	Dr. Godfred Egbi	18,031.00	
Peers Bioinformatics Biostatistics Workshop	French Embassy	Dr. Michael Ofori		27,920.00
GAIN (Global Alliance for Improved Nutrition)	GAIN (Global Alliance for Improved Nutrition)	Professor Margaret Amar-Klemesu	75,000.00	
New Born Care	General Hospital Corp.	Dr. Daniel Arhinful	46,392.50	
CIEE	Ghana Global Health	Dr. William Anyan	4,689.00	
GAIN (Global Alliance for Improved Nutrition)	Global Alliance	Professor Margaret Amar-Klemesu	50,000.00	
GLOBAMED	GLOBAMED	Dr. Daniel Arhinful	46,896.96	
Grand Challenge	Grand Challenge	Dr. Anthony Ablordey	6,010.09	
Grand Challenge	Grand Challenge	Professor George E. Armah	5,865.75	
Cancer Workshop	Health Research Inc.	Professor Kwadwo A. Koram	25,359.00	
DHS-7	ICF International	Professor George E. Armah	10,236.00	
Home Grown School Feeding (DUBAI CARES)	Imperial College	Professor Kwabena M. Bosompem	637,780.00	
Home Grown School Feeding (DUBAI CARES)	Imperial College	Professor Kwabena M. Bosompem	637,780.00	
HLA/HIV and Retrovirus in West Afria	Japanese Foundation For AIDS	Professor William Ampofo	28,433.40	



Project Title	Donor	Principal Investigator	Total (USD)	Amount (GHC)
BENNET - ELECTRIC FUN	Katrina Nardini	Dr. Collins Ahorlu	7,500.00	
Liverpool Contd/Operational Research	Liverpool School of Tropical Medicine	Professor Daniel A. Boakye/ Dr. Irene Aryee	75,173.91	
Liverpool Contd/Operational Research	Liverpool School of Tropical Medicine	Professor Daniel A. Boakye/ Dr. De Souza Dziedzom	73,716.58	
LFSCA Workshop	Liverpool School of Tropical Medicine	Professor Michael D. Wilson	31,410.00	
Targets Patterns of Invasion Immunity	London School of Medicine	Dr. Gordon Awandare	52,692.50	
PF 48/45-MTB	Loyola University of Chicago	Dr. Linda Amoah	53,548.00	
Vaccine Effectiveness & Efficacy	National Foundation For The Centres For Disease	Professor George E. Armah	129,591.75	
H3Africa Genomic Centre	National Institute of Health	Professor Alex K. Nyarko	10,576.00	
H3 Africa Kidney Disease Project	National Institute of Health	Dr. Dwomoh Adu	920,000.00	
Impact of Distinct Eco-Epidemiology on Malaria Drug in Ghana	National Institute of Health	Dr. Anita Ghansah	193,193.00	
NIH Hookworm	National Institute of Health	Professor Michael D. Wilson	40,000.00	
Role of Complement Receptor-1 in Erythrocyte Invasion by Plasmodium Falciparum	National Institute of Health	Dr. Gordon Awandare	51,573.00	
Malaria Disease Prevalence Study 2	National Malaria Control Program	Dr. Benjamin Abuaku	570,260.00	
HIV-Associated TB Epidemic in Ghana	Odense University Hospital	Professor Kenedy K. Addo	51,573.00	
STOPENTERICS	Pasteur STOPENTERICS	Professor George E. Armah	18,695.32	
Concern Health	Preventive Ltd.	Dr. Samuel Dadzie	5,200.00	
Global Med.	Regie Cotonou Avance	Dr. Daniel Arhinful	34,042.57	
Malaria Vaccine Research and Capacity Building in Ghana	Regional Hovedstaden	Dr. Michael Ofori	192,729.00	
PhD Studentship (Irene Offei)	School of Public Health	Irene Offei	21,167.40	
Sickle Cell	Sickle Cell Foundation	Professor Francis Nkrumah		10,054.60
LFSCA Workshop	Sight Savers	Professor Michael D. Wilson	1,852.00	
Stop Buruli	Stiftung Fairmed	Professor Dorothy Yeboah Manu	208,649.50	
CHIG	Stitching Amsterdam Institute	Dr. Daniel Arhinful	41,555.63	
Clinical Pathology	The Children's Hospital	Dr. Regina Appiah-Opong	9,339.00	
Global alliance for improved nutrition	The Global Alliance	Professor Margaret Amar-Klemesu	75,000.00	
PhD Studentship (Nana Ama Amissah)	University Medisch Centrum	Nana Ama Amissah	182,822.00	
H3 Africa Bionet	University of Cape Town	Dr. James Brandful	71,415.99	
PhD Studentship (Yvonne Azasi)	University of Edinburg	Dr. Gordon Awandare	8,275.00	



Project Title	Donor	Principal Investigator	Total (USD)	Amount (GHC)
Functional Immunogenetic	University of Heidelberg	Professor Dorothy Yeboah Manu	74,652.07	
Student Fees	University of Melbourne	Dr. Anthony Ablordey	16,292.58	
Impact of Seasonality and Vector Control	University of Michigan	Professor Kwadwo A. Koram	73,100.77	
NAMRU 3 A. KUSI	US Naval Medical Research	Dr. Asamoah Kusi	90,953.06	
Integrated Hospital Based	US Naval Medical Research	Dr. Daniel Arhinful	7,871.28	
Evaluation of SR Product	US Naval Medical Research	Professor Daniel A. Boakye	136,954.00	
ILI and SARI	US Naval Medical Research	Professor Kwadwo A. Koram	64,968.95	
MIL-MIL 2	US Naval Medical Research	Professor William Ampofo	39,966.57	
VESTERGAARD	VESTERGAARD	Professor Daniel A. Boakye	11,209.35	
NIRMOP	VESTERGAARD	Dr. Samuel Dadzie	5,285.00	
EPC MAL	Weil Medical College the Joan & Sanford	Professor Ben Gyan	99,080.00	
Wellcome Trust	Wellcome Trust	Professor Dorothy Yeboah Manu	212,484.00	
POLIO	World Health Organization	Dr. Jacob Barnor		163,194.52
WHO Phase 3 Trial 2	World Health Organization	Dr. Samuel Dadzie	48,511.32	
Research and Training in Tropical Diseases	World Health Organization	Professor Michael D. Wilson	18,115.20	
Ebola Fund	World Health Organization	Professor Kwadwo A. Koram		157,694.00
Rotavirus	World Health Organization	Professor George E. Armah	21,833.50	
Workshop (Minor Project)	World Health Organization	Professor William Ampofo		6,000.00
Total			5,840,424.04	723, 661.45



WEST AFRICAN CENTRE FOR CELL BIOLOGY OF INFECTIOUS PATHOGENS (WACCBIP)

WACCBIP is made up of faculty from the Department of Biochemistry, Cell and Molecular Biology (BCMB) and the Noguchi Memorial Institute for Medical Research (NMIMR), with collaboration from several regional and international partner institutions.

The 2014/2015 academic year was a very productive year in terms of research output and training activities. During the period under review, 40 papers were published by faculty and students affiliated to WACCBIP. In addition, WACCBIP maintained its high intensity in grantsmanship, with several students and faculty applying for various funding initiatives. Some of these applications were successful, while others are looking very likely to yield fruits in the coming year.

Research with significant findings

Genomic Analysis of Malaria Parasites in Ghana to Guide Vaccine Development

Although there are several promising malaria vaccine candidates in the development pipeline, the major challenge that has limited the progress of an effective, deployable vaccine is the extent of genetic diversity in the parasite population in the field. Therefore, malaria parasites were collected from children in Kintampo and Navrongo, and their DNA was sequenced for genome wide sequence analyses. Data for 85 different clinical isolates showed a high level of similarity between Kintampo and Navrongo parasites. However, there were some genes identified as potential targets of locally varying selection, including genes involved in parasite development in mosquitoes, members of variant-expressed multigene families, and a leading vaccine-candidate target of immunity.



DR. GORDON AWANDARE

Director, West African Centre for Cell Biology of Infectious Pathogens (WACCBIP)

Workshops Organised

West African Merozoite Invasion Network held maiden Workshop in Dakar, Senegal

A new coalition of WACCBIP-affiliated scientists with a shared interest in erythrocyte invasion mechanisms held its maiden workshop entitled 'Targeting Malaria: Plasmodium falciparum Invasion Assay' at the Laboratory of Bacteriology-Virology in the hospital Aristide Le Dantec in Dakar, from 8th – 13th June, 2015.

The objective of the network is to share ideas on assay procedures and to train young scientists on methods for studying invasion mechanisms through laboratory techniques. The network is a coalition of researchers as well as early stage scientists in the field of Plasmodium falciparum erythrocyte invasion. Trainees were drawn from across the West African sub-region, including Ghana, The Gambia, Nigeria, Senegal, Mali and Burkina Faso. The workshop was supported with funds from the Cambridge-Africa programme. The professors/facilitators included Julian Rayner, Manoj Duraisingh, Amy Bei, David Conway, Tandakha Diallo, Mamadou Diakite, Ambroise Ahoudi, Alfred Amambua- Ngwa, Zenon Zenonos and Gordon Awandare. Participants went through four days of laboratory work in order to better understand and perfect invasion techniques.



While in Dakar, some WACCBIP faculty members including Dr. Gordon Awandare, Professor David Conway and Professor Mahamadou Diakite visited the Institut Pasteur to tour their facilities and explore potential collaborative research projects. They were hosted by Dr. Makhtar Niang and Dr. Aissatou Toure, the head of Immunology at the Institute.



Dr. Patrick Arthur Kwabina

Delivering a presentation at a workshop organised in Dakar



PROFESSOR ERIC DANQUAH

Director, West Africa Centre for Crop Improvement (WACCI)

WEST AFRICAN CENTRE FOR CROP IMPROVEMENT (WACCI)

Graduation of the third cohort of WACCI students

Ten students of the West Africa Centre for Crop Improvement (WACCI), graduated from the University of Ghana, Legon, with PhDs in Plant Breeding on July 24, 2015 at the Great Hall of the University. Eight out of the ten students from the graduating cohort were sponsored by the Alliance for a Green Revolution in Africa (AGRA) and two, by the Generation Challenge Programme (GCP). The graduates are from seven West, East and Central African Countries namely Burkina Faso, Kenya, Mali, Niger, Nigeria, Cameroon and Ghana.

WACCI launches Vegetable Innovation Lab (VIL)

During the academic year under review, WACCI has launched a Vegetable Innovation Laboratory (VIL) as part of efforts to promote vegetable production and food security in Ghana and the sub-region. The VIL thematic areas include genetic improvement, vegetable production and quality control, processing, value chains and socio-economic research, policy research and knowledge management systems. The launch, which was part of a two-day stakeholder workshop on the Tomato Value Chain in Ghana organised by WACCI in collaboration with Syngenta Foundation for Sustainable Agriculture, brought together 35 renowned research scientists and stakeholders in the tomato industry from across the globe. It sought to create awareness about the proposed WACCI VIL; explore the possibility of establishing a public-private consortium in West Africa that raises tomato productivity through an integrative research approach underpinned by science and technology and to develop a strategy for accelerating a successful tomato industry in Ghana.

Updates on WACCI Maize Breeding Programme

WACCI runs a Maize Breeding Programme (MBP) at the University farm in Legon. Maize is an important staple food crop for 1.2 billion people in sub-Saharan Africa and Latin America. It is the most important grain crop in West Africa in terms of quantity produced and consumed. The MBP has maintained about 250 inbred lines and currently uses about 20 of these lines for developing hybrids. Preliminary evaluations of the hybrids have identified combinations



which have yielded 9-12 t/ha in multi-locational trials. Current maize yields are about 1.7 t/ha in Ghana. More evaluations are under way to generate adequate data to apply for the registration and release of the promising hybrids. The germplasm includes white and yellow materials in line with the requirements from consumers in Ghana. Two students from Crop Science Department are conducting their MPhil theses research under the MBP.

WACCI Graduates Participate in Sweet Potato Breeders Meeting

A WACCI graduate and two students, Dr. Some Koussao (Cohort 1, Burkina Faso), Mr. Ernest Baafi (Cohort 3, Ghana) and Mr. Afuape Solomon Olufemi (Cohort 5, Nigeria), all sweet potato breeders in their respective home countries have participated in the 14th Annual Sweet potato Breeders Meeting held in Uganda from June 2 to 5, 2015. The meeting brought together over 42 scientists from 14 countries across sub-Saharan Africa (SSA), the International Potato Center (CIP), Peru, a team from the Genomic Tools for Sweet Potato Improvement Program (GT4SP) led by Prof. G.C. Yencho from North Carolina State University and many other experts in genomics, bioinformatics and sweet potato virology. Also at the meeting was Dr. Jim Lorenzo, a renowned plant breeder and representative of the Bill and Melinda Gates Foundation and Dr. Jane Ininda, plant breeder and Associate Program Director of PASS, AGRA. The meeting gave the participants the opportunity to share the progress and challenges in the area of sweet potato breeding in SSA and also learn about the new tools that could help enhance sweet potato breeding in the sub-region.

WACCI-CGIAR Dryland Cereals Scholarship Award

Five students of WACCI were awarded the WACCI-CGIAR Dryland Cereals Scholarship Award this year upon merit to support their research work on sorghum and pearl millet improvement. Each successful applicant has received

a grant of USD 9,000. The objective of the scholarship program is to support research activities including genotyping services and visits to advanced labs for data analysis.

WACCI Vision 2028 workshop

WACCI held a three-day workshop from July 14 -16, 2015 at the Volta Hotel, Akosombo on the theme "Transforming WACCI into a sustainable Centre of Excellence for Training Plant Breeders and Seed Scientists for the future of food security in Africa". The workshop brought together 35 participants from six academic units of the University of Ghana - the Business School, the Department of Botany, the Department of Biochemistry and Cell Biology, the Department of Soil Science, the Department of Crop Science, the Biotechnology Centre and WACCI - and affiliated retired academics. Also in attendance were the Pro-Vice Chancellor for Academic and Student Affairs, the Provost of the College of Basic and Applied Sciences, the Director of Finance, the Dean of the School of Graduate Studies and the founding Director of the Plant Breeding Centre, University of Illinois and Chairperson of the WACCI External Review Panel, 2015, Professor Emerita Rita Mumm. The Review Panel concluded that given WACCI's evolution, strategic plans for further expansion, as well as its record of success to date, the centre was poised to have a tremendous impact on food security for Africa in the decade ahead and beyond.

WACCI - Africa Centre of Excellence for Training Plant Breeders and Seed Scientists

The first Africa Centre of Excellence project supervision and effectiveness workshop was held in November 17-20, 2014 in Yaoundé, Cameroon. During the workshop, three breakout sessions which concentrated on Financial Management, Procurement, and Monitoring and Evaluation of the Centres of Excellence were held.



The second workshop held in The Gambia from May 11 - 14, 2015 focused on the status of each of the Centres of Excellence. During this workshop, Centre Leaders and other delegates of the five Agricultural category ACEs unanimously endorsed WACCI as the front-runner of the World Bank-funded project. Dr. Carl Larsen, Senior Agricultural Education Specialist of the World Bank, Washington DC Office, USA, commended WACCI for the leadership role in plant breeding education in the sub-region and challenged the leadership of the ACEs to strive for even higher standards by securing international accreditation for programmes while putting in place continuing education training programmes.

INSTITUTE OF STATISTICAL, SOCIAL AND ECONOMIC RESEARCH (ISSER)

In the year under review, ISSER launched research activities in the ECOWAS sub-region thus fulfilling a long-held aspiration to conduct research in other parts of the African continent. The Institute also followed its four core lines of activities - research, publications, training, advocacy - and engaged in over 20 research projects, of which selected key projects are highlighted in subsequent sections of this Report.

ISSER publications continue to serve as a solid and credible source of information for researchers, students and policy makers within and outside Ghana. ISSER released five institutional publications including Managing Ghana's Oil Boom for Structural Transformation, Placing Health at the Center of Development, Domestic Resource Mobilization for Inclusive Growth, Ghana Social Development Outlook 2014 and the flagship State of the Ghanaian Economy Report 2013, the launch of which was followed by a road show. We enrolled new students unto our training programmes and organised several platforms of engagement.

At ISSER, our vision is to be recognised globally for promoting knowledge for development through authoritative policy research, training and advocacy. We developed a new five-year Strategic Plan (2014 – 2019). The planning process offered us space to re-examine our thematic areas of research, to ascertain their pertinence to current challenges of development; critically review our programmes and operational processes and re-position



PROFESSOR FELIX ASANTE

Director, Institute of Statistical, Social & Economic Research (ISSER)

ourselves to ensure the sustained relevance of our activities and outputs through the changing times.

Research Projects

The Impact of Reminders of Post-Harvest Aggregation Services and Timely Provision of Price Information on Smallholder Farmers Market Power and Incomes in Mali

In 2013, the Malian Association of Awakening on Sustainable Development (AMEDD) received a grant from the Alliance for Green Revolution in Africa (AGRA) to implement interventions in Mali's largest grain producing region, Sikasso. These interventions are expected to help address the constraints of limited access to agricultural inputs, poor post-harvest management, poor organisation of farmers, limited credit access, and underdeveloped output markets. The overall outcome of the intervention is increased smallholder farmer incomes in the region.



ISSER has been contracted by AGRA through the International Initiative for Impact Evaluations (3ie) to conduct an impact evaluation of the project, mainly to assess the impact of mobile phone reminders of post-harvest aggregation services and timely provision of price information on smallholder farmers' market power. The contract sum for the project is USD 456,292 and the project spans from June 2014 to December 2016. The researchers on the projects are Dr. Robert Darko Osei, Dr. Isaac Osei-Akoto and Dr. Fred Dzanku.



Dr. Robert Darko Osei

Does Reinforcing Agro-dealer Network Improve Access and Use of Agriculture Inputs by Farmers in Niger?

Contribution à l'éducation de Base (CEB), in partnership with Association des Distributeurs des Produits Phytosanitaires du Niger (ADPHYTO), and with funding from AGRA, is implementing a project that aims to reinforce agro-dealers' network in Niger. The intervention aims to improve smallholder farmers' access to and adoption of agricultural inputs in three regions of Niger.

ISSER has been contracted by AGRA through the International Initiative for Impact Evaluations (3ie) to evaluate the impact of the project on key outcomes of interest. Specific objectives include: to analyse the impact

of building the capacity of agro-dealers on smallholder farmers' access to and use of agricultural inputs; to analyse the impact of credit on smallholder farmers' use of agricultural inputs.

The project, which is led by Dr. Robert Darko Osei, Dr. Isaac Osei-Akoto, Dr. Patricia Aidam and Dr. Ama P. Fenny, has a total contract sum of USD 486,895 and is being implemented from June 2014 to March 2017.

Climate Change Finance in Ghana



Group picture of participants at the Climate Change Finance workshop

ISSER in collaboration with Overseas Development Institute (ODI) embarked on a project entitled "*Climate Change Finance in Ghana*". Undoubtedly, climate change is a new area of public policy due to the significant impact it has on people's lives in Ghana. The National Climate Change Policy (NCCP) of Ghana was launched in July 2014. However, there is a limited understanding on what the cost of responding to climate change will be in Ghana. Similarly, there is little knowledge of current spending on climate change related activities in the country.

The 'Climate Change finance in Ghana study sought to:

- Review public spending on activities that are related to climate change, and to assess the extent to which this expenditure responds to existing policy and institutional demands;
- Unravel how climate change-relevant expenditure passes through the budgetary system in response to national policy setting; and
- Assist in the mapping of a strategic financing



- framework for climate change that promotes a whole-of-government approach to climate change actions through the use of country systems.

The project, with a total sum of GBP 49,500 was carried out from December 2014 – May 2015 and funded by the Overseas Development Institute (ODI), UK. The team members for this project include Professor Felix A. Asante, Neil Bird, Dr. Simon Bawakyillenuo and Dr. Cynthia Addoquaye Tagoe.

Public Expenditure and Implementation Review (PEIR) of the Health Sector

The Ghanaian health system has made good progress towards universal health coverage, notably in the introduction of a national health insurance scheme. However, it also faces considerable challenges which undermine efforts to bridge the equity gap. Most importantly, there are persistent challenges in the efficient and effective use of existing financial resources and weak capacity to mobilise extra resources in support of the goal of universal health coverage.

In supporting the Government of Ghana (GoG) to assist in developing the response to these challenges, the Ministry of Health (MoH) finds it expedient to conduct a Public Expenditure and Implementation Review (PEIR). The PEIR is to provide a comprehensive analysis of public sector spending and outcomes and provide information on the public-private mix of goods and service provision, public expenditure priorities, the link between expenditure inputs and outcomes, and public sector institutional arrangements. This is an effort to streamline spending and improve related outcomes in the health sector. The focus of the PEIR is to provide a broad overview of the sector to assist the goals of Universal Health Coverage. It will also complement the Health Sector Medium Term Development Plan (HSMTDP) and other key documents for the MoH and the wider health sector in the next 3-5 years.

The project team consists of Professor Felix A. Asante, Dr. Ama P. Fenny and Dr. Alhassan Anamzoya (of the Department of Sociology). The project total sum is GHS 825,000 and is funded by DFID / Ministry of Health. The operational period of the project is from January 2015 to November 2015.

Quantitative Baseline and Follow-Up Surveys for the Impact Evaluation of the LEAP 1000

Introduction

UNICEF Ghana contracted ISSER to conduct a quantitative baseline and follow-up surveys to collect data for the impact evaluation of the LEAP1000 initiative in Ghana. LEAP1000 is a social cash transfer program targeted at pregnant women and mothers of children under 1 year. LEAP1000 is a collaborative initiative between the Ministry of Gender, Children and Social Protection (MoGCSP), UNICEF-Ghana and USAID who have entered into an agreement to extend the existing LEAP programme, intended to target a specific sub-group of extremely poor households that are excluded from the current LEAP targeting approach. This is conceived against the backdrop of evidence that shows that almost all stunting takes place before a child's second birthday - a period commonly referred to as the first 1000 days (from conception to 24 months) - and anchored on the proven impacts that a social protection intervention may have on poverty and malnutrition in a child's very early years. LEAP1000 is being piloted in ten districts in Northern Ghana (three districts in Upper East region and seven districts in Northern region) and aims to target 6,000 households with pregnant women and infants. The districts have been selected based on USAID's Strengthening Partnerships, Results and Innovations in Nutrition Globally (SPRING) Initiative based on the criteria of the proportion of the highest populations of poor people in Ghana that also have a high incidence of poor nutrition.

Communities within the ten districts are targeted based on existing poverty rankings established at district level.



Poverty rankings of communities are based on the criteria and knowledge of the district assembly (District Social Welfare Officers, District Health Officials, and District Chief Executives). However, priority is given to the poorest communities which are not already covered by LEAP (i.e. non-LEAP). If the allocated number of households per district cannot be reached by targeting non-LEAP communities only, the programme will also target non-LEAP households in the poorest LEAP communities.



Enumerator at work

The project contract sum for the Baseline and Endline surveys is USD 454,932.43. The project team is led by Dr. Isaac Osei-Akoto (Senior Research Fellow and Head of Statistics and Survey Division, ISSER). Dr. Robert Darko Osei (Senior Research Fellow, ISSER) and Dr. Clement Adamba (Research Fellow, School of Education and Leadership) are co-Principal Investigators.

Compression and Control: Governing Resources, Quality, and Commodity Chains in Ghana's Shea Sector

This project is the result of previous studies on the value chain of shea, mango and cashew in the Northern Region of Ghana. The findings show that the shea nut commodity chain, induced by global market pressure - is undergoing the largest changes. It has become clear that it is necessary

to focus on one particular crop, namely shea, in order to fully understand the important dynamics that unfold in global markets between transnational companies and local producers.

The project highlights three potential areas of research interest: Firstly, an improved understanding of how formal and informal land tenure system interact and more importantly how informal land tenure arrangements in rural societies permit or not permit equal resource access. Secondly, a closer look into product quality in order to understand how local women are enduring the fast technological changes. Finally, a deeper understanding of whether the women have been able to engage with the new dynamics in the value chain and taken advantage of the opportunities in premium prices.

The project is being undertaken by ISSER in collaboration with the Centre for Research Development (ZEF) Bonn, Germany with funding from the Volkswagen Foundation. The project is expected to be completed by August 2018. It is being led by Dr. Martha A. Awo of ISSER in collaboration with other team members: Professor Niels Folds (Copenhagen University, Denmark), Dr. Wolfram Laube (Centre for Research Development (ZEF) Bonn, Germany) and Dr. William Fonta (WASCAL, Burkina Faso).



Dr. Martha A. Awo



Events

ISSER/IFPRI Roundtable Discussion on Youth, Employment and Agriculture

The Institute of Statistical Social and Economic Research (ISSER) in collaboration with the International Food Policy Research Institute (IFPRI) held a roundtable discussion on the theme 'Youth, Employment and Agriculture', on 22nd January, 2015 at the ISSER conference centre.

The roundtable convened experts including academics, researchers, policy makers and civil society to deliberate on how Ghana can realise the prospects of agriculture. There was special focus on how effectively the sector can

serve as a provider of employment to the youth and the conditions under which the youth can embrace agriculture as a livelihood and a profession.

The panel of experts was made up of Dr. William Baah-Boateng (Senior Lecturer, Economics Department, UG); Dr. Nana Akua Anyidoho (Senior Research Fellow, ISSER), Alhaji Adam Mahama (National Coordinator, Youth in Agriculture Programme); Dr. Paul Dorosh (Director, Development Strategy and Governance Division, IFPRI) and Dr. James Thurlow (Senior Research Fellow, IFPRI).

Discussion outcomes have been synthesized into a policy brief, available at: http://www.isser.edu.gh/files/Youth_Employment_Agriculture_Policy_Brief.pdf

LAUNCH OF PUBLICATIONS

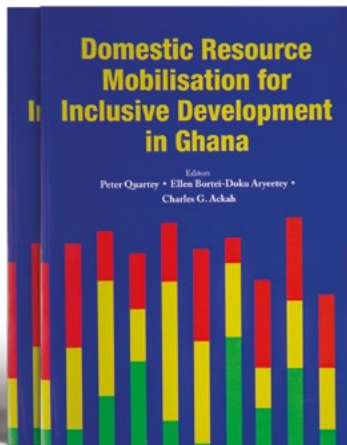


The *Ghana Social Development Outlook 2014 (GSDO, 2014)*, the second in the series by ISSER documents and analyses policy decisions and their impact on social development, it discusses pressing social issues and proffers useful recommendations. The GDSO is borne out of ISSER's commitment to support and influence social development with pertinent and evidence-based discourse, analysis and recommendations.

ISSER released five publications in the year under review. Four of these – namely *Ghana Social Development Outlook 2014 (the second in the series)*, *Managing Ghana's Oil Boom for Structural Transformation*; *Placing Health at the Centre of Development*; *Domestic Resource Mobilisation for Inclusive Development* – were launched on 10th April, 2015 by the Vice-Chancellor, Professor Ernest Aryeetey.

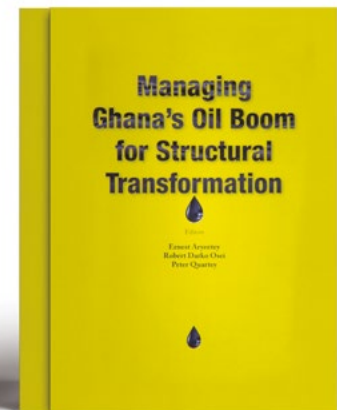
ISSER's flagship *State of the Ghanaian Economy Report, 2013 edition* was launched on 2nd October, 2014 by the Pro-Vice Chancellor (Research, Innovation and Development), Professor John Owusu Gyapong, at an event chaired by the Provost of the College of Humanities, Professor Samuel Agyei-Mensah.





Domestic Resource Mobilisation (DRM) explores the role of effective revenue mobilisation in development. The 14 chapter report is divided into two parts – Mobilising Local Finance for Development and Investment Climate for Domestic Resource Mobilisation – with each chapter dealing with a specific DRM issue in Ghana. These include the effects of the financial crisis on domestic resource mobilization; trends in domestic savings mobilisation; how to reach the un-banked through rural banks and micro credit; and domestic resource mobilisation through capital markets. Others are district assemblies financing of development projects; corporate social responsibility and development; macroeconomic performance and business confidence in Ghana; the role of the extractive industry; the role of identification in revenue mobilisation, natural resource and DRM; and gender mainstreaming and DRM. The various chapters point to ways in which DRM can be enhanced in the context of Ghana's development effort.

Publication of the book "*Managing Ghana's Oil Boom for Structural Transformation*" was inspired by Ghana's status as an emerging oil economy. It draws on lessons from other oil economies and shows how Ghana's oil find can be turned into an opportunity for development. The book has 10 chapters, each focusing on a specific issue on the oil industry. Key issues include: oil and structural transformation; the nature of the oil industry in Ghana; experiences in managing oil issues; the macroeconomic implication of oil booms and its lessons for Ghana; oil and Ghana: monetary management with capital inflows; oil discovery, real exchange rate appreciation and poverty in Ghana; oil and Ghana's development; some global lessons in governance and institution building; oil economy and the resource curse syndrome: can Ghana make a difference?; oil and the Western Region : implications for local and regional development.



Topics discussed in the 10 chapter book *Placing Health at the Centre of Development* include: the link between health and development; the Dangme West District Mutual Health Scheme (Dangme Hewaminamikpee); an audit of the quality of care of sick children in Ghana; assessing the role of education in the ownership of ITNs in Ghana; economic burden of HIV infection on households in Ghana; the impact of public health expenditure on health outcomes in Ghana.





SGER 2013 Roadshow

The SGER roadshow, a post launch event of ISSER's flagship State of the Ghanaian Economy Report was held in Cape Coast and Yamoransa district, of the Central region, on 27th and 28th November, 2014 respectively.

The roadshow aimed to present and discuss key aspects of the Report, and engage people on issues pertaining to the state of the economy, amongst others. It contributed to empowering participants with information they need to make informed decisions.

The maiden roadshow was held in 2013, in the Ashanti region. The 2014 roadshow, dubbed the ISSER/EGN roadshow, was a collaboration between ISSER and the EGN, and the University of Cape Coast (UCC).



A cross section of participant at the SGER roadshow workshop

Table 11: External Funds Received at the Institute

Project	Donor	Project Investigator	Amount
Agriculture and Sanitation Nexus	European Union	Professor Felix Asante	EUR 43,200
Economy of Ghana Network	The African Capacity Building Foundation (ACBF)	Dr Robert Darko Osei	USD 200,000
Evaluation of Maternal and New Born Referrals Project	University of North Carolina & Chapel Hill	Dr Isaac Osei-Akoto	USD 441,355
Gender and Enterprise Development in Africa: A Cross-Country Comparative Study	International Development Research Centre (IDRC)	Dr Charles Ackah	USD 730,613
Gendered Social Contexts of Adolescent HIV Risks Behaviors: Family, Peers and Community Influences in Ghana Wave 2	George Washington University School of Public Health)	Dr Elizabeth Asante	USD 199,905
Impact Evaluation of the Labour Intensive Public Works Component of the Ghana Social Opportunities	Ministry of Local Government and Rural Development	Dr Isaac Osei-Akoto, Dr Simon Bawakyillenou	USD 865,663
PhD Programme: Ghana/German Center of Excellence in Development Studies	DAAD/Center for Development Research, Uni. of Bonn, Germany	Director, ISSER	EUR 300,000
ISSER YALE Project	Economic Growth Centre University of Yale	Dr Robert Darko Osei / Dr Isaac Osei-Akoto	USD 935,100
Institutional Support	Think Tank Initiative (TTI), IDRC	Director, ISSER	CAD 600,000
Urban Crime Nexus	International Development Research Centre (IDRC)	Professor George Owusu, Professor Martin Oteng Ababio	CAD 497,000
Promoting Participatory & Evidence Based Agricultural Policy Processes in Africa	International Food Policy Research Institute (IFPRI)	Professor Felix A. Asante	USD 59,499.90
Youth Save Project	New American Foundation, Save the Children's Federation Inc., Center for Social Development Washington University St. Louis	Dr Isaac Osei-Akoto	USD 745,000



Project	Donor	Project Investigator	Amount
Measurement Learning and Evaluation Unit	Bill & Melinda Gates Foundation	Dr Robert Darko Osei / Dr. Isaac Osei-Akoto	USD 800,000
Supporting African Municipalities in Sustainable Energy Transitions (SAMSET)	EPSRC/DFID/DECC	Dr. Simon Bawakyillenou	GBP 190,727
ISSER-Social Impact Governance and Accountability Project	United States Agency for International Development (USAID)	Professor Peter Quartey, Professor George Owusu, Dr. Cynthia Addoquaye Tagoe	USD 483,749
Does Reinforcing Agro-dealers Network Improve Access and Use of Agriculture Inputs by farmers in Niger?	AGRA / International Initiative for Impact Evaluation (3ie)	Dr Robert Darko Osei	USD 486,895
The Impact of Reminders of Post-Harvest Aggregation Services and Timely Provision of price Information on Small Holder Farmers Market Power and incomes in Mali	AGRA / International Initiative for Impact Evaluation (3ie)	Dr Isaac Osei-Akoto	USD 456,292
Impact Evaluation of Inoculant Usage on farmer Yields and farm Income in Ghana	Alliance for Green Revolution in Africa (AGRA)	Dr Robert Osei / Dr Isaac Osei-Akoto	USD 452,995
Impact Evaluation – Community Action in Improved Farmer Saved Seed Yam in Ghana and Nigeria	Bill & Melinda Gates Foundation / Crops Research Institute	Professor Felix Asante	USD 600,000
Public Expenditure and Implementation Review (PEIR) of the Health Sector	Ministry of Health	Professor Felix Asante / Dr Ama Fenny	GHS 825,000
Quantitative Baseline and Follow-Up Surveys for the Impact Evaluation of the LEAP 1000	UNICEF, Ministry of Gender and Social Protection, DFID, World Bank and USAID	Dr Isaac Osei-Akoto, Dr Robert Darko Osei, Dr Clement Adamba	USD 454,932.43
Land Commercialization, Gendered Agrarian Transformation and the Right to Food	International and Development Studies, Switzerland	Professor Dzodzi Tsikata	USD 449,897
Northern Agriculture Survey - Endline	International Food Policy Research Institute (IFPRI)	Dr. Simon Bawakyillenou	USD125,000



INSTITUTE OF APPLIED SCIENCE AND TECHNOLOGY (IAST)

The Institute was established to transfer knowledge, technology and innovation to industry to enhance their development; this also meant that the research was to be industry inspired. Based on these considerations, five thematic areas were identified, which highlighted the areas of specialisation of the University research community as well as the activities of Ghanaian industry.

The Institute developed an immediate short term strategic plan. In this plan, IAST sought to establish and materially support the formation of multidisciplinary consortia supported by the University of Ghana Business School in the five thematic areas illustrated through the IAST PALM;



The IAST PALM

The Institute's Advisory Board and Management Committee have agreed to the establishment of incubators to facilitate the transfer of innovation and technology to industry. Upon the recommendation of the Advisory Board, Food Processing and Packaging was identified as the Institute's initial focus area. Accordingly, the first incubator will be a Food Processing and Packaging Incubator and a Technology Transfer and Enterprise Development Centre.



PROFESSOR SAMMY SACKEY

Director, Institute of Applied Science & Technology

Internal Engagements

In December 2014, the Institute embarked on a University wide faculty inclusion program to increase awareness of its activities. The engagements were extremely useful in enhancing the understanding of faculty on the importance of their role in achieving the mandate of the Institute.

Research and partnership development activities: Japan International Research Centre for Agricultural Sciences (JIRCAS), January 2014 to present.

The Institute is spearheading a project on generation of biofuel from agricultural "waste" within the country. The first phase of the project identified agricultural biomass with potential for biofuel production. The results below highlight data from roots and tubers.

**Table 12:** Data from roots and tubers with potential for biofuel production

Crop	Yam	Cocoyam	Plantain	Cassava
Annual Production (metric tons)	5,960,486	1,354,799	3,537,734	13,504,086
Waste generated (metric tons)	596,050+	135,500+	354,000+	1,350,000
Waste utilisation	Animal feed,	Animal feed,	Animal feed, potash	Animal feed, potash
Primary processing for food	Slices of fresh tuber, chips, flour, granulation	Slices of fresh tuber, chips, flour, granulation	Slices, mashed (ripe), seasoned paste for baking, granulation	Slices of fresh tuber, chips, flour, granulation
Processing technology for waste	Available	Available	Available	Available

Based on the report of the preliminary studies, further research was concentrated on Cassava waste. It recorded the highest production figures and accordingly waste generation (see Table 12). The second phase of the project is expected to commence at the end of 2015, and will focus on the development of conversion technology for biomass utilisation by communities that produce and process cassava.



Large quantities of peel and pulp juice are generated and discarded. Waste pulp may be used as feed for pigs. Limited demand - Pig farmers purchase only 20% of available pulp. Rest of pulp is discarded.

International Partnerships

In March 2015, with funding from the Bank of Ghana, the Institute visited Cornell University, United States, and Wageningen University and Research Centre, Netherlands. These are two leading institutions that are home to emerging innovations in food processing and packaging and have well-established systems that promote healthy industry, government and academia partnerships that the team understudied. The visit strengthened existing partnerships with the two institutions. At Cornell, the team visited a Dairy Production Pilot Plant, a Fruits and Vegetable

Incubator and a Technology Farm. The team visited industry targeted research facilities set up specifically to address post-harvest issues. In Wageningen, they experienced the operations of two relatively large agro logistics companies and the importance of proper storage, packaging and transportation for the fruits and vegetables value chain.

The First international Congress on Post-Harvest Loss Prevention

In furtherance of its goal to establish a food processing and packaging incubator, the Institute received funding from



the Food and Agricultural Organisation (FAO) to present a poster on Expanding Food Processing Capacity as a Tool for Ensuring Food Security and Safety to a high-level coalition of diverse professionals in Rome, Italy in October 2015.

Industry - Academia Engagement

The Institute has developed protocols for receiving and assessing industry and registering them in order to address their needs. These include confidentiality agreements between industrialists and their academic partners.

Establishment of Rural-Based Cassava Processing Industries: The “No Waste” Philosophy

In May 2015, the Institute together with its partners: Strengthening Capacity for Food Science and Technology Teaching; Learning and Research to add value to Indigenous Foods for Food Security in Africa and the Caribbean (FSTinAC); Department of Nutrition and Food Science; and the Food Research Institute (FRI), hosted a Cassava “No Waste” Roundtable Discussion. This event was necessitated by a survey conducted by the Institute and its internal partners in collaboration with the Japan International Research Centre for Agricultural Sciences (JIRCAS) of agricultural residues across Ghana. It was to determine the availability and potential utilisation of these residues.

The study focused on cassava “waste” because of its suitability for multiple uses. It was found that Ghana produced over 13 million metric tonnes of cassava annually and 15% to 20% of the total annual production in the form of peels was treated as “waste”. Unlike most of the other staple crops considered, all the parts of the cassava have some economic use.

Production is predominantly in the rural areas of eight out of the nation’s ten regions. As a highly perishable crop, it is important to process it close to where it is produced hence the need to set up industries in areas within the high cassava producing regions.

Based on the discussions at the roundtable, the Institute and its internal and external partners have prepared draft business and governance models that will guide the establishment of the proposed rural cassava processing industries. The Institute is currently a member of the Ghana Industrial Cassava Stakeholders Platform which it hosts and provides technical advice upon request.



Group picture of the participants of the Cassava “No Waste” Roundtable Discussion

Joint GhanaVeg- IAST Research and Development Forum

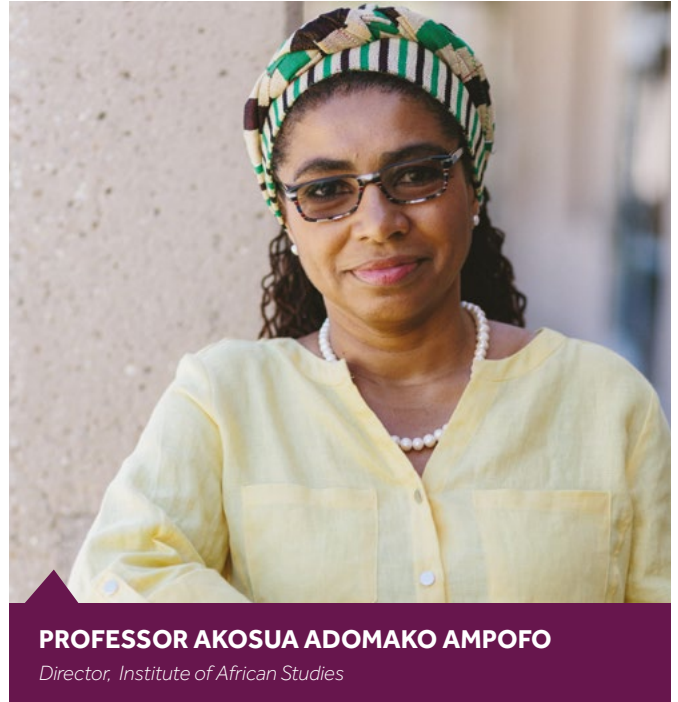
Demand driven research for a private sector-led growth in Ghana’s vegetable sector

The Institute and its partners from the West African Centre for Crop Improvement, (WACCI), Department of Crop Science, Department of Nutrition and Food Science, and the Soil and Irrigation Research Centre conducted a needs assessment for GhanaVeg, an initiative by the Dutch Government. The forum was attended by over 45 participants including vegetable producers, input supply companies, vegetable processors, exporters, marketers and UG researchers. The needs assessment identified and prioritised research needs of industry in: Breeding and production, Soil management, fertilisers and irrigation, Crop protection and post-harvest management of vegetables. Participants at the needs assessment reiterated the need for a central place where industry can freely engage with academia.



INSTITUTE OF AFRICAN STUDIES (IAS)

The 2014-15 academic year was another fruitful and exciting year of research and public intellectual work. We continue to valorize an African-centred epistemology that speaks to our lived experiences, and underscores the need to maintain our local and global relevance. This is grounded in the imperative to secure a home-grown and owned intellectual voice on the continent. While we cannot, in this short report, dilate on all our activities, we are thrilled that we consistently outdoor our work through our weekly Thursday seminars that are transmitted live on skype and then subsequently available for viewing on Youtube. We are also deeply committed to the digital humanities and archiving our stories and hence the strong attention we have paid to the building up of the Nketia Archives as a site for scholarship and advocacy. By this work, we continue to sustain, and expand our founding vision to study Africa in African-centred ways for our intellectual and psychic survival.



PROFESSOR AKOSUA ADOMAKO AMFO

Director, Institute of African Studies

Making African Academic Resources Accessible (MAARA): The Kwabena Nketia Archives



Participants on the MAARA Project

African Studies (IAS), holds rich collections of primary research materials that are important for learning, teaching and scholarship. They include the original recordings of Professor J.H. Kwabena Nketia and his colleagues when he was a research fellow at the Sociology Department and later the Institute of African studies. The records date to the early 1950's prior to Ghana's Independence. What makes the recordings unique is that they are the most systematic set of recordings from an African Ethnomusicologist, spanning forty years of field research.

These recordings document oral and performance traditions from around the country at a very distinctive period.. The oldest materials represent traditions and practices that were passed down orally for generations. A few examples of notable contents that can be found in this collection are: Numerous examples of Ansansesom, Mmoguo, Odurugya music, Fɔntɔmfɔm music, rare

The J. H. Kwabena Nketia Archives of the Institute of



recordings from Konkomba, Mamprusi, Frafra, Dagarti and Kasena tribes; funeral dirges, initiation rites music and rituals, popular music etc. It is important to note that these art forms bear little resemblance today to the earlier period when the recordings were made.

Making African Academic Resources Accessible (MAARA) project is led by Professor Mona Jimenez (NYU) and Judith Opoku-Boateng (IAS Archivist). It is a collaboration between the Institute of African Studies and New York University's Moving Image Archiving and Preservation (MIAP) Audiovisual Preservation Exchange (APEX) program. The goals of this initiative are to:

- Build capacity for archival quality digitisation at the J. H. Kwabena Nketia Archives, to support the transfer of audio tapes dating back to the early 1950s
- Create broad access and ensure digital preservation of the newly created digital assets through collaboration with the University of Ghana Computing Systems (UGCS)
- Promote Ghana's rich sound heritage by facilitating new users of these materials for teaching, learning,

scholarship and production.

The project also represents the final stage in the creation of a model digital repository for audiovisual materials.

The project is being funded by Institute of African Studies, Professor Esi Sutherland Addy's story-telling project, NYU Department of Cinema Studies, NYU Global Research Initiatives Program of the Office of the Provost, NYU Diversity Initiatives Program of the Office of the Provost, and Jim Lindner Grant for Cultural Preservation.

Three IAS Faculty have made the Institute proud

Dr. Deborah Atobrah has been selected as a 2015 Takemi Fellow at the Harvard School of Public Health.

Professor Esi Sutherland-Addy has been appointed by the Secretary General of the United Nations to the board of The Voluntary Fund for Technical Cooperation in the Field of Human Rights (VFTC).

Professor Akosua Adomako Ampofo has been invited to present this year's Distinguished African Studies Review lecture at the Annual Meetings of the African Studies Association.

INSTITUTE OF ENVIRONMENT AND SANITATION STUDIES (IESS)

The Institute for Environment and Sanitation Studies (IESS) (made up of an amalgam of the erstwhile Volta Basin Research Project, the Graduate Environmental Science Programme and the Ecological Laboratory) has moved from strength to strength in research, collaborative networks and the use of research to impact policy. The research areas of IESS covers global environmental change, mining energy and the environment; coasts, landscapes and watersheds; human and ecosystem health linkages; sanitation, waste management and recycling; ecosystem management, goods and services; biosafety and the environment; knowledge management and the knowledge economy as well as earth systems governance and international environmental conventions.



PROFESSOR CHRIS GORDON

Director, Institute of Environment & Sanitation Studies



IESS runs the Environmental Science Programme which has 18 PhD and 26 MPhil, students in total. Two new graduate programmes have been developed by staff in the areas of Sustainability Science and Environmental Sanitation, and with these new programmes, IESS expects to scale up and scale out its contribution to the University of Ghana's aspiration to become a research university.

Adaptation at Scale in Semi-Arid Regions (ASSAR) project

IESS coordinating team: Professor Chris Gordon, Dr. Elaine T. Lawson and Dr. Adelina M. Mensah



From Left; Dr. Adelina M. Mensah & Dr. Elaine T. Lawson

Background

The Adaptation at Scale in Semi-Arid Regions (ASSAR) project is a five-year study (2014-2018) examining the drivers of vulnerability, and the barriers and enablers of climate adaptation to help in the development of robust adaptation strategies for semi-arid areas in four regions (eight countries): West Africa (Ghana and Mali), East Africa (Kenya, Ethiopia, Uganda), Southern Africa (Botswana and Namibia) and South Asia (India). The project has four research themes: (i) governance, (ii) knowledge systems, (iii) ecosystem services, and (iv) social differentiation, with gender as a cross cutting theme. The research is carried out under the Collaborative Adaptation Research

Initiative in Africa and Asia (CARIAA), with financial support from the UK Government's Department for International Development (DfID) and the International Development Research Centre (IDRC), Canada. Ghana is part of the West Africa consortium led by Jon Padgham from global change SysTem for Analysis, Research & Training (START). All IESS Research Fellows contribute their specific expertise to the Ghana component of the project, with coordination by Professor Chris Gordon (country lead), Dr. Elaine T. Lawson and Dr. Adelina M. Mensah (co-leads). In addition, are technical officers: Mr. Ahmed Abubakari in the first phase of the project, and currently, Mr. Prince Anseh and Ms. Rahinatu Sidiki Alare.

The project supported two PhD students and four MPhil students from the Environmental Science Programme, Climate Change and Sustainable Development and Agricultural Economics and Agribusiness.



An adaptation strategy: stone bunds used to retain water on land in Lawra, Upper West Region



Interaction with national adaptation experts, Accra



REGIONAL INSTITUTE FOR POPULATION STUDIES (RIPS)

In the year under review the Regional Institute for Population Studies (RIPS) continued to expand the scope of its research activities in three areas: (1) chronic non-communicable diseases; (2) climate change; and (3) the gendered contexts of sexuality and reproductive health. A fourth area of research, on school-age health, was developed by early career RIPS faculty with seed funding from the Hewlett Foundation. In 2010, RIPS established a research site in three urban poor communities in Accra – James Town, Ussher Town and Agbobloshie. All major institutional research studies have been located in these sites. The principal objective underlying these research activities is to link research findings to community interventions and policy that enhance the quality of life of our research communities and ensure broader developmental benefits over time. RIPS has consequently fostered collaborative partnerships with community members, community leaders and policy and political actors to ensure effective translation of research into practice.

Major Research Activities at RIPS during the 2014/15 Academic Year

Chronic non-communicable disease (NCD) projects

Since 2011 RIPS has developed a programme of research and training on Ghana's chronic non-communicable disease (NCD) burden with funding of approximately USD 500,000 from the European Union, New York University College of Global Public Health, and Duke University, and research collaborators from UG (Noguchi Memorial Institute for Medical Research, School of Pharmacy), Kwame Nkrumah University of Science and Technology, London School of Hygiene and Tropical Medicine, New York University and University of Amsterdam.



PROFESSOR SAMUEL CODJOE

Director, Regional Institute for Population Studies

Conditions of focus have been diabetes, cardiovascular disease and mental illness and their risk factors and empirical research has examined the prevalence of these conditions, the lived experience of these conditions and the feasibility of developing practical interventions to improve community knowledge and quality of care and social support. Graduate studentships have been created from projects to support the successful completion of three MPhil degrees and 1 PhD degree. In the year under review, the RIPS NCD team engaged in three projects. These projects supported 3 PhD studentships and provided interdisciplinary training in community-based NCD interventions for 6 Population Studies PhD students, 4 Psychology MPhil students and 2 Social Policy MA students.

The RIPS NCD Programme of Work is led by Professor Ama de-Graft Aikins, with major collaborators including Professor Francis Doodoo (RIPS), Professor Kwadwo Koram (NMIMR), Professor Charles Agyemang (University of Amsterdam) and Professor Gbenga Ogedegbe (New York University).



Professor Ama de-Graft Aikins

Type 2 diabetes and obesity among sub-Saharan African native and migrant populations: dissection of environment and endogenous predisposition

Sub-Saharan Africa origin populations in Europe have increased substantially over the last few decades. Risk of obesity and Type 2 diabetes (T2D) is higher in these populations than in European host populations. Similarly, the prevalence rates of T2D and obesity have increased in many sub-Saharan African (SSA) countries including Ghana. In 2012, European and African partners initiated the Risk of Obesity and Diabetes in African Migrants (RODAM) project, with funding of EUR 2,992,200 from the European Commission, to assess the burden of obesity and diabetes and to unravel the potential factors contributing to the rising levels of both conditions among Ghanaian migrants in Europe and their compatriots in Ghana.

Collaborating Institutions, led by the University of Amsterdam, included University of Ghana (RIPS); Kwame Nkrumah University of Science and Technology (Kumasi Centre for Collaborative Research, KCCR); London School of Hygiene and Tropical Medicine; Charité – University

Medicine, Berlin; German Institute of Human Nutrition Potsdam-Rehbruecke (DIfE); Source BioScience, UK; and the International Diabetes Federation, Africa Region. The RODAM study had 3 aims: (1) to study the complex interplay between environment (e.g lifestyle), healthcare, biochemical and (epi) genetic factors, and their relative contributions to the high prevalence of obesity and type 2 diabetes; (2) to identify specific risk factors within these broad categories to guide interventions programmes and; (3) to provide basic knowledge for improving diagnosis and treatment.

Catastrophe and impoverishment from diabetes (CID): a case study on the economic burden of diabetes in Ghanaian households

This project constitutes part of a multi-country study (China, Ghana, Malaysia) to examine household burden of diabetes. The project is in progress. The first phase gathered community-based mixed method data in Ga Mashie Accra. The second phase will gather similar data from Korle-Bu Teaching Hospital. The Ghanaian data will inform a cross-country comparative report and scientific publications by the collaborative research group. The Project PI is Professor Ama de-Graft Aikins. Co-investigators of the project are Professor Shenglan Tang (Duke University) and Professor Pascale Allotey (Monash University, Malaysia). The postdoctoral researcher coordinating the project is Dr Henry Tagoe (RIPS). Funding of USD 15,000 was provided by the Duke University Global Health Institute.

Mental Health Needs and System Evaluation Research: A

US-Ghana Mental Health Partnership Initiative Research This project aims to examine child and adolescent mental health and the role of family care and functioning in Ghana. Data will be collected in selected schools in the Greater Accra Region, with a focus on students, teachers and parents. The project is at the preliminary stages, with research instruments being standardised and participating



schools and relevant research groups being identified. Principal Investigators of the project are Professor Ama de-Graft Aikins and Professor Ken-Yen Huang (NYU). The postdoctoral researcher coordinating the project is Dr Ernestina Dankyi (Centre for Social Policy Studies (CSPS)). The USD 30,000 project is funded by the NYU Global Institute of Public Health (GIPH) Affinity Challenge Grant.

Climate Change Projects

Climate Change Adaptation Research and Training Capacity for Development (CCARTCD) Project Ends at RIPS

The Climate Change Adaptation Research and Training Capacity for Development (CCARTCD) project was implemented from May 2011 to December 2014 with sponsorship of USD1,438,043.00 from the International Development Research Centre (IDRC) of Canada. The project in its attempt to fill existing knowledge gaps adopted a two-pronged research and capacity building agenda. On one hand it sought to improve the understanding of the impacts of climate change on food security, and health, using case studies from urban coastal communities in Accra, Ghana. The second main objective of the project focused on strengthening the capacity of a critical mass of next generation graduate students and young researchers from the region to adequately contribute to global discourses. The study was undertaken in three communities of Accra, namely, James Town, Ussher Town, and Agbogbloshie.



Former President Kufuor visits the Climate Change Resource Centre at RIPS

Green Economy Learning Assessment in Ghana, 2015

The United Nations Institute for Training and Research has contracted RIPS to implement a green economy learning assessment in Ghana, as part of a national project supported by the Partnership for Action on Green Economy (PAGE). This contract was based on institutional expertise on green issues in Ghana and also on the following pioneering publication on green Economy in Africa involving RIPS Scientists Professor Samuel Nii Ardey Codjoe and Dr Dela Dovie.

RIPS is responsible for carrying out five activities: (i) *Assess learning needs and priorities concerning green economy issues in key sectors* (ii) *Assess institutional capacities to provide learning services on green economy issues* (iii) *Draft a Green Economy Learning Assessment Report* (iv) *Support a one-day workshop to validate the findings and* (v) *Provide a narrative report about all activities implemented.*

THE DECCMA PROJECT

The DEltas, vulnerability and Climate Change: Migration and Adaptation (DECCMA) Project is a 4.75 years' project under the Collaborative Adaptation Research Initiative in Africa and Asia (CARIAA). The project aims to evaluate the effectiveness of adaptation options in deltas, assess migration as an adaptation in deltaic environments under a changing climate and deliver policy support to create the conditions for sustainable gender-sensitive adaptation. The Project is being undertaken by a consortium of institutions from United Kingdom, Bangladesh, India and Ghana namely the University of Southampton; Bangladesh University of Engineering and Technology; Jadavpur University and the Regional Institute for Population Studies, University of Ghana respectively. The deltas involved are the Ganges-Brahmaputra Delta (Bangladesh and India), Mahanadi Delta in India and the Volta Delta in Ghana. The 13.5 million Canadian dollar-Project, which began in February 2014, is being funded by the UK's Department for International Development (DFID) and the International Development



Research Centre (IDRC) of Canada. The main activities of the project over the past year include:

- The second consortium meeting held in India from January 13-16, 2015 which was attended by six members of the team from Ghana.
- The recently-held third consortium meeting organised by the Ghana Team at the University of Ghana from 24th – 28th July, 2015. This was attended by partners from UK, Europe, India and Bangladesh. The meeting took the form of a workshop during which the consortium members worked on fine-tuning and finalising the research methodology for the project, time with stakeholders in Ghana and a fieldtrip to one of the study districts, Keta Municipality.
- There has been extensive engagement with stakeholders at the district level to discuss the issues of climate change, migration and adaptation specific to each district and to identify the hotspots.

The Principal Investigator (PI) is **Professor Samuel Nii Ardey Codjoe** with co-PIs as **Dr. Kwasi Appeaning Addo** (Department of Marine and Fisheries Science) and **Dr. Cynthia Addoquaye Tagoe** (Research Fellow, ISSER).



DECCMA Consortium Members from UK, Europe, Bangladesh, India and Ghana at the recently-held Workshop in Accra (27th May, 2015)



The Rural-Urban Interface: Gender and Poverty in Ghana and Kenya, Statistics and Stories

This study is being conducted by an eleven-member working and collaboration group from University of Ghana, Columbia University, Barnard College, Princeton University and University of Nairobi. It seeks to extend collaboration and build intellectual networks across the continents and disciplines. Its general objective is to gather narratives (actual experiences of the migrants) and other forms of empirical knowledge about the experiences of migrants, with special attention to feminization of poverty among migrants in the rural-urban interface. It seeks to combine the narratives with statistics (combining qualitative knowledge with quantitative knowledge) to inform policy with attention on methodology and epistemology. The group is currently working with seed money, USD30, 000, from the Foundation for the Study of Differences in Human Society. Dr Delali Badasu, Senior Research Fellow at RIPS, is a member of the working group, representing RIPS and the Centre for Migration Studies (CMS), where she is Director.



Urban Schools Physical Activity Study

The Urban Schools Physical Activity Study (USPAS) is a RIPS initiative. It is a longitudinal survey studying the influence of physical activity on medium- and long-term health and educational outcomes of adolescents in two urban poor communities in Accra – James Town and Ussher Town. The study is driven by the need to understand how certain precursors of overweight and obesity impact both phenomena and to address increasing rates of overweight and obesity in children and adolescents. As physical inactivity is a strong predictor of obesity, the study aims to study the impact of increasing the frequency and consistency of time spent on physical activities. A related interest regards whether physical activity actually improves

educational outcomes.

The project is funded by a seed grant from the RIPS Hewlett Foundation Training Grant. The project officially launched on the 17th February 2014 in James Town. Stakeholders present included community leaders, the Ghana Education Service sub-metro office, heads of schools, and representatives of school Parent Teacher Associations.

Primary fieldwork commenced in December 2014 to collect data on baseline characteristics of respondents. The PE intervention started in January 2015 and was implemented by trained National Service personnel. The first of four planned annual follow-ups took place in July 2015. The project investigators are Dr. Pearl Kyei and Dr. Naa Dodua Dodoo, both lecturers at RIPS.

Table 13: List of Research Projects at RIPS

Project	Funding Agency	Project Investigator/s	Amount awarded (USD)
Type II diabetes and obesity among native and migrant Ghanaian populations; dissection of environment and endogenous predisposition (RODAM)	European Union	Professor Ama de-Graft Aikins	202,000
Gendered Social Context of Adolescent HIV Risk Behaviour (GSC PENN)	NIH	Professor Francis Dodoo/Dr. Naa Dodua Dodoo	207,025
African Adaptation Research Centre of Excellence (AARC)	IDRC, Canada	Professor Samuel Nii Ardey Codjoe	1,440,000
University of Ghana's Training programme for Population Science Scholars	William and Flora Hewlett Foundation	Professor Francis Dodoo/Dr. Naa Dodua Dodoo	850,000
Deltas Vulnerability Climate Change Migration and Adaptation (DECCMA)	IDRC and DFID	Professor Samuel Nii Ardey Codjoe/ Dr Kwesi Appeaning-Addo	1,025,360
Urban Schools Physical Activity Study	William and Flora Hewlett Foundation	Dr. Pearl Kyei/ Dr Naa Dodua Dodoo	74,740.65
Review of the 1994 National Population Policy and Action	National Population Council	Professor John Kwasi Anarfi	82,469
School Performance: The Role of Early Stage Learning Environments	International Growth Centre	Dr. Pearl Kyei	44,563
Catastrophe and Improvement from Diabetes: A Case Study on the Economic Burden of Type -2 Diabetes in Ghanaian Households	Duke University, USA	Professor Ama de-Graft Aikins	15,000
Mental Health Needs and System Evaluation Research: A US-Ghana Mental Health Partnership Initiative Research	New York University Global Institute of Public Health (GIPH) Affinity Challenge Grant	Professor Ama de-Graft Aikins	30,000



CENTRE FOR MIGRATION STUDIES

Research continues to be an important component of the academic work at the Centre for Migration Studies (CMS). Its core mandate of migration research has been sustained through collaboration with various institutions. Current research activities are innovative and relevant for development policy planning in Ghana and beyond.

A summary of the research grants for three major research projects undertaken in the 2014/2015 academic year are presented in Table 14 below. They fall under the *"Migrating out of Poverty"* Research Programme Consortium's seven-year (2010-2017) multi-partner research programme, funded by the UK's Department for International Development (DFID). The project focuses on the relationship between migration and poverty in six regions across Asia, Africa and Europe, and is coordinated at School of Global Studies at the University of Sussex, UK.



DR. DELALI BADASU

Director, Centre for Migration Studies

Table 14: Research Grants Received at the Centre

Title of the Project	Donor	Principal Investigator	Amount
Migration to Cities in Ghana: An analysis of the counterfactual	UK Department of International Development (DFID)	Joseph Kofi Teye	GBP 94,000
The Migration Industry in Ghana	UK Department of International Development (DFID)	Mariama Awumbila	GBP 42,000
Migration, Intra-Household Dynamics and Youth Aspirations in Ghana	UK Department of International Development (DFID)	Mariama Awumbila	GBP 49,000



Migration to Cities in Ghana: An analysis of the counterfactual

This research focuses on rural-urban linkages with the main objective of establishing whether or not (and by how much) migrants and their households have actually gained, in real income and welfare terms, from their migration.

The Migration to Cities is re-surveying the 1,412 households that were involved in the Quantitative study in 2013 for the purpose of identifying households with recent migrants, and also recent return migrants in the last two years. This will further help in comparing households who had experienced migration in the last two years (2013-2015) with those who had not. As a result, members of migrants' families left behind and migrants themselves at their destinations will be interviewed to construct both social and economic counterfactuals of migration into cities in Ghana.

This study will provide novel panel or series data and empirical assessment of the impact of rural-urban migration to cities on migrants' wellbeing. It will also provide data on the interconnections between rural and urban areas. The findings will be useful to both potential migrants and to policy-makers concerned with social conditions, social equity and sustainable development. In terms of contribution to migration research methodology, we aim to apply and compare the robustness of several approaches and models.

Research team members include Dr. Joseph Kofi Teye is Principal Investigator of the project. The project co-investigators are Professor Mariama Awumbila and Dr. Louis Boakye-Yiadom (of the Department of Economics)

The Migration Industry in Ghana

As migration is increasingly receiving attention on the global development agenda, the role of intermediaries, both formal and informal, (who may include informal social networks, recruitment agencies and their chains of sub agents), in facilitating, sustaining and sometimes driving these migration flows is increasingly gaining attention.





As a result, the need to understand the structure of the migration industry in Ghana in different contexts and for different groups of migrants, the services that they provide, the implications for migration costs and the policy reform that is needed to reduce costs so as to minimise the scope for exploitation and malpractice has become important. In Ghana, although there is paucity of knowledge about the migration industry, anecdotal data indicates a wide array of both formal and informal actors who provide services that may both facilitate and constrain migration. The few studies undertaken have focused on the industry that facilitates in particular irregular migration out of Ghana.

The research is an exploratory or scoping study that aims to identify the incidence, characteristics, functions, main actors and stakeholders of the migration industry in Ghana, and the extent to which recruitment agents are involved in the migration streams. It will focus on two sectors of the Ghanaian economy as case studies, the domestic work sector and the kayayei (head porters). Existing evidence suggests that these are the two sectors that attract an increasing flow of low and semi-skilled migrants particularly from the West African sub region as well as internal migrants from Ghana.

Members of the research team include Professor Mariama Awumbila (the Principal Investigator), Dr. Leander Kandilege and Dr. Mary Satrana.

Migration, Intra-Household Dynamics and Youth Aspirations in Ghana

This study examines whether migration is changing gendered power relations and roles within households and the relationship between migration and the households' long-term investment in human capital. The study also examines whether migration of adults and associated remittance use and investment in children can shape youth aspiration towards migration and work. It further seeks to empirically examine the gendered patterns of earning, remitting and remittance use and management among

households. The study adopts a sequential triangulation strategy, whereby both quantitative and qualitative data are used to answer the research questions. Quantitative data has been collected in five regions: Brong Ahafo, Northern, Upper West, Volta and Upper East.. The research will provide evidence based research on migration, intra-household dynamics and youth aspirations in Ghana for policy makers and NGOs.

Professor Mariama Awumbila is the Principal Investigator with Dr. Joseph Kofi Teye and Dr. Akosua Darkwah as co-investigators.



From Left; Mr. Collins Yeboah, Prof Mariama Awumbila, Dr Joseph Teye, Dr Mary Boatemaa Setrana and Dr Leander Kandilege

Rural-Urban Migration, Urbanisation and Food System Change in the face of Climate Change

This is a thematic area on the project "Co-producing knowledge on food systems for development in Africa" under the Africa Climate Change Adaptation Initiative (ACCAI) Partnership grant received from the Open Society Foundation (OSF). Climate change-related movements have been recognised and found to be important adaptations that need to be researched within the broader context of migration and urbanization. Moreover food system changes result from climate change and are areas that require research evidence for appropriate policy



response. This research seeks to examine rural-urban migration and urbanisation and changes in food systems in Ghana's ecological zones that are associated with climate change in the various zones. The members of the research team are drawn from a number of disciplines in the sciences and the humanities and have sponsorship for their research and for their MPhil and PhD students.

The leader of the research team is **Dr. Delali Badasu** (Director of CMS and Senior Research Fellow, RIPS).

Migration Data Guide for Ghana

A partnership between the European Union and Africa has been implementing a number of initiatives to support public policy formulation on the contribution of migration to development, through the use of migration data. The main objective of the use of the migration data at the national level is to contribute to policy coherence on migration and harmonisation of migration policies. The production of migration data guide is being supported under the

Euro-African Dialogue on Migration and Development, referred to as the Rabat Process; and the members of the EU, ECOWAS and countries in Europe and Latin America and Asia. The Rabat Process has a number of objectives, including the production of evidence-based migration data. The production of the migration data guide (Support Project) is financed by the EU and elaborated by a consortium led by the International Centre for Migration Policy Development (ICMPD) and the international Latin American Foundation for Public Administrations and Public Policies (FIIAPP). The production of the guide depended on secondary sources of data mainly and was supplemented by primary data from ministries, departments and agencies (MDAs) to identify sources of migration data, producers and users. It aims to encourage knowledge sharing and coordination among stakeholders, thereby reinforcing dialogue among them. The production of Ghana's guide was supported by EUR 5,500 from the EU.

Dr. Delali Badasu represented the Centre for Migration Studies as the expert for the production of Ghana's Migration Data Guide.

CENTRE FOR SOCIAL POLICY STUDIES (CSPS)

The Centre for Social Policy Studies (CSPS) completed two community-based health projects and embarked on three new projects in the 2014/2015 academic year. The centre also engaged in its additional core activities of policy research dissemination and capacity building for social protection and related practice. Funding for the Centre's projects was obtained from the FAO, Grand Challenges Canada, New York University (NYU) Global Public Health Challenge and UG's Office of Research, Innovation and Development. Research collaborators and partners included New York University, the Partnership for African Social and Governance Research (PASGR) and FAO.



Ms. Abena Oduro

Director, Centre for Social Policy Studies



RESEARCH PROJECTS

Changes in the Living Conditions and Well-Being of Older Persons in Ghana, 1991 – 2013

The Centre received a research grant of GHS7,000 from the Office of Research, Innovation and Development (ORID) to conduct a study on Changes in the Living Conditions and Well-Being of Older Persons in Ghana, 1991 – 2013. The study is part of a longstanding effort at the Centre to provide empirical evidence on the conditions of the aged and changes over time in their living conditions, and to understand and inform policy on the general wellbeing of the elderly in Ghana. The one year study began in March, 2015 and will end in February, 2016. The main objective of the study is to improve the availability of data and/or documentation on the changing living conditions of older persons. The project aims to track these conditions over a period of two decades through empirical analysis of livelihoods while seeking to understand the issues of economic exclusion that affect the older persons in Ghana. The research team expects that the project will form the basis for broader study, which will lead to a national survey on older persons and a book on the survival of older persons in Ghana.

The members of the research team comprise **Dr. George Domfe (PI)** and co-investigators **Professor Ellen Bortei-Doku Aryeetey** and **Mr. Ralph Nii Armah Armah**.

Implementation of a Gender in Agricultural Policy (GAPo) Tool in Ghana

FAO commissioned CSPS to implement the Gender in Agricultural Policy (GAPo) tool. The GAPo is intended to enable a government and its partners undertake three activities:

- 1) to assess the extent to which agricultural policies and programmes take cognizance of country-specific gender issues
- 2) to ascertain the extent to which the various policies

cohere in a holistic manner.

3) to identify ongoing policy processes that can serve as an entry point for the adoption of a framework that seeks to ensure gender equitable policy development and implementation.

The CSPS team was commissioned to undertake two tasks in relation to examining the gendered context of agricultural policy in Ghana:

1. a comprehensive assessment of existing agricultural policies programmes and strategies from a gender perspective, using the Gender in Agriculture Policy Assessment Tool (GAPo) to identify substantive gaps, policy incoherencies and areas of improvement
2. a comprehensive mapping and analysis of relevant stakeholders representing key actors from the government, private sector, academia, civil society and producer organizations, for each agriculture-related policy thematic area.

Main activities included a comprehensive desk review of agricultural policies, programmes and plans and stakeholder interviews. An inception report has been produced for the FAO. Phase 2 of the project involves a validation workshop with agricultural policy stakeholders to inform a final report and policy briefs on the feasibility of implementing the GAPo tool in Ghana. The project, which began in November 2014 and is expected to end in November 2015, is led by Professor Ama de-Graft Aikins, with CSPS team members including Ralph Armah, Dr George Domfe, Dr Ernestina Dankyi, Dr Antoinette Tsiboe-Darko and Professor Ellen Bortei-Doku Aryeetey, and gender expert Dr. Akosua Darkwah (Department of Sociology and CEGENSA).

Scaling Services through a proven model for mental health and development in Ghana

This project, funded by Grand Challenges, Canada, focused on improving mental healthcare in Northern Region. The centre is collaborating with Basic Needs (BN)-Ghana,



the leading mental health NGO in the country, to explore the feasibility of scaling up BN-Ghana’s rights-based and livelihood empowerment model of ‘mental health and development’ beyond its current recipient communities. The project, which began in July 2014 and is expected to end in November 2015, is led by Professor Ama de-Graft Aikins with a research team drawn from BN-Ghana, CSPS and RIPS.

Developing a community-based cardiovascular disease care in Ghana: a therapeutic lifestyle approach to hypertension

This ORID funded project, aims to explore the feasibility of developing a community-based approach to hypertension control in Ga Mashie, Accra. The project builds on two recently completed projects in the research community: (1) Task-shifting program for cardiovascular risk assessment

and development in Ghana; and (2) Assessing the Dietary Patterns and Health Status of Ghanaians in Ghana and New York City. The project aims to develop a therapeutic lifestyle approach to prevent avoidable complications in individuals living with hypertension and related cardiovascular conditions. During the year under review, baseline data – including anthropometric, biomarkers, and scales relating to quality of life and medicine use – was gathered. The next phase of the study will focus on a six-month participatory education intervention and follow-up outcome measures. The two-year project is expected to end in June 2016 and is led by Professor Ama de-Graft Aikins with co-investigators Professor Kwadwo Koram (Director, NMIMR) and Dr Barima Afranie (School of Pharmacy).

WORKSHOPS AND TRAINING EVENTS

- One day Symposium on Ageing in Ghana.
- CSPS Capacity- Building Courses for Social Policy Analysts and Development Practitioners Partnership for African Social and Governance Research (PASGR) - Capacity Building Workshop

Table X. Summary of Research Grants Awarded

Table 15: Summary of Research Grants awarded to the centre

Project Title	Donor	Principal Investigator	Amount
Implementation of a Gender in Agricultural Policy Tool in Ghana	FAO	Professor Ama de-Graft Aikins	USD 90,000.00
Scaling Services through a proven model for mental health in Ghana	Grand Challenges Canada	Professor Ama de-Graft Aikins	USD101,028.50
Task shifting programme for cardiovascular risk assessment and development in Ghana	NYU	Professor Ama de-Graft Aikins and Professor Gbenga Ogedegbe (NYU)	USD10,500.00
Assessing the Dietary Patterns and Health Status of Ghanaians in Ghana and New York City	NYU, Global Public Health Challenge	Kristie Lancaster (NYU) and Professor Ama de-Graft Aikins	USD10,325.00



LEGON CENTRE FOR INTERNATIONAL AFFAIRS AND DIPLOMACY (LECIAD)

Human Security and Terrorism

Dr. Attuquayefio continues to explore human security and terrorism-related issues. The focus on the former is to advocate for the consideration of country-specific pedagogies for studying human security in Africa. Key research undertaken during the period under review include the human security dimensions of Narcotics Trafficking in Sub-Saharan Africa and the use of Unmanned Area vehicles (Drones) in countering terrorism in Africa. Outcome of these studies have been published in Maher, M., & Ondrescksh, R (eds) *Panorama of Global Security Environment* (Bratislava: Centre for European and North Atlantic Affairs, 2015) and the *Journal of Terrorism Research*. Following the upsurge in violent extremism around the world, Drs. Attuquayefio and Darkwa have also initiated a project on Countering Violent Extremism in West Africa.



Dr. Philip Attuquayefio

The components of the project include a study on the challenges of violent extremism in West Africa; a perception survey on the threat of terrorism; the creation of a platform for action against violent extremism; and a process for developing relationships between counter-terrorism researchers and practitioners and methodologies for evidence-based research on counterterrorism. The first



PROFESSOR HENRIETTA J.A.N MENSA-BONSU

Director, LECIAD

two stages of the project involving consultations with key researchers in terrorism and counterterrorism and the piloting of the perception survey are underway. Darkwa, Attuquayefio and Amuzu have also initiated a project towards a sustainable management of the conflict between Fulani pastoralist and farming communities in Ghana. This project seeks to interrogate the Fulani issues from multiple perspectives while engaging specifically with stakeholders from the Agogo-Afram Plains area. As stated in its mandate, LECIAD is also a training institution specializing in needs-based training modules for the Ministry of Foreign Affairs, the Ghana Armed Forces and Allied institutions as well as the African Union, ECOWAS and other regional organisations.

In its efforts to bridge the identified gap between the theory of human security and practice, Drs Darkwa and Attuquayefio have partnered with a Civil Society Organisation to develop modules that mainstream Human Security into Peace building as well as Natural Resource Management training. They have also trained twenty-five (25) peace building practitioners on how to mainstream human security into natural resource management. The African Union and other regional bodies continue to rely on expertise from the Centre. Following a specific request from the continental body, Dr. Darkwa has developed a Manual for the Training of Senior Mission Leaders for African Union Peace Operations.



Security and Justice in Cote d'Ivoire: A Study of Women's Responses to Gender-Based Violence



Dr. Peace A. Medie

Dr. Peace A. Medie is conducting a study of women's access to justice in Cote d'Ivoire. Her project examines the justice-seeking behaviour of survivors of sexual violence and of intimate partner violence. She is studying the factors that lead some women to report their abuse to the police and other authorities and those that prevent other women from reporting.

To understand this variation, she is interviewing survivors of rape and of intimate partner violence as well as members of staff of nongovernmental organisations and government agencies who provide medical and psychosocial care to survivors of these forms of violence. This project is funded by an Individual Research Grant from the African Peace Building Network of the Social Science Research Council.

How displaced populations contribute to the related processes of "resolution"

Dr Amanda Coffie is collaborating with 15 researchers from North America, and Europe on a project focusing on how displaced populations contribute to "resolution," especially the processes of finding durable solutions and peace building in their countries of origin. The project presents opportunities to critically revisit concepts such as durable solutions, and to make significant theoretical and methodological contributions to forced migration studies by probing the dichotomies and links between different levels of analysis and action.

The project is funded by the Social Sciences and Humanities Research Council (SSHRC) of Canada and led by Dr Megan Bradley of McGill University, Montreal and Dr James Milner of Carleton University, Ottawa.

A major outcome of the project is a book to be edited by



Dr Amanda Coffie

the lead researchers. Dr Amanda Coffie is contributing a chapter on Liberian refugees renegotiating the structures of repatriation. Her case study offers broader lessons for the inclusion of refugees and the individual level of analysis in the study of refugees and peace building.



ECOWAS-Spain Migration Project (ESMP)

In a bid to contribute to the ECOWAS vision of intra-regional migration, LECIAD established the ECOWAS-Spain Migration Project (ESMP). The project commenced on September 15th, 2014 with a budget of EUR 92,856. The project is in three parts: Training for Migration Management Officials, Training for Editors of Media Houses and an Information Web Portal. Working with Ghana Journalists Association (GJA), the goal of the project is to provide specialised training for personnel of migration management bodies and security services in charge of protecting vulnerable populations. It also seeks to popularise the relevant ECOWAS and international provisions for the protection of vulnerable populations such as refugees and

displaced persons.

The specific objective of the training is to equip the target groups with knowledge on the relevant regional and international legal frameworks for the protection of migrants and to provide, through a web portal, a one-stop public information system for the dissemination of information on labour opportunities as well as the migration policies of all ECOWAS Member States. Links to the migration policies of the European Union Countries as well as other international bodies (e.g. AU, UN) will also be available on the web portal.

Training of personnel of migration management institutions has been completed successfully. The next major activities of the project are pilot training of editors of media houses and completion of the web portal.

THE CENTRE FOR TROPICAL CLINICAL PHARMACOLOGY AND THERAPEUTICS (CTCPT)

The Centre for Tropical Clinical Pharmacology and Therapeutics is a clinical research centre at the School of Medicine and Dentistry. The Centre conducts multi-disciplinary research and training on tropical diseases with special emphasis on drug problems peculiar to developing countries.

The research activities at the Centre in the 2014/2015 academic year focused on continuation of ongoing research in the area(s) of malaria diagnostics and chemotherapy, pharmacogenetics of selected anticoagulants and anti-retrovirals, pharmacovigilance of selected drugs of public health significance, and pharmacokinetic/pharmacodynamic studies of drugs used in serious newborn infections.

The drug discovery programme of the Centre was also given a boost by the award of a CAPREx post-doctoral fellowship to a faculty member, Dr Neils Benjamin Quashie,



PROFESSOR GEORGE OBENG ADJEI

Director, Centre for Tropical Clinical Pharmacology & Therapeutics

a Senior Research Fellow of the Centre. The award, tenable at the University of Cambridge, is to enable him acquire expertise in a novel CRISPR-Cas9 genome editing technique, which is useful for identifying anti-malarial drug targets.



Malaria transmission, diagnostics and chemotherapy research

In collaboration with research partners from NMIMR and funded by the National Malaria Control Programme (NMCP), information is being gathered on malaria parasite positivity rates across the country to empirically assess the progress of interventions towards reduction in disease prevalence. The studies are being conducted by Dr Neils Quashie.

Monitoring efficacy of anti-malarial drugs for the treatment of uncomplicated malaria in Ghana

Using in vivo, in vitro and molecular methods, resistance to the first line drugs currently in use in Ghana is being monitored in selected sentinel sites.

Label Free Particle Sorting (LAPASO) project

In collaboration with partners from institutions in USA, Europe and Africa, devices using the deterministic lateral displacement (DLD) arrays technology are being developed to enhance early diagnosis of malaria.

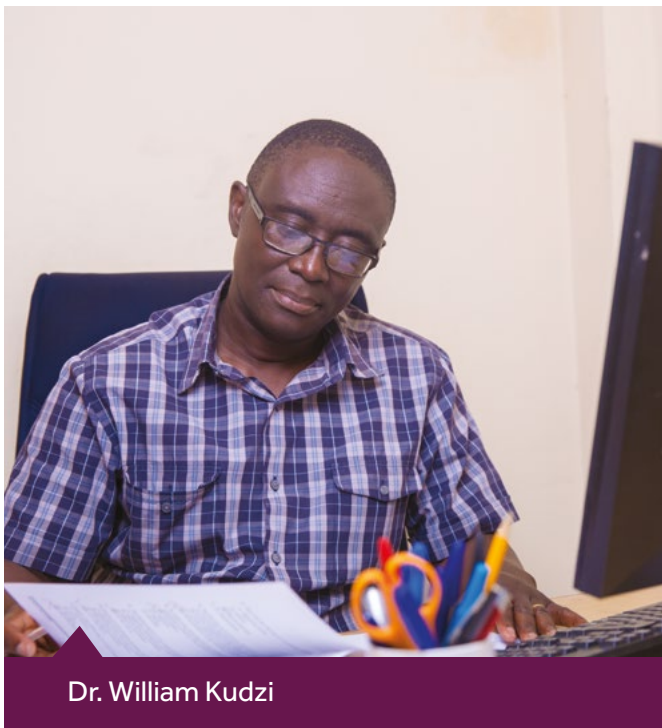
Putative protective effects of sulphamethoxazole trimethoprim prophylaxis on malaria incidence in HIV-infected children.

This study aims to evaluating mechanisms underlying the putative protective effects of cotrimoxazol chemoprophylaxis on malaria in HIV infected children, funded from a grant from the UG-Brown University Academic Partnership for AIDS programme. The Principal Investigator is Professor Obeng Adjei.

Pharmacogenetics-related research

Contribution of patient-specific and genetic risk factors to dose requirements of patients on either high or low warfarin maintenance dose in Korle-Bu Teaching Hospital

Warfarin is a widely prescribed anticoagulant with narrow therapeutic window. It also displays large individual variability in dose requirements. This study determined both non-genetic and genetic factors that may be associated with this inter-subject variability. The study is being conducted by Dr. William Kudzi in collaboration with faculty from the Departments of Medical Biochemistry, Haematology and staff from the National Cardiothoracic Centre.



Dr. William Kudzi

Risk factors of Nevirapine hypersensitivity reaction among HIV-1 infected patients at Korle-Bu Teaching Hospital

Nevirapine is a frontline medication for HIV in Ghana but it leads to hypersensitivity reaction in some patients.

This study examines the clinical risk factors and specific genotypic alleles that are associated with Nevirapine hypersensitivity reaction. This study was supported by University of Ghana Research Fund through ORID and is being conducted by Dr. William Kudzi in collaboration with faculty from the Departments of Medical Biochemistry, Haematology and Medicine and Therapeutics. Nevirapine hypersensitivity reaction in a patient that disappeared after switch to efavirenz.



Nevirapine hypersensitivity reaction in a patient that disappeared after switch to efavirenz

Neonatal therapeutics

Amikacin with or without aminophylline for suspected sepsis in newborns at the Korle-Bu Teaching Hospital: a pharmacokinetic-pharmacodynamic study. This is a PhD study which is funded by a Building Stronger Universities (BSU-I) partnership and being done in collaboration with faculty from Department of Child Health, SMD, and University of Copenhagen, Denmark. Professor Obeng Adjei is the primary supervisor.

The study aims to evaluate the efficacy and safety of current amikacin dosing regimens and potential interactions with aminophylline in newborns with suspected sepsis and characterise the pharmacokinetics and pharmacodynamics of amikacin-aminophylline co-administration in newborns.



Collection of clinical samples at the Neonatal Intensive Care Unit, KorleBu Teaching Hospital



HIV pharmacoepidemiology research

The following series of studies are being conducted by Edmund Nartey in collaboration with faculty from the Department of Medicine and Therapeutics and staff from the Pharmacy Department.



Mr. Edmund Nartey

Adverse events and adherence to HIV post-exposure prophylaxis

There is strong evidence that HIV post-exposure prophylaxis (PEP) with anti-retroviral drugs decreases the risk of HIV infection. In the era of "highly active anti-retroviral therapy", non-adherence to treatment has been closely linked to the occurrence of adverse events in HIV patients. This study investigates the incidence of adverse events and measured the level of adherence to HIV PEP in occupationally-exposed healthcare workers/students at the Korle-Bu Teaching Hospital.

Therapy switch in HIV-positive patients

Patients started on anti-retroviral therapy (ART) generally remain on medications indefinitely. A switch in the anti-retroviral regimen may become necessary because of possible acute or chronic toxicities, concomitant clinical conditions, development of virologic failure or the advent of adverse events (AEs). This study investigates the association between adverse events and regimen switches and also profiles the adverse events in a nested case control

study of HIV positive patients on anti-retroviral drugs at the Korle-Bu Teaching Hospital.

Tenofovir related nephrotoxicity in HIV-positive patients

Although initial cell culture and clinical trials supported the renal safety of tenofovir in the management of People Living with HIV/AIDS, its post market surveillance monitoring indicates potential risk of kidney injury. Following a policy shift in the use of stavudine to tenofovir in Ghana, almost all patients previously on stavudine were switched to tenofovir. However, results from studies on the association between tenofovir use and renal impairment have been at variance especially in black populations. This study evaluates the monitoring of renal toxicity in HIV-positive patients on tenofovir and determined possible association between nephrotoxicity and mortality at the Korle-Bu Teaching Hospital.

Gastroenterology-related research

Comparison of endoscopic based diagnosis with Helicobacter Urease Test for Helicobacter pylori infection:

Although endoscopy offers excellent visual assessment of the gastrointestinal mucosa, in many cases histological sampling is necessary to confirm that diagnosis. The study determined the feasibility of the using Helicobacter Urease (rapid urease) testing as a confirmatory test to endoscopic diagnosis, since it is faster and could expedite therapeutic decisions by the endoscopist before the patient leaves the clinic. The study is led by Dr. William Kudzi in collaboration with faculty from the Departments of Surgery (SMD).

Other Significant Related Research News

The Centre contributed data towards multi-disciplinary studies by the Worldwide Antimalarial Resistance Network (WWARN): One of such studies the AL dose impact study, included clinical data obtained from more than



14,000 patients from 61 countries in a pooled analysis that showed among others that a higher dose of (artemether-lumefantrine) is needed to improve treatment for under-

weight children in Africa, and in young children in Asia. The findings from the pooled analysis was published in the Lancet Infectious Diseases.

LANGUAGE CENTRE

Research in the Language Centre since its establishment in 1970 has been focusing on language learning, teaching and assessment, standards of English language use across the educational system, language endangerment and documentation, multilingualism, intercultural communication, written communication, and the interrelated areas of language and literature. Future research would, more or less, be along the current thematic trajectories. During the 2014/2015 academic year, there were substantial accomplishments in research and external/local linkages. The Centre established links with the International Network for Action Research on Education, Language and Society; an independent research organisation based in North America, with Dr. Gordon S. K. Adika as one of its institutional collaborators. The Centre also initiated a partnership with the University of Venda (UNIVEN), South Africa, through collaborative research work. Specifically, Dr. David Ako Odoi and Dr. Gordon S. K. Adika published research work in literary studies and language with faculty of the Department of English, UNIVEN. Locally, the Centre is part of the Language Policy Working Group (LPWG) and the



DR. GORDON S.K. ADIKA

Director, Language Centre

Ghana Reading Action Plan (GRAP) sponsored by USAID. Under this umbrella, the Centre is cooperating with other institutions especially the Ghana Institute of Linguistics Literacy and Bible Translation (GILLBT) on a nationwide language policy project. Faculty of the Centre continued to research and publish in their areas of specialization.

BIOTECHNOLOGY CENTRE

In the 2014/2015 academic year, the Biotechnology Centre continued to deliver on its principal objective of enhancing training and research in the fields of biotechnology and biosafety. Also, the Centre hosted and supported several projects that successfully address important issues within the country and the West African Sub-region. This is demonstrated by the activities discussed below:

Anaplasmosis Vaccine Developments for West African Cattle

The second phase of anaplasmosis vaccine development for West African cattle project was carried out at the Biotechnology Centre between September, 2014 and July, 2015. The project was led by **Dr. James E. Futse** of the Animal Science Department, College of Basic and Applied



Sciences and funded by the Wellcome Trust Fellowship Grant. The primary objective of this project was to develop a vaccine against anaplasma disease of West African cattle. The final output of this project will be the fundamental knowledge of vaccine production for livestock in Ghana, which can further be replicated for other farm animals and/

or human diseases. The expected impacts of this project include massive reduction of anaplasma disease among West African cattle, sustainable food security, improved human nutrition and improved revenue or income of cattle producers with resultant reduction in poverty.

Molecular Identification of VAR2CSA

Dr. Linda Eva Amoah, a Research Fellow at the Noguchi Memorial Institute for Medical Research (NMIMR) undertook research on molecular identification of VAR2CSA, a plasmodium parasite protein that binds Chondroitin Sulphate A in humans, at the Biotechnology Centre, between April and August 2015. This formed part of her

studies on the evaluation of malaria transmission in the field and designing novel agents for blockage of the disease transmission. Research findings will serve as a resource for further studies on the blockage of malaria transmission in pregnant women.

Feed the Future Innovation Lab for Genomics to Improve Poultry

This project was led by **Professor Boniface B. Kayang** of the Department of Animal Science, College of Basic and Applied Sciences, and conducted from October, 2014 to April, 2015. The research revealed the optimal genotype of African chicken ecotypes that best enable them to innately resist Newcastle disease caused by prevalent local strains of Newcastle Disease Virus (NDV) in hot temperature environment. The application of this finding to the development of ecotypes of African chicken with high innate resistance will have a positive impact on the livelihoods of poultry producers in Ghana and beyond by reducing the high mortality rate in poultry associated with Newcastle disease, increasing income gain, reducing malnutrition and ensuring food security.



Professor Boniface B. Kayang



CENTRE FOR GENDER STUDIES AND ADVOCACY (CEGENSA)

The Centre for Gender Studies and Advocacy (CEGENSA) won two major research grants to conduct research on the gendered dimensions of land acquisition and cross-country evaluation of the implementation of domestic violence laws.

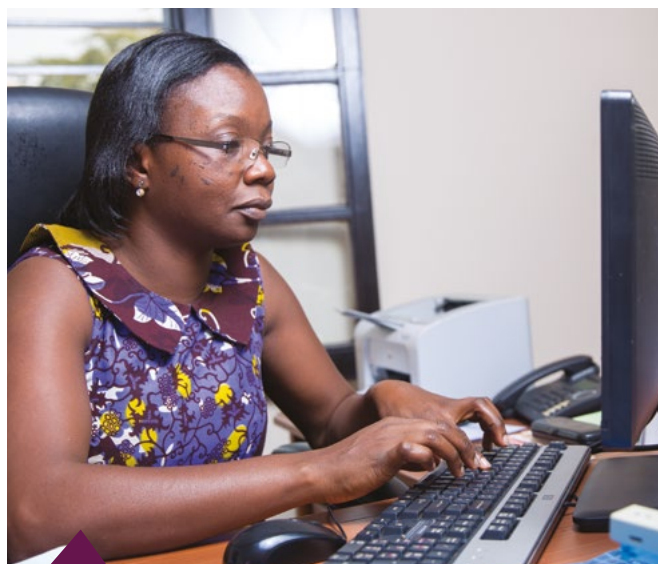
RESEARCH PROJECTS

Interrogating large scale land acquisition and its implications on women in Sub-Saharan Africa

The grant of CAD 230,000 was awarded in February 2014 to examine the conditions under which women can be empowered to effectively participate in the processes of Large Scale Land Acquisition (LSLAs). This project is being undertaken in collaboration with Lotsmart Fonjong of the Department of Geography at the University of Buea, Cameroon and Josephine Ahikire of the Centre for Basic Research in Uganda. Over the last 18 months, the following tasks have been undertaken: a literature review; gender analysis of land laws in Ghana; and data collection in communities in the Greater Accra and Eastern Regions. The major research uptake activity flowing from this project will be the development of a basic tool based on best practices that ensures that land acquisitions take place in a manner that ensures procedural and distributive justice at the community level.

Evidence and Lessons from Latin America project

In September 2014, the Centre received a grant of GBP130,



DR. AKOSUA DARKWAH

Director, Centre for Gender Studies & Advocacy

000 to participate in the second phase of the Evidence and Lessons from Latin America project. In collaboration with colleagues from Fundar in Mexico, this 27-month project investigates the factors that make the implementation of domestic violence laws effective. Data collection is currently under way. The project will include a variety of research uptake activities such as a 5 minute video clip to be uploaded on YouTube, a 10 minute audio clip which will be available on sound cloud, a blog which will be updated weekly, a policy brief, a guide and a newsletter. Stakeholders working on domestic violence including the Ministry of Gender, Children and Social Protection, the Domestic Violence Victims Support Unit as well as various civil society organisations such as the Ark Foundation, the NIMBUS Foundation, the Gender and Human Rights Documentation Centre, the Federation for Women Lawyers (FIDA) are a key part of this project and have already met twice with the researchers.

Table 16: Research Grants Awarded to CEGENSA

Project Title	Donor	Principal Investigator	Amount
Interrogating Large Scale Land Acquisitions and its implications on women in Sub-Saharan Africa	International Development Research Centre, Canada	Dr. Akosua K. Darkwah	CAD 230, 000
Beyond Domestic Violence Bills: What else makes responses to domestic violence effective?	Department for International Development, UK	Dr. Akosua K. Darkwah	GBP130, 000



RESEARCH WITHIN COLLEGES

COLLEGE OF BASIC AND APPLIED SCIENCES

Spearheading sustainable innovations in agriculture, science and engineering that impact national and global development through cutting-edge and intensive research.

The University Council approved the statutes to restructure the University and adopt the Collegiate System of management in the running of its academic units, which took effect on 1st August, 2014 at the beginning of the 2014/2015 academic year. This reform led to the creation of the College of Basic and Applied Sciences (CBAS) as one of the four Colleges under the Collegiate System of



PROFESSOR EBENEZER ODURO OWUSU
PROVOST, COLLEGE OF BASIC & APPLIED SCIENCES



governance. The College comprises six (6) Schools namely, Agriculture, Biological Sciences, Engineering Sciences, Physical and Mathematical Sciences, Veterinary Medicine, and Nuclear and Allied Sciences; two institutes - Institute for Environment and Sanitation Studies and, Institute of Applied Science and Technology; and two Centres – West Africa Centre for Crop Improvement and Biotechnology Centre and West African Centre for Cell Biology of Infectious Pathogens

The College continues to focus on conducting cutting-edge research and having an unparalleled commitment to teaching, which are at the core of the University's mission.

Our first year of existence, 2014/2015 academic year, therefore, focused on advancing our efforts in setting up

sustainable and innovative administrative, teaching, learning, extension and research structures and systems within the College to aid in the development of world-class scientists and engineers to meet national and global developmental challenges. To cement our research efforts a maiden workshop on Research and Mentorship Management was held at Koforidua to kick start the College's vision of thriving on Research. Additional institutional efforts targeted at achieving research-intensive status included the setting up of a Research Endowment Fund, and the Equipment Maintenance and Replacement Fund.

Within the period, a substantial number of grants were awarded to researchers and units as presented in Table 1 below.

Table 17: Research Grants Awarded to the College

Project Title	Donor	Principal Investigator	Amount
Broad-Spectrum Enhancement of Immunity as a Strategy to Prevent Morbidity and Mortality due to Hemoparasite Infection in Highly Endemic Regions	Bill and Melinda Gates Foundation	Dr. James Futse	USD465,697
Ghana Cocoa Rehabilitation and Intensification Programme (CORIP)	Solidaridad West Africa (SWA)	Professor. Daniel Sarpong	EUR49,423
Ghana Skills and Technology Development Project: Training of Rice Farmers on Inland Valley Rice Cultivation to Increase Production	COTVET	Dr. Ken Okwae-Fening	GHS 86,480
Land Access and Tenure Security Improvement Project (LATSIP)	Alliance for Green Revolution in Agriculture	Dr. John Baptist Jatoe	USD7,766
Sustaining High Quality Cocoa Production by West Africa Small-holder Farmers	Flemish Interuniversity Council-University Cooperation for Development [VLIR-UOS]) and the Belgium Government	Professor Emmanuel Afoakwa	EUR 300,000
Enhancing the Peanut Value Chain, from Processing to Marketing Peanuts and Peanut Products"	USAID Peanut CRSP	Professor Agnes Budu and Professor Firibu Saalia	USD 29,557



Project Title	Donor	Principal Investigator	Amount
Trial For The Reduction of Infant Undernutrition Through Modified Feeding (Triumpf) Project	Ajinomoto Co, Inc. Japan.	Dr. Gloria Otoo	USD 700,000
Evidence of recent dengue exposure among malaria parasite-positive children in three urban centers in Ghana.	Royal Society National Institute of Health Office of the Provost and the College of Arts and Sciences at the University of Miami	Dr. Gordon Awandare	EUR 147,000 USD 255,000
Variation in Plasmodium falciparum Erythrocyte Invasion Phenotypes and Merozoite Ligand Gene Expression across Different Populations in Areas of Malaria Endemicity.	Health Office of the Provost and the College of Arts and Sciences at the University of Miami European Research Council Grant	Dr. Gordon Awandare	EUR 86,000
Analysis of Erythrocyte Invasion Mechanisms of Plasmodium falciparum Clinical Isolates Across 3 Malaria-Endemic Areas in Ghana Associations between red cell polymorphisms and Plasmodium falciparum infection in the middle belt of Ghana.			
Deconstructing "malaria": West Africa as the next front for dengue fever surveillance and control			
Source Tracking Mycobacterium ulcerans Infections in the Ashanti Region, Ghana.	Wellcome Trust, United Kingdom	Dr. Lydia Mosi	GBP350,000
Mycobacterium ulcerans fails to infect through skin abrasions in a guinea pig infection model: implications for transmission.	CODESRIA's Small Grant for Thesis Writing	Dr. Lydia Mosi	USD2000
Strengthening capacity for food science and technology teaching , learning and research to add value to indigenous foods for food security in Africa and the Carribean	European Union EDULINK II	Professor Esther Sakyi-Dawson	EUR495,296
Impacts of Ocean Acidification on Diversity of Fish Species Landed by Industrial, Artisanal and Culture Fisheries, and Livelihoods	International Atomic Energy Agency (IAEA)	Professor Francis Nunoo	EUR6500
Fishing for Security in the Gulf of Guinea: Fisheries as a Victim, A Threat and an Opportunity	Australian National Centre for Ocean Resources and Security (ANCORS)	Professor Patrick Ofori-Danson	USD 54,000
Synthesis of Heterogeneous Catalysts for Biodiesel Production	The Royal Society, Lever Hulme Trust'	Dr. Johnson Efavi	EUR110,000
Investigation of Secondary Metabolites from Ghanaian Marine Organisms and their Bioactivity	Royal Society Leverhulme Trust	Dr. Kwaku Kyeremeh	GBP26,000



Project Title	Donor	Principal Investigator	Amount
Investigation of the efficient conversion of photon energy to electricity by newly synthesised low band gap semiconducting polymers with natural pigment as photosensitizer	Royal Society, Leverhulme Trust UG-Carnegie cooperation funds	Professor Robert Kingsford Adaboh	EUR 180,000 USD 35, 000
Gravity Recovery Systems in Place of Mercury in Small Scale Gold Mining	Warwick Mineral Resources Limited	Professor Johnson Manu	USD150,000.00

SCHOOL OF AGRICULTURE

The School of Agriculture consists of six academic departments, namely: Agricultural Economics & Agribusiness, Agricultural Extension, Animal Science, Crop Science, Soil Science and Family & Consumer Sciences; and three research centres, namely: Livestock and Poultry Research Centre (LIPREC), Soil and Irrigation Research Centre (SIREC) and Forest and Horticultural Crops Research Centre (FOHCREC).

The School, within this reporting year, witnessed significant research grant inflows from within and outside the country. The School continues to prioritise the discovery and transmission of knowledge and understanding between our researchers/academics, students and our general community.



Professor John Ofofu-Anim
Dean, School of Agriculture

COCOA REHABILITATION AND INTENSIFICATION PROGRAMME

The project, *"Cocoa Rehabilitation and Intensification Programme for Ghana"* (CORIP-GHANA) Baseline Study is being conducted by Professor Daniel Bruce Sarpong with Dr. Akwasi Mensah-Bonsu and Dr. Irene Egyir. It is sponsored by the Dutch Embassy through Solidaridad West Africa-Ghana with an amount of EUR84,580. This is being done in collaboration with the Wageningen University, Center for Development Innovation (CDI) of The Netherlands. The goal of the project is to enhance sustainable

intensification of cocoa production systems in Ghana such that by the end of the project in 2016/2017, about 40,000 or more cocoa farmers are trained and certified and 50% of these attain yields of at least 1.0 metric ton per hectare. To this end, the research study has developed a working strategy for carrying out quantitative and qualitative data collection with a focus on providing answers to key research/evaluation questions such as: To what extent has the productivity of targeted cocoa farmers increased in project areas? To what extent is the livelihood of the farmer improved? Which service delivery models are most effective in increasing farmer productivity? What are the most cost



effective service delivery models? What is the return on investment at the farm level, RSC level and company level? What is the cost of the production systems? What is the rate of adoption of recommended practices by the farmers?

The expected outcomes of the project are: increased adoption of sustainable practices by cocoa farmers; increased use of services provided by Rural Service Centres (RSC); implementation of better business practices; increased economic improvement of farmers; increased environmental improvement; and increased social improvement.

It is expected that farmers will adopt the training provided by RSC to increase farmers' adoption of training provided by RSC to increase cocoa productivity in project areas; economic returns and livelihood of cocoa farmers and soil fertility levels.



From Left; Professor Daniel Bruce Sarpong, Dr. Irene Egyir & Dr. Akwasi Mensah-Bonsu



Origin and Phylogenetic Status of the Local Ashanti Dwarf Pig

The research project, *Origin and phylogenetic status of the local Ashanti Dwarf pig (ADP) of Ghana based on evidence from mtDNA analysis, MC1R and Y-chromosome haplotypes*, is led by Dr. Richard Osei-Amponsah with Professor Nabeel Affara and Dr. Carole Sargent (of Mammalian Molecular Genetics Research Group of the Pathology Department, Cambridge University, UK) as collaborators. It is funded by the Cambridge Africa Partnership for Research Excellence (CAPREx) and the Alborada Fund.

The Ashanti Dwarf Pig (ADP) of Ghana is an endangered pig breed with hardy and disease resistant traits. Characterisation of animal genetic resources provides relevant data for their conservation and sustainable use for food security and economic development. We investigated the origin and phylogenetic status of the local ADP of Ghana and their crosses with modern commercial breeds based on mitochondrial DNA (mtDNA), melanocortin receptor 1 (MC1R) and Y-chromosome sequence polymorphisms, and genome-wide Single Nucleotide polymorphism (SNP) genotyping.

The ADP of Ghana has genes found in both European and Asian pigs and displays considerable variation in the MC1R gene. Black coat colour is the most predominant within the breed, with the dominant black alleles of both Asian and European origin contributing to the majority of alleles in the pool. European alleles for spotting are present at a low frequency in the sample set, and may account for the occurrence of spotted piglets in some APD litters. Other colour variants may be due to epistatic interactions with additional coat colour loci or mutations. The wide variations in coat colour patterns suggest that morphology alone cannot be used to adequately characterise Ghanaian local pigs. PCA analysis of SNP genotyping data revealed a strong location and breed effect on clustering of local Ghanaian pigs. Furthermore, significant SNPs for lipid metabolism,



Dr. Richard Osei-Amponsah

skeletal development and thyroid function have been found in the ADP, and this provides signatures for organoleptic qualities, lean carcass and body size, and the potential for their preferential selection.

A poster presentation was made at the 2015 Plant and Animal Genome Conference (PAG XXIII) held from 11th to 14th January, 2015, at the Town and Country Hotel in San Diego, California, USA. The purpose of the presentation was to share results with international scientific community, get new ideas and seek potential funding collaborators for further work.



Preventing Morbidity and Mortality of Cattle Using Broad-Spectrum Enhancement of Immunity

This project, *“Broad-spectrum enhancement of immunity as a strategy to prevent morbidity and mortality due to hemoparasite infection in highly endemic regions”* is funded by the Bill and Melinda Gates Foundation (BMGF) under the Program for Emerging Agricultural Research Leaders (PEARL) with an amount of USD465,697 for 36 months. This is a collaborative project led by Dr. James Edinam Futse of the Department of Animal Science of the School of Agriculture in collaboration with Professor Guy Palmer and Dr. Susan Noh both from George Washington University, USA, and Paul Gwakisa of the Sokoine University of Agriculture, Tanzania.

The objectives of the project are to determine if targeted Toll-like Receptor (TLR) stimulation induces protection against severe anaplasmosis in Ghana and East Coast

Fever in Tanzania and determine if TLR stimulation protects against severe disease under conditions of natural challenge. The team aims to develop a proof of concept that innate immune stimulation in cross-bred cattle will result in broad resistance to tick borne disease, thus allowing for genetic improvement of native cattle breeds by year three of the project.



Dr. James Edinam Futse



Dr. Thomas Nortey

Replacing Wheat Bran with Sorghum Barley Brewers' Spent Grain in Broiler Diets

The research project; Sorghum Barley Brewers' Spent Grain (SBBSG) as a Replacement for Wheat Bran in Broiler Diets is led by Dr. Thomas Nortey of the Department of Animal Science with his co-investigator being Dr. Augustine Naazie of the Livestock and Poultry Research Centre. It is funded with a grant of GHS37,000 from the University of Ghana

Research Fund.

The overall goal of the project is to improve the efficiency of use of the local industrial by product (SBBSG) to reduce the cost of animal protein and improve the health of a rapidly growing population in Ghana.

The specific objectives of the project are to reduce the cost of broiler feed by incorporation of SBBSG; improve the efficiency of nutrient utilisation in SBBSG; reduce days to market in broiler birds; and reduce the cholesterol content of broiler meat.

The expected project outcome are lean broilers that weigh approximately 2.5 kg by eight (8) weeks of age; broilers with less cholesterol content in their body fat; a cheaper cost of producing poultry meat, resulting in a more affordable product for the average Ghanaian.

It is expected that farmers will know how to reap the full benefits of this abundant and cheap by-product effectively and will rely less on expensive imported wheat bran.



Using Decision Support Tools to Develop Innovative Maize-Based Technologies for Enhancing Crop Output in Northern Ghana

Dr. (Mrs) Dilys Sefakor MacCarthy, a Research Fellow at the Soil and Irrigation Research Centre, is collaborating with the Savannah Agriculture Research Institute in Northern Region to conduct this research, funded by **CIMMYT IMMYT, CGIAR** Research Programme with an amount of USD 50,000. The project duration was June 2014 to August 2015.

The objectives of this study were to: identify technologies that can improve maize productivity in Northern Ghana using crop modelling as decision support tools, evaluate promising technologies on farmers' fields through demonstrations, develop extension educative materials such as manuals, flyers, leaflets and posters on these technologies and use the educative materials as basis for



Dr. (Mrs) Dilys Sefakor MacCarthy,

scaling up promising technologies to Extension officers, Non-Governmental Organisations (NGOs), Farmer-Based Organisations (FBOs) and farmers.



Dr. Eric Cofie Timpong-Jones

Estimating the Spatial Variability of Herbage Yield and Quality in the Coastal Savannah of Ghana

Dr. Eric Cofie Timpong-Jones, a Research Fellow at the Livestock and Poultry Research Centre of the School of Agriculture is undertaking this research project, funded by the University of Ghana Research Fund with an amount of GHS 35,000. He is collaborating with Dr. Tsatsu Adogla-Bessa, Dr. Leonard Adjorlolo (of Livestock and Poultry Research Centre), Dr. Emmanuel Morgan Attua of Department of Geography and Resource Development, School of Social Sciences, and Dr. Dilys Sefakor MacCarthy of Soil and Irrigation Research Centre, School of Agriculture.

The research seeks to: use spatial statistics to evaluate the spatial structure of herbage production and grazing capacity in the Coastal Savannah rangelands of Ghana; determine edaphic factors contributing to the spatial variability of herbage production; determine the nutritive value of herbage at peak vegetation cover; and, derive herbage yield and grazing capacity maps to facilitate effective range management decisions.



SCHOOL OF BIOLOGICAL SCIENCES

The School of Biological Sciences saw tremendous success in its research activities during the 2014/2015 academic year. The School established new research collaborations both locally and internationally and also strengthened existing ones. This strategy has resulted in an increase in the number of winning internal and external collaborative research projects. New and/or extensions on collaborative research projects were commenced in the following Departments within the School.



Professor Steiner-Asiedu
Dean, School of Biological Sciences

Microbial Quality and Safety of Fish along the Fish Value Chain and their Implications on Food Security: A Case Study of the Artisanal Fishing Industry in Ghana



Dr. Angela Parry- Hanson Kunadu

Through the funding by the University of Ghana Research Fund (UGRF) Investigator-led grant, Professor Kwaku Tano-Debrah and Dr. Angela Parry-Hanson Kunadu have been investigating the microbial quality and safety of fish along the fish value chain and their implication on food security of the artisanal fishing industry in Ghana.

The overall goal of this study is to investigate the microflora of selected fishes along the fish value chain and to predict how these impact the availability and safety of fish. The project will determine the qualities of two marine fishes (Tuna and Mackerel) from selected locations along the coast of Ghana, and two fresh water fishes (Tilapia and African catfish), along the Volta lake and evaluate how they change during handling, storage, processing and marketing.

The project also seeks to determine the intrinsic properties of the selected fresh and processed marine and fresh water fish and how these influence the occurrence and concentration of spoilage and pathogenic microorganisms that are present fish throughout the value chain. The final objective of the project is to understand the selected processed fish value chains, generate information on stakeholder knowledge, practices and attitudes and how these influence food safety risks associated with fresh water and marine fish.



Sustaining High Quality Cocoa Production by West Africa Small-holder Farmers



Professor Emmanuel Ohene Afoakwa

Professor Emmanuel Ohene Afoakwa (University of Ghana), Professor Koen Dewetinck and Professor Pascal Boeckx (Ghent University, Belgium) have formed the VLIR TEAM Cocoa Project, which aims to obtain insight on quantitative and qualitative parameters influencing the quality of intermediate and final products in the cocoa value chain within the Ghana-Côte d'Ivoire cross boundary region, and to intervene in the entire cocoa value chain by identifying

realistic interventions such as best management practices, soil care, pest management, optimised fermentation conditions, which will allow the farmers to produce more beans of higher quality. This is a collaborative research between the Department of Nutrition and Food Science, University Ghana (Ghana) and the Department of Food Safety and Food Quality, Ghent University (Belgium) with funding by the Flemish Interuniversity Council-University Cooperation for Development [VLIR-UOS]) and the Belgium Government.

So far a well-equipped Cocoa Processing and Chocolate Technology Research Laboratory has been set up at the Department of Nutrition and Food Science, University of Ghana, to reinforce the research potential of the UG Research Partners. This laboratory will assess quality control systems for cocoa and chocolate production, research and analysis as means of designing adaptation strategies to assure sustainable production of high quality cocoa beans and healthier chocolate products in Ghana.

Malaria Research

With funding from the Levehulme Royal Society, the National Institutes of Health, Office of the Provost and the College of Arts at the University of Miami, Kintampo Health Research Centre (KHRC) Research Capacity Programme, and the European Research Council, Dr. Gordon Awandare is involved in a number of malaria studies. Among them is *"Evidence of recent dengue exposure among malaria parasite-positive children in three urban centers in Ghana"* where the study involved testing for dengue virus exposure in the blood samples of 218 children ranging from ages 2-14 years with confirmed malaria in hospitals across Ghana. Dengue-specific immunoglobulin M (IgM) antibodies were detected in 3.2% of the children, indicating possible coinfection,

and IgG antibodies in 21.6% of them, which suggested previous exposure. This may be the first seroprevalence survey in Ghana for dengue exposure, which is increasingly being recognised as a neglected tropical disease in West Africa. It was observed that dengue exposure in an unlikely population—confirmed malaria cases—is probably the tip of the proverbial iceberg for local dengue fever epidemiology. The study sample was precisely the opposite population of febrile illness patients who would normally have been screened for active dengue infection, because it was assumed that laboratory-confirmed malaria patients had been properly diagnosed. Given that the local dengue fever burden probably remains obscured by misdiagnosed malaria cases, the prevalence of DENV (and potentially, other flaviviruses) in malaria-negative febrile illness patients is



likely to be higher. The epidemiological profile of infectious diseases remains cloudy in West Africa and demands a more detailed assessment of the local viral fever baseline. Improved clinical awareness, surveillance, and diagnostic testing of febrile illness present a substantial opportunity to improve population health and the deployment of healthcare resources more efficiently throughout the region.

The study titled *"Variation in Plasmodium falciparum Erythrocyte Invasion Phenotypes and Merozoite Ligand Gene Expression across Different Populations in Areas of Malaria Endemicity"* investigates how Plasmodium falciparum merozoites use diverse alternative erythrocyte receptors for invasion and variably express cognate ligands encoded by the erythrocyte binding antigen (eba) and reticulocyte binding-like homologue (Rh) gene families. Previous analyses conducted on parasites from single populations in areas of endemicity revealed a wide spectrum of invasion phenotypes and expression profiles, although comparisons across studies have been limited by the use of different protocols. For direct comparisons within and among populations, clinical isolates from three different West African sites of endemicity (in Ghana, Guinea, and Senegal) were cryopreserved and cultured ex vivo after thawing in a single laboratory to assay invasion of target erythrocytes pretreated with enzymes affecting receptor subsets.

The study titled *"Associations between red cell polymorphisms and Plasmodium falciparum infection in the middle belt of Ghana"* investigates whether Red Blood Cell (RBC) polymorphisms are common in malaria endemic regions and are known to protect against severe forms of the disease. Therefore, it is important to screen for these polymorphisms in drugs or vaccines efficacy trials. This study was undertaken to evaluate associations between clinical malaria and RBC polymorphisms to assess biological interactions that may be necessary for consideration when designing clinical trials. Major findings from the cross-sectional study of 341 febrile children less than five years of age, associations between clinical malaria and common RBC polymorphisms including the sickle cell gene and

G6PD deficiency was evaluated between November 2008 and June 2009 in the middle belt of Ghana, Kintampo. G6PD deficiency was determined by quantitative methods while haemoglobin variants were determined by haemoglobin titan gel electrophoresis. Blood smears were stained with Giemsa and parasite densities were determined microscopically. The prevalence of clinical malarial among the enrolled children was 31.9%. The frequency of G6PD deficiency was 19.0% and that for the haemoglobin variants were 74.7%, 14.7%, 9.1%, 0.9% respectively for HbAA, HbAC, HbAS and HbSS. The results from the study confirm previous findings showing a protective effect of sickle cell trait on clinical malaria infection. However, G6PD deficiency was associated with a marginal increase in susceptibility to clinical malaria compared to children without G6PD deficiency.

The study titled *"Deconstructing malaria; West Africa as the next front for dengue fever surveillance and control"* integrates recent vector ecology, public health, and clinical medicine literature about dengue in West Africa across community, regional, and global geographic scales. A holistic argument is presented for greater attention to dengue fever surveillance in West Africa and renews the call for improving differential diagnosis of febrile illness patients in the region. Major findings from the study indicate that presumptive treatment of febrile illness patients for malaria remains the norm in endemic areas of West Africa, and malaria remains the top source of health facility outpatient visits in many West African nations. Many other febrile illnesses, including bacterial, viral, and fungal infections, share a similar symptomatology as malaria and are routinely misdiagnosed as such; yet growing evidence suggests that much of the burden of febrile illness is often not attributable to malaria. Dengue fever is one of several viral diseases with symptoms similar to malaria, and the combination of rapid globalisation, the long-standing presence of Aedes mosquitoes, case reports from travellers, and recent seroprevalence surveys all implicate West Africa as an emerging front for dengue surveillance and control.



Vasorelaxant and Anti-Inflammatory Activities of the Methylene Chloride Fraction of Foeniculumvulgare Fruit Extract



Dr. Augustine Ocloo

Dr. Augustine Ocloo investigated the vasorelaxant and anti-inflammatory activities of the methylene chloride fraction of crude methanolic Foeniculumvulgare fruit extract (FV). After examining the vasorelaxant activity on isolated rat aortic ring preparations precontracted with phenylephrine and the anti-inflammatory activity in RAW 264.7 macrophage cells, findings shows that FV attenuated the vasoconstriction of pre-contracted aortic strips in

a dose-dependent manner. This effect was found to be endothelium-dependent and through the nitric oxide (NO)-3',5'-cyclic monophosphate pathway. In the anti-inflammatory assays, FV reduced NO release by inhibiting inducible NO synthase protein and mRNA and also suppressed cyclooxygenase-2 expression. It decreased the lipopolysaccharide-induced secretions of tumour necrosis factor- α , interleukin (IL)-1 β and IL-6 and significantly reduced the phosphorylation of c-Jun amino-terminal kinases (JNK1) and extracellular signal-regulated kinase-1 (ERK1/2). Results also demonstrated that the methylene chloride fraction of the crude methanolic FV possesses potent vasorelaxant and anti-inflammatory activities. Foeniculumvulgare mill is used traditionally for treatment of a good number of diseases. This study revealed that the methylene chloride fraction of the extract possesses significant vasorelaxant activity and also showed significant anti-inflammatory activity making it a promising candidate for further studies in the synthesis of vasorelaxant and anti-inflammatory drugs after identification of biomarkers.

Impacts of Ocean Acidification on Diversity of Fish Species Landed By Industrial, Artisanal and Culture Fisheries, and Livelihoods

Professor Francis Nunoo, Professor Patrick Ofori-Danson and Dr. Edward Onumah are carrying out a four-year research study funded by the worldwide International Atomic Energy Agency (IAEA) Project CRP K41012 on the effect of Ocean Acidification and the Economic Impact on Fisheries and Coastal Society. This study aims at determining possible impacts of the ocean acidification phenomenon on the abundance and diversity of fin- and shell-fish species and ichthyoplankton in the artisanal and semi-industrial fisheries, and the associated livelihoods in Ghana. Major findings from the study indicate a decreasing trend in ocean acidification indicators for both fisheries. Variations have also been observed in species abundance



Professor Francis Nunoo

between seasons and fisheries, which indicate the possible occurrence of ocean acidification in Ghanaian waters and likelihood of impacts on fish diversity, and therefore food security.



Former Masters Student, Ms. Edna E. K. Quansah analysing seawater quality in the laboratory



Sampling of Fish catch from the hatch of a semi-industrial trawler

Fishing for Security in the Gulf of Guinea

With funding from the Australian National Centre for Ocean Resources and Security (ANCORS) and the University of Wollongong, Australia, Professor Patrick Ofori-Danson carried out a research to identify the drivers of piracy and other unlawful maritime activities in the Gulf of Guinea region in West Africa, where he evaluated the role of

subsistence, artisanal, domestic industrial and foreign industrial fisheries in promoting or jeopardising national and regional security. Major findings from his study, were viewed from three key perspectives: fisheries as a victim; fisheries as a threat; and fisheries as an opportunity.

This led to the discovery of possible causes of criminality arising within the communities, because of conflicts between fisheries sectors.

SCHOOL OF ENGINEERING SCIENCES

Every academic year the School of Engineering Sciences sees increase in its research output and the 2014/2015 academic year was no exception. Research carried out within the School cut across various engineering sectors.

Faculty engaged in collaborative research with internal and external funding support. For example, the Royal Society, Leverhulme Trust awarded funding to Dr. Johnson Efavi, Dr. Elvis Tiburu, Dr. Dorcas Osei-Safo, and Professor Karen Wilson of Aston University, UK, to conduct a collaborative study to synthesise heterogeneous catalysts for biodiesel production. Professor Boateng Onwona-Agyeman conducted research into solar cells application through the preparation and characterisation of doped transparent zinc oxide. There have been a number of collaborations within the school and between faculty and international partners.



Dr. Stephen Abenney-Mickson
Ag. Dean, School of Engineering Sciences



Synthesis of Heterogeneous Catalysts for Biodiesel Production

The use of fossil fuels to meet the progressive global increase in energy demand as a result of urbanisation, industrialisation and population growth is unsustainable due to fossil fuel depletion and its associated climate change and air pollution problem. There has been a concerted effort to explore renewable energy resources in order to increase the percentage of renewables in the global energy mix.

Biodiesel has been internationally recognised as an alternative renewable source of fuel necessary to increase the percentage of renewables in the total energy mix. Biodiesel can be produced from either edible or non-edible sources. Though edible oils have been used in the past and have some advantages, the advantages of non-edible over edible oils such as lower emission of carbon monoxide, no toxicity and biodegradability, and ecological friendliness makes them more attractive for biodiesel production.

One of the major challenges scientists face in biodiesel production is the highly viscous nature of the oils (either edible or non-edible). Several methods have been used to reduce the high viscosity of oils to enable their use through different technologies such as blending with diesel, pyrolysis, emulsification and transesterification. Pyrolysis and emulsification, however, produce heavy carbon deposits resulting in incomplete combustion and increase oil viscosity. The most accepted scientific method to produce biodiesel is by transesterification of triglycerides of oils using alcohol in the presence of acid or basic catalyst (homogeneous or heterogeneous).

Dr. Johnson Efavi with his team of researchers (Dr. Dorcas Osei-Safo, Dr. Elvis Tiburu and Professor Karen Wilson Aston University, UK) with support of about EUR110,000 from The Royal Society, Leverhulme Trust have focused on the development of heterogeneous molecular sieves from both synthetic and local natural resources (clays) to

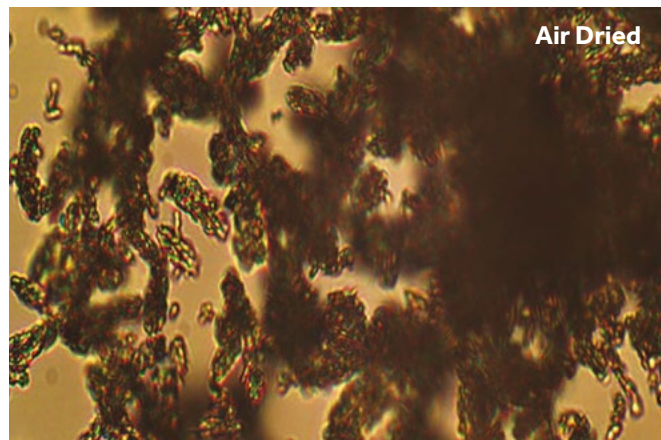
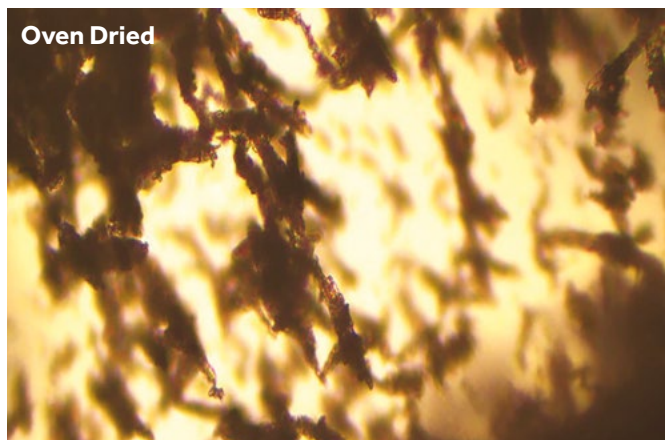


Dr. Johnson Efavi

aid in biofuel production, and the preliminary investigations indicate that porous structure (pore distribution, pore volume, pore size etc.) of molecular sieves are greatly affected by method of crystallisation, which arises as a result of temperature dependence, time and rate of calcination as well as chemical composition of the raw materials.

It is, however, expected that inorganic catalysts will be developed to act as baseline process modules for understanding biofuel production; molecular sieves from natural local clays (aluminosilicates) will be processed, characterised and functionalised; and that Biofuels from extracted non-edible seed oils will be produced.

Successful execution of the project will lead to possible use of biofuel as an alternative energy source that may help mitigate the current energy crisis affecting the country.



Preliminary Micrographs from Synthesised Synthetic Molecular Sieve with dark sections showing the crystal solid phase and light areas showing areas of pore distribution.

Preparation and Characterisation of Doped Transparent Zinc Oxide (ZnO) For Solar Cell Applications (Converting Sunlight to Electricity).

The transparent conducting oxide (TCO) is an important component of optoelectronic devices such as light emitting diodes (LED), solar cells and touch panel displays. In the solar cell, the main functions of the TCO are to allow sufficient sunlight to reach the active layer for photoexcitation to occur. Electrons generated through this process are collected and transported by the TCO. These functions require that, transparent conducting oxides as the name suggests must be optically transparent and electrically conducting to function effectively. Work related to the transport mechanism and electrical properties of TCOs is still ongoing.

For this research supported by the Carnegie Corporation of New York and the IAS Regional Initiative in Science and Education Network through the African Materials Science and Engineering Network (AMSEN), Professor Boateng Onwona Agyeman aims to prepare transparent, doped-ZnO by spray pyrolysis. The ZnO films will be used as TCO in a dye-sensitised solar cell and the performance evaluated. Preliminary findings suggest that adding acetic acid to the



Professor Boateng Onwona Agyeman

precursor solution significantly improves the transparency of the ZnO films prepared. Also, adding acetic acid to the solution before spraying can effectively align the ZnO films along the preferred crystallographic direction. High optical transmittance is very critical in photovoltaic device as that property allows sunlight to be admitted into the device to start the process of converting sunlight to electricity.



Dr. Elsie Effah Kaufmann
Head, Department of Biomedical Engineering

Dr. Elsie Effah Kaufmann was involved in two research projects. The first was on the Design and Evaluation of a Subcutaneous Contraceptive Implant Training Simulator with the aim to develop an implant insertion-training simulator for training health workers, specifically

Community Health Nurses (CHNs) to appropriately insert contraceptive implants.

It is believed that shifting contraceptive implant insertion from highly trained doctors in urban areas to greater numbers of CHNs who are more geographically widespread, through training will contribute to increased access to long-term contraceptive services. A training simulator has been developed and will be extensively assessed in the near future.

The second project involves an assessment of the Use of Prototypes by Novice and Expert Designers in the Product Development Process. Results from this study will inform pedagogy and teaching of engineering design.

Solid-State NMR and X-Ray Diffraction Analysis of Nanosised Mesoporous Materials and their Antimicrobial Activity

Soil contains important information about medical practices, and one of the most important soil types, clay, is a prescription medication for treating viral disease-causing organisms in humans dating back to the Mesopotamia era. The ingestion of clay preparation has been reported to serve as a rich source of essential elements such as iron, copper, calcium, zinc, and manganese for pharmaceutical and cosmetic applications. Additionally, clay consumption has been reported to have capabilities for detoxifying, as well as treating gastrointestinal diseases like diarrhoea. Clay minerals have been identified in biomedical applications including human treatment and healthcare delivery recently. Nanoparticles from clay have been used to reinforce polymeric materials in the preparation of supporting structures for tissue engineering.



Professor Elvis Tiburu
Performing an experiment with his students

Professor Elvis Tiburu is researching into clay for its medical application as an emerging area, because processed clay is known to have well-defined structures, reversible binding to small molecules, selectivity of shape and size, and can



exhibit metalloenzyme properties. This work reports the synthesis and characterisation of mesoporous materials for antimicrobial studies. Processed clay under modified hydrothermal conditions was produced at the Department of Biomedical Engineering. X-ray Diffraction, Fourier Transformation IR (FTIR), Transmission Electron Microscopy (TEM), Solid State NMR and Nitrogen Adsorption experiments were used to characterise and validate the pore

structures of the processed material. Next, the antimicrobial activities of the loaded processed clay were investigated on the growth of microorganisms.

Dr Tiburu is expecting to identify medical clay by using biophysical techniques to understand their mechanism of action and to identify potential bio-nanocomposites as drug delivery systems.

SCHOOL OF PHYSICAL AND MATHEMATICAL SCIENCES

In the year under review, the School of Physical and Mathematical Sciences produced research that cut across various sectors and resulted in 35 peer reviewed article publications.

The high level of research activity within the school resulted in the development of new research collaborations locally and internationally, and the strengthening of existing ones. This culminated in Faculty winning both internal and external grants to engage in and promote collaborative research.

Research within the School and the College was boosted through the acquisition of major ultra modern equipment. These equipment included 500 MHz Nuclear Magnetic

Resonance Spectrometer (NMR), and a bench top X-ray Diffractometer (SC-XRD) for single crystal analysis, both from BRUKER INC, installed in the Department of Chemistry, Frank Tortor Building and a PANalytical Power XRD machine installed in the Department of Physics.



Professor Daniel Asiedu

Dean, School of Physical & Mathematical Sciences



Nuclear Magnetic Resonance Spectrometer

These scientific equipment are the first of kind in sub-Saharan Africa, outside of South Africa. They are versatile instruments that are used for: checking compound purity, elucidating compound structure (how atoms in the molecules are connected), and low temperature (-78°C) experimental analysis. The new equipment will continue to support Faculty, Graduate and Undergraduate research in the various departments.

Local and international collaborative research carried out within the 2014/2015 academic year across the School are highlighted below.



Fate and Exposure of Neonicotinoid Insecticides in the Ghanaian Environment: The Case of Cocoa Production

As pertains to most tropical climates, insect pests pose a significant challenge to food production and contribute to huge losses in crop yields. This is the case with cocoa production in Ghana, the world's second largest producer of cocoa beans. To address this challenge and further ensure the use of only approved insecticides in cocoa production, the Government of Ghana introduced a "*free insecticide application programme*".

Enock Dankyi, together with a team of researchers comprising Professor Derick Carboo, and Professor Chris Gordon of the University of Ghana and Professor Inge Fomsgaard of Aarhus University, with funding from DANIDA through the Building Stronger Universities (BSU) programme, and assistance from the University of Ghana Research Fund are researching on the fate and behaviour of neonicotinoids in the Ghanaian environment.

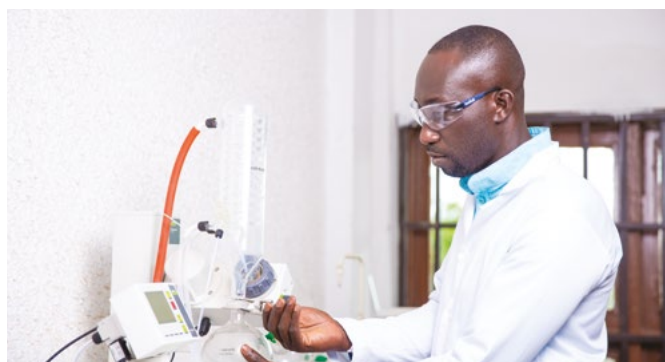
The research has the following objectives: Assessing the presence and residue levels of neonicotinoids in soils from cocoa farmlands across Ghana; examining residue concentrations in cocoa beans (main product consumed); studying their fate in soils through dissipation rates and identification of possible metabolites; and estimating their sorption and leaching potential as a means of predicting their mobility in soils and the environment.



Mr. Enock Dankyi

Preliminary results suggest that the neonicotinoids (in particular imidacloprid) are present in soils several months and sometimes years after their application. This may be due to persistence, the amount applied as well as frequency of application. The adsorption-desorption behaviour in representative soils suggest organic matter and clay minerals as the most important in neonicotinoid retention in soils. Analysis of cocoa beans also suggest a high tendency for accumulation of neonicotinoid insecticides, particularly in cocoa shells though is below the European maximum residue limits (MRLs). This may be due to probably higher amounts used in few cocoa farms.

A review of current recommendations on pesticide application in cocoa farms to improve efficiency may not only help to ensure safe environmental levels, but also avoid the build-up in cocoa beans to unsafe levels.



Dr. Richard Owoare

Antitumor, Anticancer and Monoamine Oxidase Inhibitory Potentials of Isoflavones from the Millettia Thoningii Plants and Their Synthetic Derivatives

The anti-oxidant powers of isoflavones have the ability to reduce the long term risk of cancer by preventing free radical damage to DNA. In order to assess the full potential of isoflavones isolated from the *Millettia thonningii* plants in Ghana as anti-cancer agent, it's important to device a synthetic methodology that would widen the scope of



isoflavone compounds available for anti-cancer screening.

Dr. Richard Owoare in collaboration with Professor Alex Kwadwo Nyarko, Professor Robert Kingsford-Adaboh and Dr. Regina Appiah-Opong are carrying out research to create a library of compounds based on isoflavones isolated from the *Millettia thonningii* plant in Ghana, synthesised their

synthetic derivatives and test the library of compounds for anti-cancer activity. This research is funded with an amount of GHS 90,000.00 from the University of Ghana Research Fund.

Developing an Alternate Anti-Epileptic Product from Medicinal Plants: Exemplifying utilisation of Natural Resources for Quality Health

Synedrella nodiflora, *Leea guineensis* and *Ficus exasperata* are indigenous Ghanaian medicinal plants that have found use in traditional medicine for the treatment of epilepsy. This knowledge has been validated through ethnopharmacological research. This research, with support from the University of Ghana research fund and being carried out by Dr. Dorcas Osei-Safo and team of researchers, aim to produce an alternate anti-epileptic product from extracts of these three plants.

The extracts have so far demonstrated significant anticonvulsant activity in PTZ- and MES-induced seizures with the extract of *F. exasperata* being the most potent and that of *L. guineensis* being the least. A combination of the three extracts and another combination comprising *S. nodiflora* and *F. exasperata* only, both showed significant anticonvulsant activity. The activity was however found to be more significant for the two-extract combination and was, therefore, selected for product development. A sub-chronic toxicity test revealed that the combination



Dr. Dorcas Osei-Safo

increased significantly the levels of bilirubin but did not significantly affect haematological and other liver function assays.

A relatively safe bi-extract anti-epileptic product has been obtained. The product is currently undergoing further testing towards formulation. It is recommended that it should be used with caution in patients with hyperbilirubinaemia or liver conditions.



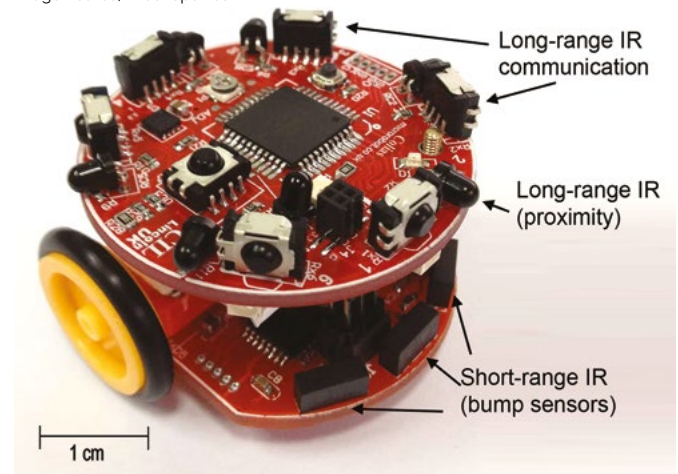
Towards an Affordable Mobile Robot for Education in Developing Countries

There have been recent efforts by some African higher education institutions to improve the quality of teaching and learning by the adoption of educational robotics.

Mr. Ernest Gyebi and his collaborators Farshad Arvin, Marc Hanheide, Shigang Yue and Grzegorz Cielniak, School of Computer Science, University of Lincoln, UK have created a platform Colias. This platform originates from the swarm robotics research, which focuses on developing hardware and software platforms, which are by necessity of limited functionality and very low cost. The functionality provided by the hardware of these robots makes them perfect platforms for educational purposes.

They specifically focus on enhancing teaching and learning of computer science at undergraduate level to students at the Department of Computer Science, University of Ghana.

Image Source: intechopen.com



Our affordable mobile robot at the Department of Computer Science, University of Ghana.

Gravity Recovery Systems in Place of Mercury in Small Scale Gold Mining

Mercury is used in the mining industry for the recovery of gold and in the small scale gold mining, the exposure of this dangerous element, which attacks the nervous and digestive systems, lungs, skin and eyes, is inevitable. For primary gold recovery, the mercury poses prominent risks such as release of the element on the workers and carried into homes, other occupied areas, on clothes and shoes, fish and wildlife. Mercury is very expensive and retorting hardly recovers more than 70% of the original mercury for re-use.

Gravity recovery system using water is a known safe, reliable and cost effective method, which unfortunately artisanal

gold miners in Ghana have little knowledge of or do not value and still prefer to use the wooden board that loses about 60% of the gold. Professor Johnson Manu and Bruce Luckman, Executive Director of Warwick Mineral Resources Limited, established, operated and managed a gold recovery centre on some gold mining concessions, which was able to recover up to 95% of free gold from black sand concentration without the use of mercury.

Establishment of similar gravity gold recovery facilities at various strategic locations in Ghana would provide extreme health benefits to artisanal gold mining workers and minimal damage to the environment, improve the gold recovery output of local gold miners and drastically reduce the import of mercury.



A locally manufactured mineral table using the principle of gravity for the separation of gold in the ore
A simple process that can replace the mercury commonly used in the galamsey gold operators

Evaluating the Short to Medium Term Impacts of Climate Change/Variability on Groundwater Resources in the Nabogo Sub-catchment of the White Volta Basin



Professor Mark Yidana

Access to water of the right quality for domestic and other productive endeavours in parts of the White Volta Basin is a challenge. The problem has been exacerbated by the erratic rainfall patterns and climate change/variability. This has had a toll on rain-fed agricultural activities in the basin. There is the urgent need to diversify the current agricultural practices to include groundwater based irrigation schemes.

However, large scale abstraction of groundwater resources to support such schemes will require an assessment of the hydrogeological conditions of the underlying lithologies and the resilience of the aquifers to climate and human induced stresses.

Professor Mark Yidana, with support from the University of Ghana Research Fund, undertook a pilot investigation of the groundwater recharge regime of the shallow aquifer system of the Nabogo sub-catchment of the White Volta Basin using a suite of isotope and hydrochemical tracers. He evaluated the processes of vertical infiltration of precipitation through the vadose zone and provided insights on evaporative and transpirative water losses through the vadose zone material.

Preliminary findings have provided an appropriate foundation for the conceptualisation of the hydrological processes in the vadose zone of parts of the White Volta Basin, which will be useful in the large scale hydrogeological investigation of the White Volta Basin.

This investigative study has led to the successful grant application from the Danish International Development Agency (DANIDA), to conduct a detailed hydrogeological assessment of the entire White Volta Basin. The new grant has been awarded, and the follow up research began in January 2015.



Ecowas Coastal and Marine Resources Centre is Combatting Illegal, Unregulated and Unreported (IUU) Fishing in the West African Region

In Ghana, over 400 inshore vessels and 9,000 canoes are currently licensed to fish in its Exclusive Economic Zone (EEZ). Unfortunately, all these small fishing vessels are not fitted with any device to allow them to be monitored by any of the electronic surveillance systems in the country. A major challenge that needs to be tackled to ensure comprehensive coverage of crafts exploiting the resource is the monitoring of small fishing vessels. This cuts across the West Africa sub-region.

The Fisheries Sector in the region faces problems such as: no stock assessment as baseline information, incomplete fishing fleet registry (focus only on industrial fleet), an open access to smaller boats, no communication system against accident at sea, low resourced MCS units or lack of MCS units, an inadequate human capacity and an Illegal, unregulated and unreported (IUU) fishing characterised by large unlicensed vessels and the use of illegal gear and methods (smaller mesh sizes, pair trawling, chemicals and explosives, transhipment, etc.

West Africa's waters are endowed with one of the world's richest concentration of finfish, crustaceans and molluscs. In contrast, its coastal fishing communities are amongst the most impoverished and vulnerable to Illegal, unregulated and unreported (IUU) fishing by foreign fishing vessels. The region is estimated to have the highest levels of IUU fishing in the world, representing up to 37 percent of the region's catch. IUU fish loss per boat per year is estimated to be up to USD 3,000,000,000 in the West Africa sub-region. Vessel Monitoring System (VMS) and Vessel Traffic Monitoring and Information Systems (VTMIS) are used for monitoring systems in some countries in the region. The VMS offers a satellite based communication system, but at high cost, and it only conducts surveillance on registered industrial fleet. Meanwhile the VTMIS provides shore-based surveillance and is limited to a domain of 30 nautical miles.



A view of a fishing community in Ghana, showing the fishing effort

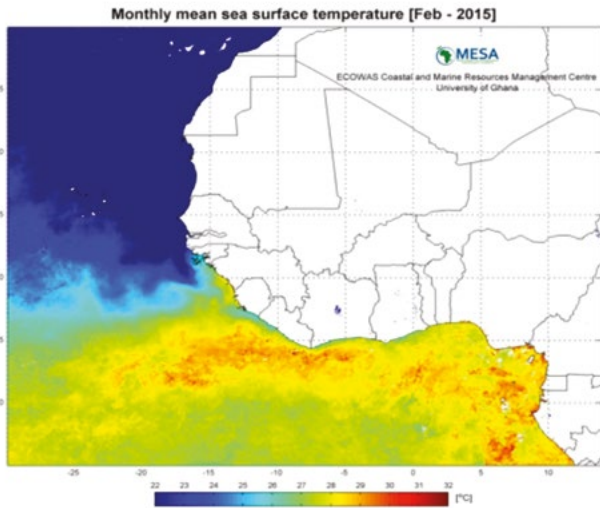
This prevents both monitoring systems from being a truly practical global solution.

The ECOWAS Coastal & Marine Resources Centre through the Monitoring for Environment and Security in Africa (MESA) program, funded by the European Union under the 10th EDF rule, is providing Earth Observation (EO) applications to enhance effective policy formulation for sustainable fisheries management. The Centre is providing marine services to support fisheries with science-based decision making through:

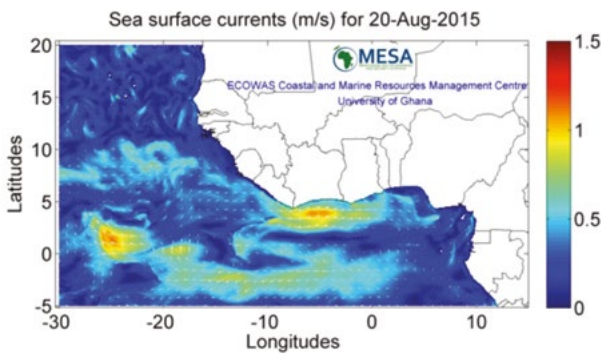
- Production of Potential Fish Zone (PFZ) overlaid with fishing vessel traffic
- Early warning system to ensure safety for artisanal fishers by forecasting ocean conditions and disseminating them via SMS, etc.
- Installation of MESA stations in all countries to ensure reliable access to continuous data stream
- Building of collaboration and synergies in the region to avoid duplication and maximise resources
- Institutionalisation to ensure sustainability at the regional level, national level, and with National Centres of Excellence and universities.



Monthly mean sea surface temperature (feb-2015)



Example of product used to produce monthly bulletin



Example of product depicting an ocean state

As part of the efforts to support fisheries management in the West African sub-region, the Centre is also monitoring fishing vessel traffic using Automatic Identification System (AIS) to augment the already existing Vessel Monitoring Systems (VMS) in some countries. Installation of Class B AIS transponder on 18 inshore vessels and 2 canoes has started as a pilot project in Ghana. The system has the advantage of monitoring vessels traffic in sensitive areas, provide safety to artisanal fishers at sea in case of accident, and collect information for stock assessment including type of species caught and fishing grounds. This programme is in collaboration with ExactEarth Ltd, Ministry of Fisheries and Aquaculture Development, Ghana Navy, Marine Police and Ghana Inshore Fisheries Association.

At the Regional Fisheries Directors Forum held on 22nd of July 2015 in Abuja, Nigeria, the Directors of Fisheries of the

participating countries (Benin, Cape Verde, Cote D'Ivoire, Gambia, Ghana, Guinea Bissau, Guinea, Liberia, Mauritania, Nigeria, Sao Tome and Principe, Senegal, Sierra Leone and Togo) highlighted the challenges they have in monitoring small vessels in their respective countries. They expressed the need to harmonize the legal fisheries framework on small vessel surveillance.



Group photo of Participants at the 2nd Regional Steering Committee, Regional Fisheries Directors Forum and National Focal Point NFP technical Meetings in Abuja, July 2015

The ECOWAS Marine theme is being fully developed at Regional Implementation Centre, ECOWAS Coastal & Marine Resources Centre. The Centre is building the capacity of all partners in order to provide the same services in their countries.

The Centre is working together with ECOWAS, Regional bodies and National Focal Points to develop a protocol to harmonise legal framework for small vessel monitoring. ECOWAS is spearheading the upscaling of small vessel monitoring in the region.



From left to right: Mr Dedi Nadjé Seraphin (Permanent Secretary of Fisheries Committee for the West Central Gulf of Guinea, FCWC), Prof John Owusu Gyapong (Pro-VC of University of Ghana), Dr Johnson Boanuh (Director of Environment, ECOWAS Commission) and Mrs Assaitou Fall Ndoye (National Focal Point Coordinator in Senegal)



COLLEGE OF EDUCATION

The College of Education was established in November 2014 as part of the University's efforts at responding to local and international human capital development needs. The major research activities of the college during its first year of existence focused on capacity building for Faculty to acquire knowledge and skills needed to meet the global requirements of producing high quality research. Faculty research during the year range from information management to the use of ICT in teaching and learning, health communication and climate change communication



PROFESSOR CEPHAS NARH OMENYO
PROVOST, COLLEGE OF EDUCATION



Dr Yaa Cole
Coordinator, School of Education and Leadership

SCHOOL OF EDUCATION AND LEADERSHIP

The School of Education and Leadership comprises the Departments of Teacher Education, Educational Studies and Leadership, and Physical Education and Sport Studies. The School of Education and Leadership employed one faculty member in the 2014/2015 academic year and three faculty members and one research fellow to start in the 2015/2016 academic year.

Capacity Building for Research: College of Education Collaborates with University of Sussex

The University of Ghana signed a Memorandum of Understanding (MOU) with the University of Sussex to promote co-operation between the two institutions in education and in academic research. The MOU provides the platform for enhanced collaboration between the two universities, which seeks to explore co-operation on academic programmes; development of joint research activities; facilitation of staff exchanges or mutual visits; training and development of Doctoral students; student exchange and/or visiting programmes; exchange of information, including the results of teaching and research collaboration; and any other activities viewed to be mutually beneficial.

The Vice Chancellor, Professor Ernest Aryeetey visited the School with the Registrar, Mrs Mercy Haizel Ashia, the Provost of the College of Education, Professor Cephas Omenyo and the Coordinator of the School of Education and Leadership at the College of Education, Dr. Yaa Cole. The visit was facilitated by Professor Brian Hudson and



Professor Kwame Akyeampong of the School of Education and Social Work.



The Vice Chancellor Signing an MoU

School of Education and Leadership partners University of Sussex to hold International Conference on Education Research for Development in Africa

The School of Education and Leadership of the College of Education, University of Ghana, and the Department of Education, University of Sussex, organised the first International Conference on Education Research for Development in Africa (ICERDA) on the theme, "Harnessing Education Research for Evidence-Based Development". This was one of the outputs of an MoU signed between the two universities in February, 2015. The conference was partly funded by ORID, and chaired by The Pro-Vice-Chancellor in charge of Research, Innovation and Development, Professor John Gyapong. The key note speaker was Professor Kwame Akyeampong, of the University of Sussex.

The conference was organised under four sub-themes: Gender, Equity and Social Justice under the leadership of Professor Audrey Gadzekpo (Dean of the School of Information and Communication Studies) and Professor Mairead Dunne (University of Sussex); Teacher Education

for School Improvement under the leadership of Professor Kwame Akyeampong (University of Sussex) and Dr. Yaa Cole (Interim Coordinator of the School of Education and Leadership); Educational Leadership for School Improvement under the leadership of Professor Colleen McLaughlin (University of Sussex) and Professor George Oduro (University of Cape Coast); Framing Quality Education for Equitable Learning under the leadership of Professor Brian Hudson of the (University of Sussex) and Professor Jerome Djangmah (Former Director-General of the Ghana Education Service).

There were 35 presentations in parallel and panel discussions addressed by various academics from the University of Ghana, University of Sussex, University of Cape Coast, the Ghana Institute of Journalism and the University of Education, Winneba. Participants at the Conference were drawn from tertiary institutions in Ghana and Nigeria, as well as stakeholders in the educational sector.

SCHOOL OF INFORMATION AND COMMUNICATION STUDIES

The School of Information and Communication Studies is the smallest School within the Collegiate System of the University of Ghana. It comprises two departments: the Department of Communication Studies and the Department of Information Studies. The focus of the marriage of these two departments is directed at improving and extending the frontiers of Information and Communication Management through effective teaching, learning and research.

The School focuses on training world-class students and equipping them with the skills needed to be effective practitioners in any Information and Communication related field. Through collaborative teaching and exposure to research our students should have no difficulty competing in the emerging information and communication market.



Professor Audrey Gadzekpo
Dean, School of Information & Communication Studies

Research continues to be a focus of the School's activities. In the year under review, the Department of Information Studies hosted the 4th International Conference on African Digital Libraries and Archives (ICADLA -4) at the University of Ghana. In addition, a number of academics in the School participated in international conferences where they presented papers.

Faculty within the School continued the tradition of collaborative research, approached from communication and information management perspectives. Issues interrogated included: climate change, framing disease, conflict resolution, sustainable development, information disaster management and women in politics.

Searching for Common Ground: CSO-Media Relations in Conflict Resolution and Peacebuilding in Ghana

Conducted by Professor Audrey Gadzekpo, this research sought to critically interrogate the seeming symbiotic relationship between Civil Society Organisations (CSOs) and the media in conflict resolution and peacebuilding. The research aimed to gain a better understanding of how, and under what conditions CSOs that are engaged in peacebuilding involve the media in their work, and how the media respond to them. It argued that both sectors (CSO and Media) have assumed centrality in peacebuilding because of their capacity to set the agenda for discourse and actions in the public sphere. However, little scholarly

attention has been paid to the interplay between these two important non-state actors working on peacebuilding in Africa. The research found that the relationship between CSOs and media was marked by mutual dependency on each other to fulfil normative peacebuilding functions. Still relations were fraught with challenges arising from such factors as conflicting work norms and cultures; different understandings of what makes news; a monetisation of the relationship due to commercial pressures on news production, and other resource constraints. The research was funded by a grant from the African Peacebuilding Network (APN).

Disease Outbreaks and Media Narratives in the Age of Globalisation: A Framing Analysis of Ebola Coverage in Western and Non-Western Media.

Dr. Godwin Etse Sikanku and Ms. Victoria Adu of the Department of Communication Studies collaborated with Professor Isaac Blankson of Southern Illinois University to examine how local and international media covered the Ebola crises. This research explored how Ebola was depicted in newspapers across the world. The purpose of the study was to investigate constructions and social



From Left; Professor Isaac Blankson, Mrs Victoria Adu & Dr. Godwin Etse Sikanku



representations of Ebola from a comparative perspective. Media framing was used as the theoretical and methodological framework. This is because news media depictions of public health issues affect individual as well as public interpretations and actions. It analysed how African and Western media covered what started out as an African epidemic to a global crisis. Newspapers selected for the study included the *New York Times*, *Washington Post*, *Sierra Leone Concord Times* and the *Daily Observer* in Liberia. Findings revealed the following themes: "single narrative on Africa", "poor hygiene narrative", inconsistent (episodic) coverage, speculative coverage, primordial and panic based themes.



Dr. Eric Boamah

Digital Preservation: International Conference on African Digital Libraries and Archives Held

The Department of Information Studies facilitated the organisation of the 4th International Conference on African Digital Libraries and Archives (ICADLA-4) in May 2015. Twelve papers were delivered in a two-day conference, including a joint paper presented by faculty members, S.N.B Tackie and Dr. Eric Boamah on "*The State of Digital Heritage Resources Management in Ghana.*"

Mediating the Climate Change Message: Perceptions and Practices of Journalists in Ghana

Professor Audrey Gadzekpo, Dr Gilbert Tietaah and Mr. Martin Segtub, a PhD student of the Department of Communication Studies, examined the perceptions and practices of journalists as mediators of climate change messaging in Ghana. It was funded under the University of Ghana Building Capacity to Meet the Climate Change

Challenge (B4C) project and presented at the International Conference on Climate Change and National Development: "*Harnessing Research for Sustainability*" held 24-25 June, 2015 at the Centre for African Wetlands, University of Ghana.



Professor Audrey Gadzekpo in a discussion with Dr. Gilbert Tietaah (Right) and Mr. Martin Segtub, a PhD student



Faculty access to and use of digital resources and their implications for library services in three Ghanaian universities

Professor Perpetua Dadzie's research examined the value that faculty members place on access to and use of digital resources and their implications for library services in three Ghanaian universities. The underlying implications of this study show that more advocacies are required from university libraries to enhance the use of digital resources. Professor Dadzie also investigated the availability of strategic plans or policies for the development of digital libraries in selected universities in Ghana. The paper provides direction for university librarians to enhance teaching, research and learning through the proper management of digital libraries across the universities. She also collaborated with Prof. E.E. Badu and Professor Perpetua Dadzie in a study that explored various leadership approaches in the context of Ghanaian university libraries and concluded that there was the need to pursue formal



Professor Perpetua Dadzie

Head, Department of Information Studies

leadership training in order to keep up with future changes. The Department of Information Studies, which is the only training school for librarians and archivists in Ghana was tasked to create specific leadership programmes in the curriculum.

Everyday life information seeking behaviour of urban homeless youth in Ghana



Dr. Evelyn Markwei

Dr. Evelyn Markwei and Professor Edie Rasmussen of the School of Library, Archival and Information Studies, University of British Columbia in Vancouver, investigated the information seeking behaviour of homeless or street youth in Ghana. The study was funded by IDRC (International Development Research Centre), Canada. The main objectives of the study was to investigate the information needs of street youth in Ghana, their sources of information, patterns and problems they encountered in seeking information and to determine how libraries and other stakeholders can efficiently provide quality information services to meet their information needs. The study adopted the interpretive tradition and a qualitative approach. The study has implications for information dissemination and public library after-school programmes and policies to facilitate provision of services and information resources for homeless youth in Ghana.



The Impact of Information Systems Investment on Bank Performance in Ghana

Dr. Ebenezer Ankrah examined the impact of information systems investment on bank performance in Ghana. The major objectives were: to determine the types of technology that the banks invest in; to examine the level of Information System (IS) investment in the banks; and to determine the relationship between IS investments and bank's performance. The cases investigated were six local banks and foreign banks. Staff from the six banks were recruited from their Head Offices in the Greater Accra Region. The study revealed that, there had been high rates of investment in the past three years made by the various banks; statistically information systems investment had a positive relationship with bank performance. The qualitative interviews suggested that market share, profitability and



Dr. Ebenezer Ankrah

ROA increased as IS investments were employed in the industry.



Mrs. Catherine Asamoah & Professor Harry Akussah

Records Management Practices in the Public Sector of Ghana: A Survey

This study by Professor Harry Akussah and Catherine Asamoah surveyed and evaluated the management of public sector records in Ghana with a view to making constructive recommendations to ensure efficiency in

public administration. The investigators also examined the disaster management procedures adopted by public sector institutions in managing their critical documents in Ghana. The study revealed that public sector institutions were exposed to various kinds of risks in their operations, and yet, were ill prepared for crises. Further, it was identified that the Public Records and Archives Administration (PRAAD), which has the mandate to play the lead role in public sector records protection was constrained and had virtually abandoned its co-ordinating functions. It was also established that the National Disaster Management Organisation (NADMO) had no disaster plan for specific organisations and that the National Disaster Management Plan (NDMP) currently in use pays no attention to information resources. However, the reform programme had brought on board immense capital injection into the records management sector, which enabled an overhaul of the system. The study investigators emphasised the importance of sustainable structures and the continuous re-tooling of systems to accommodate changing trends in records management for good governance.



COLLEGE OF HEALTH SCIENCES

One of the objectives of the College is to promote research through the provision of an enabling environment. In positioning itself for enhancement of research, the College of Health Sciences established a Research Board responsible for setting the research agenda of the college. Through this, the College is promoting the formation of research teams to carry out multidisciplinary research. The year also saw the reconstitution of the Ethical and Protocol Review Committee of the College at the Korle-bu campus making it the second Ethics board for the College. This is to ensure that quality research proposals are written, and human subjects are respected in all research. The Malaria Center of Excellence established by the University and coordinated



PROFESSOR YAO TETTEY
PROVOST, COLLEGE OF HEALTH SCIENCE

by the Noguchi Memorial Institute for Medical Research has also been actively pursuing malaria vaccine research.

SCHOOL OF BIOMEDICAL AND ALLIED HEALTH SCIENCES (SBAHS)



Professor Patrick Ayeh-Kumi
Dean, School of Biomedical & Allied Health Sciences

The new academic and professional orientation of the School of Biomedical and Allied Health Sciences (SBAHS) has provided a major stimulus

to research activity within the various disciplines of allied health sciences. Faculty research has taken an upward drive with a number of research funding received by some faculty in the past year. Research production and publications have increased and faculty and postgraduate students are exploring new research areas and working out collaborative research opportunities with local and international universities, institutes and organisations. Through these research activities, novel assays for gene mutation analysis have been developed. The School has also established an annual course on Florescence Microscopy in partnership with the University of Colorado, Boulder, USA.

The Journal of Biomedical and Allied Health Sciences (JBAHS) formerly known as the "Ghana Journal of Allied Health Sciences" is a journal of biomedicine and public health that focuses on the translation of knowledge in medical laboratory science, physiotherapy, radiography, dietetics, respiratory therapy, and audiology into epidemiological control measures for global health threats.



Effects of Factor V Leiden Polymorphism on the Pathogenesis and Outcomes of Preeclampsia

The aim of this two-year study is to investigate the role of factor V Leiden polymorphism on pathogenesis and outcomes of preeclampsia. It is a nested case controlled study being conducted by Dr. Grace K. Ababio (Principal Investigator) and Dr. K. Adu-Bonsaffoh (Co-investigator) at the Korle-Bu Teaching Hospital (KBTH) with funding from the University of Ghana Research Fund. It is anticipated that novel prognostic indicators including mutant strains of factor V Leiden in PE would be identified. Findings from this study would provide evidence-based information for policy makers and clinicians on the management of preeclampsia and its complications.



Dr. Grace K. Ababio

The effect of the aqueous root extract of Croton membranaceus on the treatment of Benign Prostatic Hyperplasia (BPH) and Prostate Cancer.

The aim of the study was to ascertain the therapeutic effects, mechanism(s) of action and efficacy of C. membranaceus aqueous root extract (CMARE) prepared by the Centre for Plant Medicine Research (a WHO accredited Centre) by determining biochemical and therapeutic markers of patients opting for Complementary and Alternative Medicine (CAM) in the treatment of BPH and prostate cancer. The study has resulted in the first time human report on the use of this medicinal plant at the Centre for Plant Medicine Research where the plant extract was first used. The Principal Investigator of the study is Dr. (Major Rtd.) George Awuku Asare, SBAHS, UG. Co-Investigators include: Prof. Dominic Adotei Edoh, Mr. A.A. Appiah (Centre for Plant Medicine Research, Mampong, Akuapim); ACP Dan K. Afriyie ACP/Dr Iddi Musah (Ghana Police Hospital, Cantonments Accra); Professor Ben Adu Gyan, Dr. Samuel Adjei (Noguchi Memorial Institute for Medical Research, University of Ghana, Legon) and Mr. Peter Arhin (Traditional and Alternative Medicine Council, Ministry of Health, Accra)



Dr. (Major Rtd.) George Awuku Asare



Cryptosporidial diarrhoea in children at the Princess Marie Louise Hospital (PML), Accra

The aim of the project, led by Dr. Isaac Anim-Baidoo and with funding from the School and NMIMR, was to screen children with acute diarrhoea at a paediatric hospital in Accra for enteric parasites to determine frequency of cryptosporidial diarrhoea. Project collaborators were based at Department of Immunology (NMIMR), Department of Parasitology (NMIMR) and Princess Marie Louise Children's Hospital, Accra.

The study showed that *Cryptosporidium parvum* is the commonest enteric parasite causing diarrhoea among children with acute diarrhoea. Children ≤ 3 years and those who drank sachet water were most affected. A carefully planned health education among illiterate mothers and improved sanitary conditions could reduce rate of infections.



Dr. Isaac Anim-Baidoo

*A survey of pathogens associated with *Cyperus esculentus* L (tiger nuts) tubers sold in a Ghanaian city*

This study was conducted with Prof. Patrick Ayeh-Kumi as the principal investigator and aimed to determine the level and distribution of parasitic and bacterial contaminants associated with *Cyperus esculentus* L (tiger nuts), a popular nut known for its aphrodisiac properties. Four types of intestinal parasites were identified, with the most prevalent being *Cryptosporidium parvum* (30.0%). Bacteriological examination showed three different groups of bacterial isolates with the most prevalent being coliforms (54.2%). *Proteus vulgaris* identified in the study displayed multiple resistant phenotype. Interestingly, nuts contaminated with parasites were found only among street vendors while

bacterial contamination was identified both in nuts sold by street vendors and on the market. The study concluded that eating tiger nuts bought raw from vendors or market places could pose a considerable public health threat.



Professor Patrick Ayeh-Kumi with his students

*A study of *Trichomonas* Infection at The Comboni Hospital, Sogakope, Volta Region of Ghana*

This study is led by Professor Patrick-Ayeh-Kumi with Rita Fosua Kwakye and Mr. Richard Harry Asmah as co-investigators. The study evaluated the prevalence of trichomoniasis using different diagnostic methods and factors associated with the infection among patients

referred to the Laboratory for an STI or Urinary Tract Infection (UTI) or vaginitis screening, with or without genitourinary symptoms at a hospital in Ghana. Overall, the study has shown that trichomoniasis is prevalent among both females and males in the study area and suggests regular education of the general public on trichomoniasis and screening of at-risk groups as control strategies.



Epidemiology of beta-lactamase producing Escherichia coli and Klebsiella pneumoniae in Ghana

This study was conducted to determine the occurrence and clinical significance of beta-lactamases in Escherichia coli and Klebsiella pneumoniae among clinical and gut colonisation strains from hospital patients and community residents. Specifically, it focuses on genotypes of plasmid mediated AmpCs, ESBLs and carbapenemases; E.coli phylogeny and O25b:ST131 isolates; treatment outcomes; as well as risk factors for colonisation and infection with these organisms. The study highlights the fact that gut colonisation with beta-lactamase-producing bacteria remains a significant risk factor for ESBL infections. Similarly infections with β -lactamase-producing E.coli or K. pneumoniae constituted a risk factor for inappropriate antibiotic therapy.

The project is led by Noah Obeng-Nkrumah with Mercy Jemima Newman, Niels Frimodt-Møller, Dennis Schröder Hansen, Karen Angeliki Krogfelt as co-investigators.



Dr. Noah Obeng-Nkrumah

Comparative Joint Position Error of Patients with Non-Specific Neck Disorders and Apparently Healthy Aged Matched Individuals



Dr. Ajediran Bello demonstrating a study to some of his students



The aim of this study, led by Dr. Ajediran Bello, is to examine the effect of neck pain on proprioceptive functioning of the cervical spine among Ghanaians. The study is envisaged to reveal the influence of neuromuscular and musculoskeletal dysfunctions on the proprioceptive status of the clients. Although this study attracts no funding, it is a kick-start project that serves as acid test for future opportunities for research grants from Switzerland. The project is a research collaboration between the Department of Physiotherapy, and the Institute of Physiotherapy,

Zurich University of Applied Sciences, Switzerland. Co-investigators include Jonathan Quartey, Bertha Oppong-Yeboah, Anna Hughton and Emmanuel Bonney all of the Department of Physiotherapy, International collaborators include Dr. Christopher Bauer and Markus Ernst of the Institute of Physiotherapy, School of Health Professions, Zurich University of Applied Sciences; Kow Acquah, Felix Asomaning, Margaret Foli and Gifty Akushie all of the Physiotherapy Department of the Korle Bu Teaching Hospital Accra.

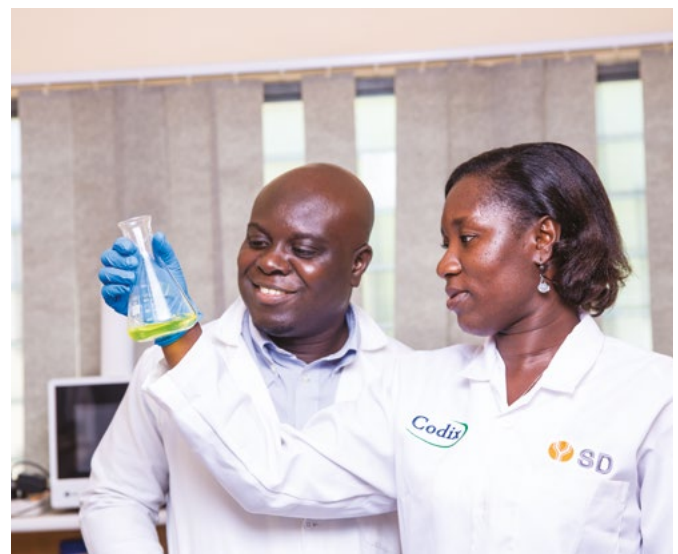
Antibiotic Drug use, Monitoring and Evaluation of Resistance (ADMER)

This project was a collaboration between Danish and Ghanaian partners. It was initiated to strengthen surveillance of antimicrobial resistance in Ghana. Funding for the project was provided by DANIDA.

A series of research projects were conducted under this 5-year collaboration, two of which are featured below.

Faecal carriage of β -lactamase – producing *Escherichia coli* and *Klebsiella pneumonia* among persons living in the community

This study undertaken by Noah Obeng-Nkrumah and Georgina Awuah-Mensah reported the occurrence of AmpCs, ESBLs, and carbapenemase genotypes in faecal isolates of *Escherichia coli* and *Klebsiella pneumoniae* from non-institutionalised community residents in Ghana. Using a multivariate logistic regression model, the study identified the availability of toilet facility in households to be significantly protective against faecal carriage of BLEK.



Dr. Noah Obeng-Nkrumah & Mrs. Georgina Awuah-Mensah



Multidrug-Resistant *Streptococcus pneumoniae* Isolates from Healthy Ghanaian Preschool Children

The aim of this study, undertaken by Dr. Nicholas Dayie and Mr. Reuben Arhin, was to determine the antibiogram of *S. pneumoniae* recovered from Ghanaian children younger than six years of age and to what extent resistances were due to the spread of certain sero- and Multilocus Sequence Typing (MLST) types. Overall, 72.2% of isolates were resistant to penicillin (I or R) and at least two other

antimicrobials. MLST of 20 isolates showing resistance to at least four antimicrobials revealed a high diversity documented by 16 different clones, none of which had previously been associated with multidrug resistance. The resistances found may have emerged due to non-prudent antimicrobial use practices, and there is a need to monitor and promote prudent antimicrobial usage in Ghana.

SCHOOL OF MEDICINE AND DENTISTRY

The new School of Medicine and Dentistry (SMD) is a clinical school resulting in the merger of the clinical programmes of the former University of Ghana Medical School and University of Ghana Dental School. The School recognises the invaluable clinical service its senior members render to the general public and appreciates the effort that they continue to put into research and teaching. The School's faculty members are engaged in collaborative research with international partners with funding from donor agencies including National Institutes of Health (NIH), World Health Organization (WHO) and the European Union (EU). There are also a number of ongoing projects funded by the University of Ghana Research Fund, while a number are self-funded by the researchers. In line with the University's vision of becoming a research-intensive institution, research has been placed high on the School's agenda.

The Research Committee of the School organises a regular monthly research forum. Occasionally, distinguished Visiting Scholars to the School are also invited to make presentations. The School also publishes a periodic Research Newsletter, which features a diverse range of research-related activities.



Professor Jennifer Welbeck
Dean, School of Medicine & Dentistry



RESEARCH PROJECTS

Human Heredity and Health in Africa (H3Africa)

The School of Medicine and Dentistry acquired a grant in 2012 through the Noguchi Memorial Institute for Medical Research to research into Chronic Kidney Disease and assist the School set up an Office of Research Support.

The project, aims to facilitate a contemporary research approach towards the study of genomics and environmental determinant of common diseases with the goal of improving the health of the African population.

H3Africa is intended to create new research capabilities in Africa, both in terms of infrastructure and in the creation

of new collaborations between African researchers and researchers in the United States and Europe. It will foster collaborations between researchers in different parts of Africa.

The value proposition of the Research Network with the School of Medicine and Dentistry is to conduct genomics research that will identify new genetic/environmental determinants of kidney disease necessary to develop preventative programmes (such as screening, diagnosis and treatment) of kidney disease in Africa and beyond. This is a collaborative network of investigators from 10 African institutions and four United States institutions.

Dental age assessment of the Ghanaian using the Demirjian method

The purpose of this study, conducted by Dr. Anyigbah Etornam and Dr. Gyami Amoah, was to evaluate the accuracy and applicability of the Demirjian method in assessing the dental age of a Ghanaian population. This was a retrospective study, which involved the use of 217 panoramic radiographs of Ghanaian children of known chronological age and gender from ages 4-16 years. It was found that on the average the dental development of Ghanaian boys was 1.1 years ahead of their French Canadian counterparts and Ghanaian girls were 1.3 years ahead.

Prevalence and causes of traumatic dental injuries in Ghanaian preschoolers in Accra metropolitan, Ghana

This was a cross sectional study based in Accra to investigate the prevalence, aetiology, place of injury, pattern of distribution of traumatic dental injuries to primary anterior teeth in Ghanaian preschoolers aged 2-5 years. The prevalence of traumatic dental injuries was 4.2%.

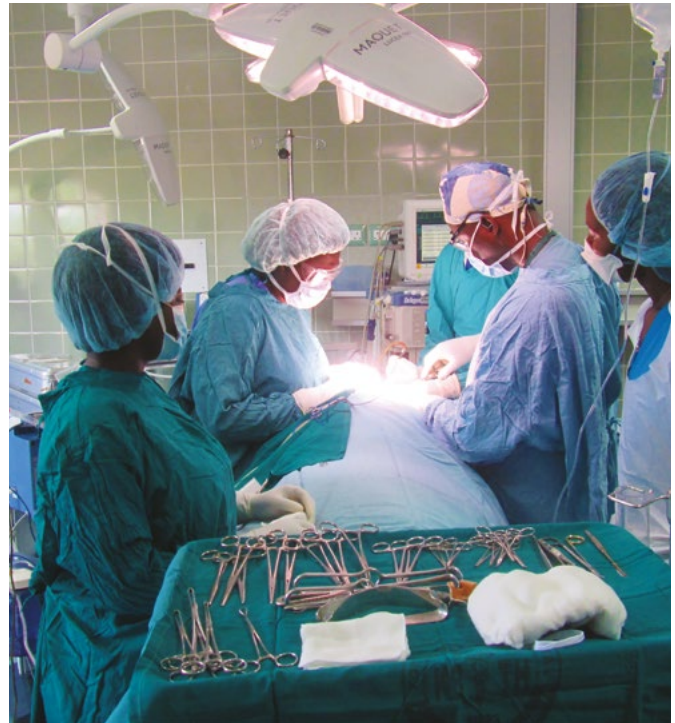
The largest percentage of injury occurred in 2-3 year – olds (50%) with no significant difference between boys and girls. Uncomplicated fractures (88%) were the most common type of injury. This included enamel fracture (68%), and enamel – dentine fracture 22% followed by tooth avulsion 12%. Maxillary central incisor (88%) was the tooth most traumatized, without differences between the right and left. Fall (84%) was the commonest cause of dental trauma with 72% of the injuries occurring at home. The project was partially funded by the School of Medicine and Dentistry and was led by Professor Comfort Soforowa-Adekoya.



DEPARTMENT OF ORAL AND MAXILLOFACIAL SURGERY

Childhood Oral and Maxillofacial Cancer in Ghana

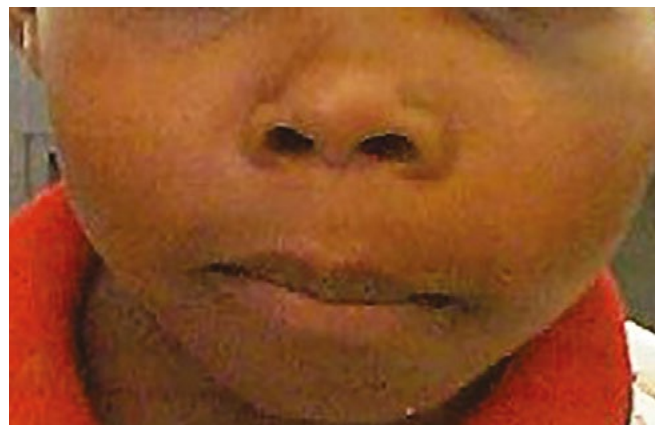
The aim of Professor Grace Parkins' research was to study the distribution of malignant tumours in children seen in the Department of Oral and Maxillofacial Surgery. The study investigated the demographics and sought to identify the most common childhood malignant tumours. This is to aid in the early diagnosis and subsequently identify early management methods. The study found that Burkitt's Lymphoma is the most common malignant maxillofacial tumour found in Ghanaian children, which is commonly treated by chemotherapy. Other malignancies are Non-Hodgkin's Lymphoma, Rhabdomyosarcoma, Squamous cell carcinoma and osteogenic sarcoma - which are rare. Some of these are treated by surgery with adjuvant chemotherapy and sometimes radiotherapy.



Professor Grace Parkins removing a Malignant tumour from a patient



1. Patient with Burkitt's Lymphoma of left maxilla



2. Same patient after 2 cycles of chemotherapy

A search for Oral Cancer Screening and diagnosis methods in low resourced countries

The aim of this collaborative research, being undertaken by Dr. Francis Mante (University of Pennsylvania School of Dentistry) and Prof. Grace Parkins, (School of Medicine and Dentistry) is to determine the efficacy of two simple and inexpensive screening and follow-up tests that will

improve the early diagnosis of oral cancer. It is anticipated that screening of at risk patients will lead to early diagnosis, treatment and survival of patients. It is further anticipated that successful completion of this investigation will encourage incorporation of these techniques in the training of adjunct healthcare professionals and lead to widespread use of these simple detection methods. The study is funded by the University of Pennsylvania.



Comparative study of efficacy of intravenous Benzyl Penicillin and intravenous Augmentin in the treatment of Ludwig's Angina at Korle-Bu Teaching Hospital



Dr. Matthew Owusu-Boamah examining a patient teeth

The study was to compare the efficacy of treating Ludwig's angina patients with intravenous Benzyl penicillin and intravenous Augmentin. It was also to determine the demographics of Ludwig's angina at Korle Bu Teaching hospital, identify the causes of this serious orofacial

infection, which is being presented by patients. The study was jointly undertaken by Dr. Matthew Owusu-Boamah as the Lead Investigator with Prof. Grace Parkins as the co-investigator.

Nutrient intakes and oral health status of adults (50 years and above) attending Dental School clinic and Korlebu MFU - Healthy Ageing Study

This study aims to investigate nutrient intake of adults and their association with oral conditions in adults 50 years and above. Preliminary results shows that over 50% of the adults did not meet their nutrient intake and their oral challenges seems to be having an effect on their choice of diet and ability to meet their nutrient requirements. The researchers of this study are Dr. Thomas Akuetteh Ndanu (Principal Investigator) and Sharon Kerr-Rabbles, Frank Ekow Hayford and Dr. Matilda Asante, from the Department of Dietetics, as co-investigators.

Child Obesity and Oral health study

This study was funded by the International Development Research Centre (IDRC) of Canada. The research focused on determining the risk of childhood obesity to oral diseases especially caries and periodontal infections. It investigated the role of Diet and oral health practices among private and public schools in Accra. It also investigates the oral bacterial infections associated with caries and gum diseases. The study was conducted by Dr Thomas Akuetteh Ndanu (Principal Investigator) and Prof. Anna Lartey and Dr. Gloria Otoo both of the Department of Nutrition and Food Science, Dr. Josephine Sackeyfio of the Department of Community and Preventive Dentistry and Dr. Richmond Aryeetey of the School of Public Health.



Effect of commonly used local oral cleansing agents on the progression of periodontal disease.

Dr. Francis Kwamin of University of Ghana and Dr. Anders Johansson, University of Umea conducted the study to ascertain the effect of extracts of selected chewing sticks on the pathogenesis and progression of periodontal disease. The study has shown the presence of inhibitory agents in chewing sticks. Out of 6 different chewing sticks used locally for oral cleansing, only one showed a strong inhibitory effect on the by-product of *Aggregatibacter actinomycetemcomitans* (Aa), the direct causative agent in progression of periodontal disease. This project was funded by the University of Umea, Sweden.

The Investigators conducted a follow-up study titled *“Developing an antidote to progression of periodontal disease”* to develop an oral cleansing agent from guava extracts in the form of oral rinse or paste. It showed that extracts from Guava efficiently neutralises *Aggregatibacter actinomycetemcomitans* (Aa) leukotoxicity, which may offer a novel therapeutic agent and offer a strategy for prevention and treatment of aggressive form of periodontic induced by infection with the highly leukotoxic JP2 of this bacterium.

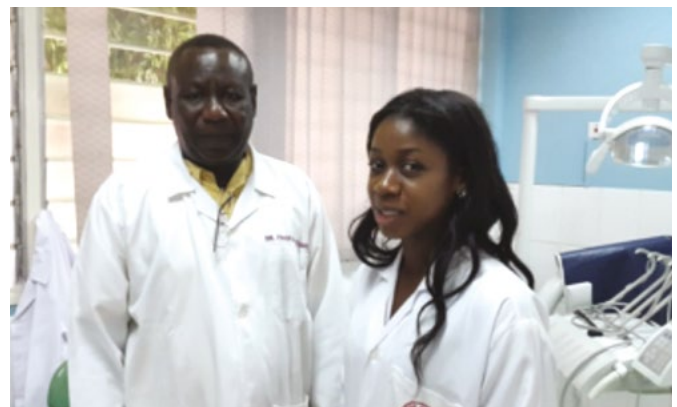
HPV-16 in benign oral mucosal lesion: a possible risk factor for oral mucosal malignancy

Human papillomavirus (HPV) is a sexually transmitted disease and strongly associated with cervical and oropharyngeal carcinomas but may have varying geographical and ethnical susceptibilities. The aim of the study was to determine the presence of the malignant genotypes HPV 16 and 18 in multifocal epithelial hyperplasia (MFEH) lesions seen at the Oral Medicine clinic of the Korle-Bu Teaching Hospital.

Oral mucosal granulomatous biopsies in the defined population seen in our clinics were subjected to molecular studies for the presence of HPV-16, 18. It shows the presence of the indignant HPV genotype in benign MFEH oral lesions. It highlights a possible intra-cellular co-existence between the benign oral lesion and the malignancy inducing virus and strengthens the need for a population based research to understand the mechanism of the association and any possible tendency towards progression to oral malignancy. This self-funded study was conducted by Dr. Francis Kwamin (Principal Investigator) with Dr. Harriet Abbey, Dr. N. O. Nartey and Dr. Richard Harry Asmah of the Department of Medical Laboratory Science as co-investigators.



Project team brainstorming before a session



Dr. Francis Kwamin (left) with a collaborator



Joining Forces Research

Joining Forces was a two-year randomised control trial at a prayer camp in Mamfe in the Eastern Region. The Joining Forces study's main objective was to assess a bundled package of care involving the use of both medication and faith healing, in order to assess whether the introduction of medication brought about a change of attitude amongst staff of the prayer camp towards mental illness. This could serve as a model to be incorporated in other camps through liaisons with the Mental Health Authority and other institutions. The study used clinical assessments and diagnoses, as well as standardised measures like the Brief Psychiatric Rating Scale (BPRS), the Brief Symptom

Inventory (BSI), the Patient Health Questionnaire-9 (PHQ-9), the Lehman Quality of Life Scale, Global Assessment of Functioning (GAF) and the Clinical Global Impression (CGI) scale to assess patient improvement. The Mini International Neuropsychiatric Inventory (MINI) was also used as a screening tool to validate the reliability of the clinical psychiatric diagnoses. Further data was collected on the practice of chaining and forced fasts of patients in the prayer camp. The investigators are Professor Angela Ofori-Atta and Dr. Frank Banning (Pantang Psychiatric Hospital). Funding was received from the University of Ghana Research Fund, with additional support from Enterprise Insurance Company, and Yale University.

Plasma leptin concentration in pregnant Ghanaian women and its relationship with gestational outcome

This prospective study seeks to examine the correlation between leptin concentration and maternal weight changes in pregnancy in Ghanaian women and the association with gestational outcomes. Leptin concentration in relation with excessive weight changes in pregnancy will inform poor nutrition prevention policy among pregnant Ghanaian women. The study is being conducted with colleagues from School of Biomedical and Allied Health Sciences, School of Public Health and the Korle-Bu Teaching Hospital with Dr. Mercy A. Nuamah as Principal Investigator. The Co-Investigators are Professor Samuel A. Obed, Dr. Kwaku Asah-Opoku, Magdalene Torto, and Sophia Kitcher of the Department of Dietherapy, Korle-Bu Teaching Hospital, and Dr. Margaret Atuahene of the School of Public Health. This research is funded with a seed grant from the University of Ghana Research Fund.



Professor Samuel A. Obed & Dr. Mercy A. Nuamah



**Active Management of the third stage of labour:
Uterine Tonus Assessment by Midwife vs. Patient self-
administration(UTAMP) trial**

A randomised controlled trial to determine whether there is any difference in effectiveness of routine uterine tonus assessment when performed by a midwife or self-administered by a patient on the incidence of postpartum haemorrhage.

This study is being conducted in collaboration with Professor Kerstin Klipsteins-Grobusch and Dr. Joyce Browne both of Julius College for Health Sciences and Primary Care, University Medical Center Utrecht, The Netherlands, as collaborators and Dr. Nelson K. R. Damale with Professor Samuel Amenyi Obed as independent expert and lead Investigators.

Prevalence of Post Caesarean Deliveries Adhesion and Complications Observed at Subsequent Caesarean Deliveries at Korle-Bu Teaching Hospital, Accra

This is a University Medical Center, Utrecht, The Netherlands funded project studying the adhesion formation after caesarean section in women requiring operative delivery. The study is ongoing with a pilot study being done in collaboration with the Faculty of

Health, Medicine and Life Science (FHML), Maastricht University, The Netherlands. The Principal Investigators are Dr. Mercy A. Nuamah and Dr Nelson K.R. Damale with Co-Investigators including Professor Samuel A. Obed, Professor Alexander Öry, Professor Kerstin Klipsteins-Grobusch and Dr. Joyce Browne (Julius College for Health Sciences and Primary Care, University Medical Center Utrecht, The Netherlands).

International Pilot Survey of Childhood Glaucoma (IPSOCCG

The research project seeks to provide critical epidemiological and clinical outcome data, which will then inform further research to improve treatment strategies for childhood glaucoma worldwide. The Study involves 34 centres worldwide with two in Africa including Ghana. It is a multicentre retrospective study to determine

the prognostic accuracy of the 7th Edition of TNM staging, and the International Intraocular Retinoblastoma classification (IIRC) stage to predict outcome of patients with retinoblastoma through a web-based retrospective survey between 2001 and 2013. The Childhood Glaucoma Research Network, USA, is funding this study being conducted by Dr. Vera A. Essuman and Dr. S. Akafo.

Ghana Breast Health Study (Korle Bu site)

The goal of the study is to identify factors that predispose to the development of breast cancer among Ghanaian women; identify genetic and other biologic parameters predictive of risk that may interact with other risk factors; assess how these factors vary by clinical and molecular characteristics of the tumors; and assist in building capacity

for future research investigations in Ghana. Professor Joe Clegg-Lamprey, Dr. Kofi Nyarko and Dr. Joel Yarney are the Principal Investigators with Professor R. Gyasi, Dr. Verna Vanderpuye, Dr. N.A Adu-Aryee, Dr. F Dedey, Dr. L Edusei as Co-Investigators. The National Cancer Institute is funding this research.



Ghana Prostate Cancer Patient Cohort

The aim of the study was to evaluate the possibility of following prostate cancer patients in Ghana in order to understand issues related to prostate cancer survival in a West African population, and to compare information gathered from Ghanaian prostate cancer patients with information from African American prostate cancer patients

in the United States. Dr. Ann W. Hsing, Dr. James Brooks, Dr. Edward Yeboah, Dr. James E. Mensah, Professor. Yao Tettey, Professor. Andrew Adjei and Professor Kai Yu are the investigators with funding from the Stanford Cancer Institute.

The International Epidemiologic Database to Evaluate AIDS (IeDEA) West Africa HIV collaboration

This is a multi-centre project being implemented in 8 West African countries, is led by Professor Lorna Awo Renner and funded by the NIH through ADERA (Bordeaux). The primary goal of the project is to measure the effectiveness of combination Anti-Retroviral Therapy (ART) in HIV infected individuals in West Africa in the long term. It also

aims at assessing factors that influence outcomes such as increasing the capacity for delivering ART durably in West Africa and documenting the morbidity burden in HIV infected individuals in care. A total of 2,350 children registered in the clinic in Accra and data these form part of the collaborative database.

Paediatric Bacterial Meningitis Surveillance Project

The Paediatric Bacterial Meningitis Surveillance Project being undertaken by Professor Lorna Awo Renner is a WHO sponsored multi-country surveillance project in sub-Saharan Africa with the Department of Child Health as a

sentinel surveillance site. This is an on-going project which started in 2001 and has documented a significant reduction in bacterial meningitis for children under 5 years of age.

SIOP Africa/PODC Collaborative Wilms Tumour

The Wilms Tumour collaboration is an International Society of Paediatric Oncology (SIOP) and Paediatric Oncology in Developing Countries (PODC) funded project, which started in 2014. The project is an African multi-country study of Wilms Tumour, based on an approved protocol to resource

poor countries. The aim is to improve care and survival of children with Wilms tumour in sub-Saharan Africa by implementing uniform guidelines. The Principal Investigator is Professor Lorna Awo Renner.

Sankofa Paediatric HIV Disclosure Study

The SANKOFA Paediatric HIV Disclosure study is a five year ongoing research collaboration, which started in 2013 with the aim of providing information on a structured, culturally appropriate disclosure intervention that can be integrated into usual care in Ghana and other resource-limited settings to improve the welfare of HIV infected children and their

caregivers. It is expected to develop a novel intervention approach grounded in behavioural theories, which will be useful in facilitating disclosure of HIV status to children by caregivers. Professor Lorna Awo Renner's project is being funded by the NIH through Yale University.



The relationship between depression and glycaemic control among persons with Type 2 diabetes in a tertiary facility in Ghana

Diabetes and depression, which are both chronic, debilitating conditions, contribute substantially to the global disease burden. Estimates from WHO indicate that diabetes will affect more than 552million by 2030, with developing countries including sub-Saharan Africa experiencing a greater proportion of this projected rise. Depression has been shown to be more prevalent among patients with diabetes compared with those without diabetes, in both the clinical setting and in population-based studies. The aim of the study was to determine the association between

depression and glycaemic control among Type 2 diabetes patients attending the Korle Bu Teaching Hospital, Accra, Ghana.

The study is expected to show a high prevalence of depression among type 2 diabetes patients and this will be associated with poor glycaemic control. The investigators are Dr. Josephine Akpalu, Dr. Ernest Yorke, Dr. Kwame Yeboah (Department of Physiology, School of Biomedical and Allied Health Sciences, College of Health Sciences), Dr. Joana Ainooson (Department of Dietetics, School of Biomedical and Allied Health Sciences, College of Health Sciences), Williams Balogun (Endocrinology and Diabetes Unit, University College Hospital, Ibadan).

Prevalence of Steroid-Induced Diabetes in Patients with Haematological Disorders at the Korle Bu Teaching Hospital - a 10 Year Review

Glucocorticoids have played a key role in the management of multiple medical conditions including haematological disorders. This is due to the fact that they reduce inflammation and tissue damage. The use of steroids, however, can be accompanied by a multitude of adverse effects, among which impaired glucose metabolism is common. Patients on steroids have an odds ratio of up to 2.3 for the development of diabetes, which is associated

with increased risk of cardiovascular and microvascular complications. The goal of the research is to determine the prevalence of steroid-induced diabetes among patients with haematological disorders treated with steroid-based regimens at the Korle-Bu Teaching Hospital.

The Investigators are Dr. Yvonne Dei-Adomakoh (Department of Haematology), Dr. Josephine Akpalu and Dr. Yacoba Atiase (Department of Medicine & Therapeutics), and Dr. Alfred Yawson (Department of Community Health, School of Public Health).

The effect of diabetes on stroke pattern and outcome at the Korle Bu Teaching Hospital

Stroke remains one of the most devastating neurological diseases, often causing death or gross physical impairment or disability. Diabetes mellitus (DM) is a well-established independent risk factor for stroke and its prevalence has been estimated to rise by 180% in the sub Saharan African region.

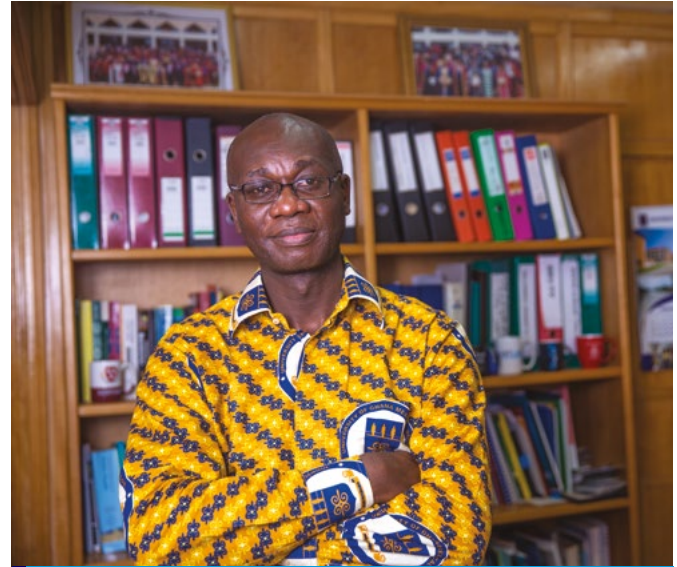
The aim of this ongoing study is to determine the effect of diabetes on the pattern and outcome of stroke among hospitalised patients at the Korle Bu Teaching Hospital. It

is expected that findings from this study will help establish the association between diabetes and stroke outcomes among Ghanaian patients. This will assist in the institution of appropriate management guidelines to deal with any identified determinants of poor stroke outcome. The Principal investigators are Dr Josephine Akpalu and Dr. Albert Akpalu of the Department of Medicine and Therapeutics, School of Medicine and Dentistry, with co-investigators being Dr. Alfred Yawson (Department of Community Health, School of Public Health), Dr. Yacoba Atiase Dr. Patrick Adjei, Dr. Ernest Yorke and Dr. Foster Osei-Poku of the Department of Medicine and Therapeutics, Korle Bu Teaching Hospital.



SCHOOL OF PUBLIC HEALTH

Public health is the foundation of our existence and impacts us all. We have, in recent times, witnessed the ability of infectious diseases such as Ebola to disrupt not only local economies, but also affect us globally. Hence our desire is to continuously impact health and Ghana's health systems through research and training of health professionals all across Africa. The School of Public Health collects, collates and integrates data and evidence to inform public policies. Our staff conduct remarkable multi-disciplinary research, collaborating both locally and internationally. The initiatives detailed below and envisioned hold the assurance of even greater research output in the School of Public Health and our contribution to Ghana's Health system.



Professor Richard Adanu

Dean, School of Public Health

RESEARCH PROJECTS

WHO-TDR Regional Training Centre in the African Region.



Partiicipant at the WHO-TDR Regional Training Centre in the African Region

This is a project being funded by WHO-TDR that seeks to establish the University of Ghana School of Public Health (UGSPH) as a WHO-TDR Regional Training Centre within the AFRO Region, with a specific focus on Implementation Research. With TDR support UGSPH will function as one of the six (6) Regional Training Centres in the TDR network, which is designed to expand and coordinate training courses across multiple countries, leading to improved use of health interventions. For the first period 2015/16 UGSPH is developing a short course on Principles of Implementation Research. In line with this, the project is offering a one month specialised fellowship programme, which provides the opportunity for scholars from various Regional Training Centres (Philippines, Indonesia, Tunisia, Columbia and Kazhastan) to participate in the course development. The Principal Investigator is Dr. Phyllis Dako-Gyeke who is undertaking this project with Professor Richard Adanu, Professor Edwin Afari, Professor Moses Kweku Sakyi Aikins, Dr. Patricia Akweongo, Dr. Francis Anto, Dr. Samuel Sackey, Dr. Justice Nonvignon and Professor Augustine Kwabena Ankomah.



An Mhealth Intervention To Increase Cervical Cancer Screening In Ghana

This study is funded by New York University's School of Medicine, Department of Population Health, and is led by Professor Philip Adongo. The primary objective is to evaluate the effect of an integrated mHealth training for Community Health Nurses on retention of diagnostic cervical cancer screening skills using visual inspection with acetic acid (VIA) plus cervicography. The project has trained Community Health Officers currently engaged in the Ghana Essential Health Intervention Project (GEHIP) to screen women in the Ga East Municipal for cervical cancer using cervicography. Results from this proof of concept intervention will be used to apply for future grants.



Professor Philip Adongo



From Left: Professor Justice Nonvignon, Professor Moses Aikins & Dr. Gneveve Aryeteey

Pragmatically and routinely costing malaria service delivery in the Upper East, Ashanti and Central Regions of Ghana.

Dr. Genevieve Cecilia N. O. Aryeetey and Fabrizio Tediosi are the Principal Investigators for this project with funding from the Bill and Melinda Gates Foundation (B&MG) and the Swiss Tropical and Public Health Institute (Swiss TPH). The project seeks to develop a pragmatic malaria costing guide to be utilised by National Malaria Control Programme (NMCP) and other stakeholders to facilitate budgeting and grant applications to donors such as the Global Fund. The result from this study will be used to inform the feasibility of the guidelines developed for costing malaria service delivery in low and middle-income settings. The co-investigators are Professor Don de Savigny, Professor Moses Kweku Sakyi Aikins, Dr. Justice Nonvignon, Dr Patricia Akweongo, Carol Obure and Nadia Pillai.



Cost of implementation of malaria vaccination programmes in five select sub-Saharan African countries (Burkina Faso, Ghana, Kenya, Mozambique, Tanzania)

With the aim of improving prevention of malaria, GSK Vaccines, in partnership with the Malaria Vaccine Initiative (MVI), has, over the past few decades, been developing the RTS,S/AS01 Plasmodium Falciparum malaria vaccine. Safety, efficacy and immunogenicity of RTS,S/AS01 have been tested (phase III trial) across several sub-Saharan African countries. Following the results of phase III trial, the file for this vaccine has been recently given regulatory approval by the European Medicines Agency (EMA). In order to translate the candidate vaccine into health policy in a context of

competing health problems and of limited financing, an economic evaluation is needed in which incremental costs and health benefits of malaria vaccination are compared with the current preventative strategies.

This research aimed to estimate the cost of implementation of RTS,S malaria vaccination programmes in five sub-Saharan African countries, all with a GAVI status: Burkina Faso, Ghana, Kenya, Mozambique and Tanzania. Dr. Nonvignon was the Principal Investigator for the Ghana study with other PIs from Burkina Faso, Kenya, Mozambique, Tanzania.

Community-based Hypertension Improvement Project (Com-HIP) in Lower Manya Krobo, Ghana.

Com-HIP, funded by the Novartis Foundation in Basel, Switzerland, is a community based programme for hypertension control that includes a public-private partnership. The primary aim of ComHIP is to reduce the burden of hypertension in the Lower Manya Krobo district in the Eastern Region of Ghana and to generate a community-based model of hypertension control that can be scaled up in other regions of Ghana. Dr. Amos Laar is the Local Principal Investigator on this project and Peter Lamptey of London School of Hygiene & Tropical Medicine as the international Principal Investigator. The Co-Investigators are Pablo Perel, Alma Adler, Ulla Griffiths, Adrian Gheorghie (London School of Hygiene & Tropical Medicine), and James Akazili (Navrongo Health Research Center).



Dr. Amos Laar



Housing and Health needs among HIV positive persons in Agomenya, Ghana

The International Development Research Centre (IDRC), Canada, is funding this project with Eric Tenkorang of the Memorial University of Newfoundland, Canada, as the Principal Investigator with Dr. Amos Laar and Dr. Adobea Yaa Owusu (ISSER, University of Ghana) as co-Investigators. The general objective of this project is to examine broadly housing and health needs among HIV+ persons in Agomanya, Ghana. Specifically, they seek to determine the availability of adequate and affordable housing among HIV+ persons in Agomanya, Ghana, as well as examine whether a person's HIV/AIDS serostatus in any way compromises their chances of living in adequate and affordable homes.

Stigma as a barrier to Family Planning among young women in Accra and Kumasi

This is a two year project being undertaken by Dr. Abubakar Manu in collaboration with Professor Richard Adanu, Dr. Kelli Hall (University of Michigan), Professor Vanessa Dalton (University of Michigan) and Dr. Emmanuel Morhe (Kwame Nkrumah University of Science and Technology). This study examined stigma as a barrier to modern contraception and family planning service utilization among young women aged 15-24 years. Findings from the first phase of the project have informed the development of a formal sexual and reproductive health stigma survey for phase two. This Project is funded by the Society for Family Planning, USA.

Intermittent Preventative Treatment (IPT) of malaria in pregnancy: assessing the new implantation strategy in Ghana

The Research Institute for Development (IRD), France, provided funding to Professor Julius Fobil and his team to undertake this research, which seeks to assess the degree of coverage of IPTs in the study sites, determine whether pregnant women are receiving the appropriate SP dosage for their condition, identify the socio-anthropological determinants of IPT both among women and among caregivers, assess the impact of IPT on placental malaria infections and to assess the impact of placental malaria infections on foetal growth and the health of the mothers on IPT. The study's Principal Investigator is Professor Isabella A. Quakyi and co-investigator is Professor Julius Fobil.



Professor Julius Fobil



Nutrition LINKS

The main objective of the project is to improve household economic well-being, gender equity, food security, and nutrition and health of vulnerable populations in the Upper Manya Krobo District (UMKD) of Ghana. The project has received funding for a 5 year period from the Department of Foreign Affairs, Trade and Development, Canada.

There is ongoing district wide capacity building for health, nutrition, agriculture, and education staff; also being trained are local bank and microfinance staff on nutrition and health messages.

The Principal Investigator of the project is Dr. Richmond Aryeetey with Grace Marquis, McGill University; Esi Colecraft, UG; Bridget Aidam, World Vision; Raymond Owusu, World Vision; Shelley Clark, McGill University; Theresa Gyorkos, McGill University; Anna Lartey, UG; Frances Aboud, McGill University as co-investigators.



Dr. Richmond Aryeetey

Understanding the Social, Economic and Behavioural Vulnerability to HIV of People who Inject Drugs (PWID) in Accra/Tema and Cape Coast, Ghana



From Left; Professor Augustine Ankomah, Dr. Abubakar Manu & Professor Richard Adanu

This project, which is led by Professor Richard Adanu, is a formative assessment of activities among people who inject drugs (PWID) in Accra/Tema and Cape Coast.

It is to assess the social, economic and behavioural vulnerability, HIV and STI related risk behaviours, access to HIV prevention and care services, and feasibility of implementation of an Integrated Bio-Behavioural Surveillance Survey. The University of California was contracted by the Centre for Disease Control (CDC) to provide management and technical assistance to the School of Public Health to implement a formative assessment. The assessment focuses on gaps in knowledge about HIV prevention needs of PWIDs with particular focus on the social, economic and behavioural vulnerability to HIV infection. The aim of this research is to collect and analyse rich, in-depth data that can improve the accessibility and effectiveness of programmes that aim to reach PWIDs with important prevention and treatment services.

Other investigators are Professor Augustine Ankomah and Dr. Abubakar Manu of the School of Public Health, as well as Dr. H. Fisher Raymond of the San Francisco Department of Public Health and Silas Quaye of the Centres for Diseases Control and Prevention, Ghana.



Impact Assessment of the Rural Response System to Reduce Violence against Women (VAW) in Ghana

This project is being funded by United Kingdom Government's Department for International Development (DFID) with support from the South African Medical Research Council. This is a three year project (2015 - 2018) led by Professor Richard Adanu with a goal to reduce the prevalence of VAW and promote and protect the rights of women and girls. This will be done by increasing the

visibility of VAW as a social issue, improving the public's knowledge and understanding of its negative impact on the status of women and girls; establish a community based response system for the support and protection of women and provide counselling services as well as work with state agencies to ensure effective response to victims; whilst sharing best practice and key lessons learnt with other stakeholders. Other investigators are Dr. Adolphina A. Addo-Lartey and Dr. Deda Ogum Alangea.

How women are treated during facility-based childbirth: development and validation of measurement tools in three countries

The primary objectives of this WHO funded project is to develop evidence-based definition and identification criteria of disrespect and abuse during childbirth in facilities that can be used globally. It is also to develop and validate tools for measuring disrespect and abuse during childbirth in facilities in Ghana as well as explore individual, provider, institutional and health systems factors that either promote or prevent disrespectful and abusive practices during childbirth in facilities.

This is a two year project led by Professor Richard Adanu with Dr. Joshua Vogel (WHO), Dr. Kwame Adu-Bonsaffoh (Korle-bu Teaching Hospital), Dr. Megan Bohren (WHO) and Dr. Ernest Tei Maya as co-investigators.



Dr. Ernest Tei Maya (left) and Professor Augustine Ankomah

Integrated Assessment of Exposure to Environmental Contaminants at Agbogbloshie Electronic Wastes Dump

The aim of this 5-year project is to conduct a multi-level assessment of exposure to environmental toxins from e-waste recycling/processing activities at Agbogbloshie; one of the largest e-waste sites in Africa. This study will provide important occupational health training for several students in the master's programme in environmental and occupational hygiene/medicine at the School of

Public Health, University of Ghana, McGill University, Canada and a student from the RWTH Aachen University, Germany. Professor Julius Fobil is the Principal Investigator collaborating with Professor Küpper, Professor Felten and Professor Basu. The project is funded by the German and International Development Cooperation (Gesellschaft für Internationale Zusammenarbeit (GIZ).



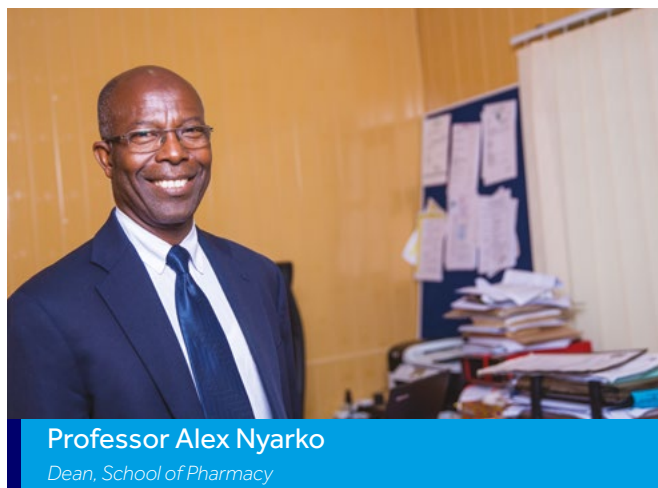
Competence Based Training Short Course in Emergency Preparedness & Management Grant

The project is funded by the Council for Technical & Vocational Education Training (COTVET) with Professor Julius Fobil as the Principal Investigator. The main goal of the project is to strengthen the national capacity for emergency preparedness, containment of pandemics and swift implementation of interventions to minimize the attendant problems of these complex situations and ultimately avert

the huge concomitant financial losses. The project is expected to help upgrade the skills level of middle to top level personnel involved in emergency planning, disaster preparedness and management. This will help prevent and/or reduce the loss of lives and property during emergencies. Collaborators include Dr. Farzana Kapadia of the Global Institute of Public Health of the New York University and Dr. Amos Laar and Dr. Bismark Sarfo, both of the School of Public Health.

SCHOOL OF PHARMACY

The School of Pharmacy aims to train pharmacy graduates who have capabilities in providing competent pharmaceutical care to patients as well as conducting relevant cutting edge research. The School's scientists are engaged in research activities aimed at finding better methods of patient care, discovering new drugs from natural products (plant-based medicine), quality assessment of plant-based medicines, quality assurance as well as monitoring antibiotics for their effectiveness.



Professor Alex Nyarko
Dean, School of Pharmacy



Dr. Patrick Amoateng

RESEARCH PROJECTS

Screening Ghanaian Medicinal Plants for Antipsychotic Properties

This research, funded by the University of Ghana Research Fund aimed to explore the use of medicinal plants for the management of psychosis in Ghana and validate the claims of use of such plants for mental illnesses using experimental models of psychosis. The overall goal was to obtain novel and promising herbs for subsequent antipsychotic drug discovery.

The most potent and promising extract was selected and its antipsychotic activity performed in combination with chlorpromazine, a commonly used antipsychotic drug for synergism or antagonism. The acute, sub-acute and sub-chronic toxicity of the most potent extract is on-going and



would provide information about the toxicity of this extract with promising antipsychotic property. Dr Patrick Amoateng (Principal Investigator) is collaborating with Dr Dorcas

Osei-Safo (Department of Chemistry) and Dr Samuel Adjei (Department of Animal Experimentation, Noguchi Memorial Institute for Medical Research).

Screening of Several Anti-Infectives for Activity Against Mycobacterium Tuberculosis

Dr Grace Lovia Allotey-Babington and Dr Henry Nettey conducted this study with funding from the University of Ghana Research Fund. Various anti-infectives were screened for activity against Mycobacterium smegmatis. Drug samples were obtained by convenient stratified sampling method. For the individual drugs Minimum Inhibitory Concentrations (MIC's) were obtained using the

agar-well plate method. Preliminary analysis showed high effectiveness of carbapenems in inhibiting the growth of M. smegmatis. Carbapenems, though not indicated for TB treatment, has a potential of playing a significant role in the treatment of tuberculosis. Also the drug combinations which showed synergism, especially those that involved the macrolide antibiotics, should further be investigated. These results have to be confirmed by in vivo clinical studies to define their roles in tuberculosis treatment.

SCHOOL OF NURSING

Research at the School of Nursing is designed to improve the quality of health service delivery and outcomes for patients through studies concerned with individual, family and community health needs. Further, the various research studies are expected to advance nursing knowledge and contribute to the development of educational course content. The School continues to offer research training to nurses and midwives working across such areas as nursing & Midwifery institutions and hospitals in the country and international students. These projects provide students with extensive training that helps develop them into professional leaders in nursing and midwifery.



Dr. Ernestina Donkor
Dean, School of Nursing



Dr. Lydia Aziato

In the year under review, Dr. Lydia Aziato, Lecturer at the Department of Adult Health, received funding from the University of Ghana Research Fund to conduct a study titled: *'The Role of Religion in Labour Pain Management In Ghana: A Focus on Pentecostal/Charismatic Churches and African Traditional Religion' (on-Going Research)*. The study involves post-partum women, midwives, and traditional birth attendants and it is aimed at understanding the influence of religion in labour pain experience and management. Dr Aziato's study collaborator is Professor Cephas Omenyo of the Department for the Study of Religions and Provost of the College of Education.



COLLEGE OF HUMANITIES

The College of Humanities is home to six schools, three research institutes and five centres of research and has the highest student population of over 10,000. This makes the College an exciting place for diverse research activities. In the 2014/2015 academic year, the various research centres and institutes as well as individual faculty members in schools and departments in the College have undertaken numerous research projects and engaged in research activities. Units of the College also organized seminars, colloquia and conferences in the course of the academic year.

The College Research Board has established an index of research productivity and also placed research publications of Faculty on the College website.

Book Launches

- The College, in partnership with Airtel and Multimedia Limited, launched a book entitled "Changing Perspectives on the Social Sciences in Ghana". The book is edited by Professor Samuel Agyei-Mensah, Professor Joseph Atsu Ayee and Ms Abena Oduro and published by Springer. The book is the first compilation



PROFESSOR SAMUEL AGYEI-MENSAH

PROVOST, COLLEGE OF HUMANITIES

of its kind that brings together discussions of the evolution of scholarship in different branches of the Social Sciences in Ghana.

- The Institute of African Studies (IAS), in collaboration with Sub-Saharan Publishers, launched a book titled "Africa in Contemporary Perspective: A Text book for Undergraduate Students". The book, edited by Professors Takyiwaa Manuh and Esi Sutherland-Addy, covers areas such as Geography, Population and Language; Culture, Social and Political Institutions, and Economy, Livelihoods and Security.

UNIVERSITY OF GHANA BUSINESS SCHOOL (UGBS)

The Research and Conferences Committee of the UGBS in the academic year under review set up the criteria for selecting both the best researcher and the most promising research for awards. The intent was to recognize excellence in academic output, publications and overall contribution to research activities in the School.

The UGBS in April 2015 was accepted into the esteemed membership of the Association to Advance Collegiate Schools of Business (AACSB). This was attained as a result of continuous improvement in areas required by AACSB in its membership attainment assessment. The benefits of membership include, UGBS faculty, staff, and administrators having access to AACSB resources to support and enhance teaching, learning, research and other continuous improvement goals. The admission into the AACSB fold is the strongest indication yet that UGBS is positioning itself



to most effectively contribute to the University of Ghana's vision to become a world class research-intensive university.

The UGBS has also partnered with Yale University to publish a report on "Examining the State of Entrepreneurship and Small Medium Enterprises (SME's) Growth in Ghana and Cote d'Ivoire". The project explores the state of entrepreneurship and SME's growth in West Africa, especially Ghana and Cote d'Ivoire as well as their role in the economic development of these countries.

Conferences, Colloquia and Seminars

The UGBS held its 36th Management Week Celebration under the theme "*Accountability and Corruption: Building Integrity of Ghanaian Public Institutions*". Speakers at the forum included Professor Joshua Abor, Dean of UGBS, His Lordship Justice Yaw Apau, Sole Commissioner, Judgment Debt Commission, Honourable Albert Kan-Dapaah, a former Chairman of the Public Accounts Committee and Professor Duah Agyemang, a former Auditor General.

Professor Yinshan Tang, the Vice Dean of Henley Business School, University of Reading, delivered a presentation on "*Contribution to Knowledge at the PhD Level*" as part of the School's Seminar Series.

Professor Richard Boateng was invited by the Vodafone Group (global) to join a team of seven economists and social scientists across the world to contribute to the 2015 Vodafone Socio-Economic Impact of Mobile (SIM) Report (16th Edition), due for global launch in 2016. The theme for the 2015 Vodafone report is "Inequality and Access to Communications". The invitation includes a grant of GBP11,000 to conduct a research study and contribute a chapter. Professor Boateng's contributing chapter is themed "*Livelihoods through Mobiles – Evidence from Ghanaian Entrepreneurs.*"



Professor Joshua Abor
Dean, Business School



Professor Richard Boateng (Right) interacting with a Mobile Phone Dealer

**Table 18: Research Projects at the Business School**

No	Project Title	Donor	Principal Investigator	Amount
1	Corporate Social Responsibility in the extractive industry of Ghana	Volkswagen Stiftung Foundation	Dr. Mohammed Amidu	EUR 150,000
2	The politics of regional inequalities in sub-Saharan Africa: insights from Ghana and Uganda	Department for International Development/Effective States and Inclusive Development Research Centre (ESID), University of Manchester	Dr. Abdul-Gafaru Abdulai	GBP 77,850
3	The Political settlements and health service delivery in Ghana	Department for International Development /Effective States and Inclusive Development Research Centre (ESID), University of Manchester, UK	Dr. Abdul-Gafaru Abdulai	GBP 30,060
4	The Political economy of mining and development in Ghana	Department for International Development /Effective States and Inclusive Development Research Centre (ESID), University of Manchester, UK	Dr. Abdul-Gafaru Abdulai	GBP 14,140
5	Financial Sector Reform and Access to Credit: The Role of Macroeconomic Instability	African Development Bank and the Canadian Government	Dr. Godfred A. Bokpin	USD 5,000
6	Cost of Fiscal Indiscipline in Ghana	African Development Bank and the Canadian Government	Dr. Godfred A. Bokpin of University of Ghana and Dr. Isshaq, Zangina of University of Cape Coast	USD 5,000
7	Centre for Sustainability and Enterprise Development	DANIDA (Danish International Development Agency)	Professor Robert E. Hinson	USD 97,006.56

SCHOOL OF ARTS

The School of Arts encompasses four closely interrelated academic departments, the Department of Archaeology and Heritage Studies, the Department of History, the Department of Philosophy and Classics, and the Department for the Study of Religions. Collectively these departments study and interrogate the foundations and development of human behaviour and knowledge creation and provide intellectual frameworks for scientific research, teaching, learning, and development action.

The school therefore promotes innovative teaching strategies that involve community-based experiential learning activities to facilitate learning and to bring the best out of students. It also fosters cutting-edge collaborative



Professor Kodzo Gavua
Dean, School of Arts

research, the results of which are expected to not only satisfy academic and intellectual interests, but also foster development action locally and internationally.



FIELD SCHOOLS AT ARCHAEOLOGICAL SITES

As part of the regular annual academic programme of the Department of Archaeology and Heritage Studies, six (6) Field Schools were conducted from January 5 to 16, 2015 at the sites of Dodowa, Abonse, Akuse, Dixcove, Ho, and Kpaliworgu. The Field Schools were directed by Mr. David Akwasi Mensah Abrampah, Professor James Boachie-Ansah, Professor Kodzo Gavua, Mr. Fritz Biveridge, Dr. Wazi Apoh and Professor Benjamin Kankpeyeng, respectively. The overall objective of these Field Schools was to provide practical training for students on archaeological and ethnographic data collection while generating data for Faculty to document and interpret the past.

Archaeological and Ethnographic Investigation of German Colonial Sites at Ho and Kete-Krachi in Ghana as well as Misahohe, Bassar and Sansanne Mango in the Republic of Togo.

Series of archaeological excavations were conducted at German colonial sites at Ho and Kete-Krachi in Ghana and Misahohe, Bassar and Sansanne Mango in the Republic of Togo from February to July 2015. This postdoctoral research project directed by Dr Wazi Apoh, a Senior Lecturer at the Department of Archaeology, University of Ghana, Legon is entitled *"The Archaeology of German Colonial Heritages in Ghana and Togo: Repackaging Shared*



Archaeological excavation in progress at the Kete-Krachi German colonial site

Relics for Strategic Ghana-Togo-German Partnership in Development." It is being sponsored by the Volkswagen Foundation of Germany and also under the auspices of the University of Hanover (Faculty of Philosophy, Department of History, African History), and within the framework of the Volkswagen(VW) Foundation's - *"Humanities in Sub-Saharan Africa and North Africa"* Fellowship Programme.

This project is also in partnership with the University of Lome, and the Directrice du Patrimoine Culturel headed by Madame Lucie Tidjougouna of Togo.

Archaeology of Cross-Cultural Interaction at Amedeka

The research at Amedeka and Akuse in the Eastern Region of Ghana involved a preliminary study in January 2015 of the legacy of cross-cultural interaction. Activities included a reconnaissance survey and excavation of the site of a warehouse that was once operated by the United African Company (UAC), measurement and documentation of the remains of a sail boat and a steam-engine boat that were found in the Volta River of the coast of the first inland port to be created along the Volta River at Amedeka. In addition to the boat remains, relics found at the site included a large number local and foreign ceramics, and bottles fragments



Students and field assistants measuring the remains of a steam-engine boat found in the Volta River at Amedeka.



of various makes. The large quantity and variability of materials found attest to the intensity of commercial activity at the port among peoples of different cultural and geographical backgrounds. Ethnographic research was also undertaken to generate qualitative information

that would aid the explanation and interpretation of the archaeological finds. Three graduate students and twenty four undergraduate students participated in the project as part of their practical training.

Consequences of Artisanal Small-Scale (Galamsey) Mining in Akyem Abuakwa

Dr. Emmanuel Ofori-Mensah Ababio of the Department of History has been researching on galamsey activities in Adanse and Akyem Abuakwa traditional areas in Ghana. The people of this area have for centuries worked and mined gold, which was a source of gold to the European market before and during the colonial period. The advent of colonial rule in 1874 and the introduction of industrial mining in both states in the late nineteenth century enabled European mining companies to gain control over the gold and diamond mining industries in the former Gold Coast. That notwithstanding, industrial mining could not supplant the activities of indigenous miners in the kingdom. Now called artisanal or small scale mining (known locally as galamsey), indigenous mining has retained its vigor and survived against the odds.

The findings may help us to deal with the problems associated with 'galamsey' mining in contemporary Ghana or the lessons learnt will assist policy makers to make informed decisions regarding mining in rural communities elsewhere in Ghana. Dissemination workshops will be organised and key stakeholders such as traditional authorities, ministry of mines and non-governmental organisations will be invited to share the findings at the end of the study.



Dr. Emmanuel Ofori-Mensah Ababio



Galamsey site at Apapam near Kyebi



Dr. Rose Mary Amenga-Etego & Dr. George Ossom-Batsa

Envisioning the End: Heaven or the Ancestral Home

One existential concern of many Africans is what happens to the human person after death. Such pre-occupation is manifested and lived in various forms, especially in rituals that accompany funerals, whether traditional or Christian. The study, *Envisioning the End: Heaven or the Ancestral*

Home, seeks to examine how the Ghanaian Christian's perception of immortality influences behaviour and interpersonal relationship in public space. The study's lead investigator is Dr George Ossom-Batsa, Senior Lecturer at the Department for the Study of Religions. Dr. Rose Mary Amenga-Etego, Lecturer at the Department, is a study collaborator.

Despite the Church's detailed and elaborate ritual provision for funerals, Ghanaian Christians continue to incorporate some aspects of traditional funeral rites. Within this context the study will specifically ask the question: 'where do people envisage as the resting place of the soul (siya in Nankani and susuma in Krobo) of the deceased person when these two contextually different rituals are performed simultaneously: to the Christian heaven or the traditional ancestral world?' Two ethnic communities from the two extreme corridors of the country have been identified as the focal points for the study. These ethnic groups (study communities) are the Nankani, of the Kasena-Nankani District in the Upper East Region and the Krobos, of the Lower Manya Krobo Municipality in the Eastern Region.

SCHOOL OF SOCIAL SCIENCES

The School of Social Sciences is committed to building capacity for teaching and research in socio-cultural, economic, political and psychological issues that impact on national development. In the School of Social Sciences, we have recognized the need for balancing theory and practice and our ultimate goal is to engage in cutting edge research to inform policy development. We also recognize the importance of research partnerships and faculty members continued to explore these partnerships both locally and internationally in the year under review.

Ghana Social Sciences Journal

The School continues to publish the Ghana Social Sciences Journal, twice a year, in June and December.



Professor Charity Akotia
Dean, School of Social Science



The visibility of the journal has increased significantly in the past one year. In 2015, the journal was listed in Pro Quest database. Currently, we are working to enlist the journal in the African Journals Online and the Social Science Citations Index. The journal is also currently distributed to several English language libraries including the National Library of Ghana, the Library of Congress, USA, the Canadian National Library, the British National Library and the Australian

National Library.

Research Grants

During the period under review, a number of our Faculty won research grants from the University of Ghana Research Fund (UGRF) as well as from international funding organisations.

The table below presents a selection of awarded grants.

Table 19: Research Projects at the School of Social Sciences

Project Title	Department	Donor	Principal Investigator	Amount
Increase the Effectiveness of Ghana's Parliament	Political Science	Open Society Initiative for West Africa (source of funds)	Professor Essuman-Johnson	USD19,015
'Poverty I depart you: Today I be Moneyman'. Impact of neoliberal individualism on relationship models, patterns of care, and allocation of resources in Ghana	Psychology	Volkswagen Foundation	Dr. Annabella Opere-Henaku	EUR127,900
Remote Sensing and Geographic and Information Systems laboratory	Geography and Resource Development	Council for Technical and Vocational Education and Training	Dr. Alex Barimah Owusu	GHS2.7 million
Non-Wage Benefits, Union 'Facilitation Effect' and Labour Market Outcomes in Ghana	Department of Economics	Partnership for Economic Policy (PEP) Network	Dr. Nkechi Srodah Owoo	USD22,000
Regulatory Capital and its Effect on Credit Growth, Non-Performing Loans and Bank Efficiency: Evidence from Ghana	Department of Economics	International Growth Centre (IGC)	Dr Eric Osei-Assibey	GBP10,000



Non-Wage Benefits, Union 'Facilitation Effect' and Labour Market Outcomes in Ghana

Dr. (Mrs.) Nkechi Srodah Owoo is a lecturer at the Department of Economics and the Principal Investigator in a research titled "Non-Wage Benefits, Union 'Facilitation Effect' and Labour Market Outcomes in Ghana". This research is being conducted with two collaborators, Dr. Monica Puoma Lambon-Quayefio (Department of Economics) and Mr. Samuel Manu (Institute of Economic Affairs (IEA)).

Dr. (Mrs.) Nkechi Srodah Owoo



The steady rise in the number of dual-earner households in Ghana makes it imperative to promote family-friendly policies that maintain a good balance between work and family. These employment policies do not only enhance the quality of created jobs, but also help to reduce the inherent incompatibilities between family and work, and ensure the continuation in labour market participation, especially by women. Additionally, the recent National Employment Policy for Ghana is made up of four main policy components, one of which is the improvement of the quality of jobs among those who are employed in the country, particularly among vulnerable groups like women.

The objectives of the study are to:

1. Investigates the effect of non-wage benefits on labour market outcomes among men and women formal-sector workers in Ghana.

2. Examine the determinants of non-wage benefits in workplaces, with particular emphasis on the contribution of unions.

Preliminary findings indicate that women have less access to non-wage benefits, compared to men, and also have shorter job tenure and lower monthly income. Furthermore the result suggests that increased access to non-wage benefits appears to reduce discrepancies between job tenure among men and women, and is also positively associated with earnings potentials among women. Additionally, unions also play an important role in workers' reported non-wage benefit entitlements in various workplaces, indicating some early evidence of facilitation effects.

The research is funded by the Partnership for Economic Policy (PEP) Network. The grant amount is USD 22, 000 and the project is expected to be completed in June, 2016.

Regulatory Capital and its Effect on Credit Growth, Non-Performing Loans and Bank Efficiency: Evidence from Ghana.



Dr. Eric Osei-Assibey

Dr Eric Osei-Assibey, a Senior Lecturer at the Department of Economics has been investigating the influence of regulatory capital or the minimum capital requirements on bank specific outcomes such as credit supply, interest rate

spread (as a measure of efficiency) and non-performing loans. The collaborator is Joseph Kwadwo Asenso of the Ministry of Finance, Ghana.

The Bank of Ghana has in recent times adjusted upwards the commercial bank's minimum capital requirement or the regulatory capital on a number of occasions, which have led to a substantial increase in banks stated capital. While this increase is expected to ensure the safety and soundness of the banking industry, there is also growing evidence to suggest that raising minimum capital is costly to banks, particularly in developing countries, and the cost of holding capital affects loan prices and banking efficiency. Together the two researchers modelled a system of equations that allow them to apply the system GMM (Gaussian Mixture Model) approach and estimate the equations, while controlling for specific bank level, industry and macroeconomic variables.

The investigation reveals a positive relationship between net minimum capital ratio and the net interest margin. Although this is in contrast with the study expectations, the result



suggests that a high net minimum capital requirement would widen the spread between the lending and saving rates. A plausible reason could be that as the cost of raising

capital is high in the country, banks are compelled to charge high lending rates in order to make high enough returns for their equity holders.

Using Remote Sensing and Geographic Information Systems in Research and Innovation

The Remote Sensing and Geographic and Information Systems (RS/GIS) Laboratory at University of Ghana has made great strides in its vision to become a world-class geospatial Information Science Laboratory. Dr. Alex Barimah Owusu, a Senior Lecturer at the Department of Geography and Resource Development, together with his team won a grant of GHS2.7 million from the Council for Technical and Vocational Education and Training (COTVET) for a two year term.

The objectives of the study were to upgrade the laboratory to a Geospatial Technology Center to provide capacity building in the application of RS/GIS in emergency response, revenue mobilization and spatial planning. The grant was meant to refurbish the laboratory with new computers, installation of modern RS/GIS software applications, provide various trainings and to enhance research in the areas of land use and land cover change and climate vulnerability, agricultural and rural development, land degradation and its implications for food security, crime and safety and GIS for politics and election.



Dr. Alex Barimah Owusu

The COTVET grant has made it possible for the RS/GIS Lab to train over 500 people from Emergency Response and Revenue Mobilizing Agencies such as Ghana Armed Forces, Ghana Fire Service, Ghana Immigration Service, Ghana Ambulance, Ghana Police Service, National Disaster Management Organization (NADMO) and selected Revenue officers and Planners from about 100 District Assemblies.



A group picture of Ghana Armed Forces and Ghana National Fire Service at a GIS Training





E-waste Processing, Health and Food Security at Agboglobhie Market in Accra, Ghana

The study examines the challenges policy makers face with respect to efficiently managing e-waste and its impacts on health, food security, and the environment. The lead researcher in the “E-waste Processing, Health and Food Security at Agboglobhie Market in Accra, Ghana” is Professor Martin Oteng-Ababio of the Department of Geography and Resource Development. Professor George Owusu and Dr. Mary Anti Chama of Institute of Statistical, Social and Economic Research (ISSER) and Department of Chemistry respectively are the collaborators. The study also focuses on finding ways to reconcile broader issues of environmental, economic, and social justice such as access to livelihoods and the right to healthy working conditions a

clean environment and wholesome food.

This research is in progress and it is expected that the outcome of the study will provide epidemiological baseline information for policy makers and future researchers on the extent of food, health and environment contamination associated with e-waste processing in Ghana. It will also provide policy briefs for policy makers in their bid to fashion out appropriate e-waste management mechanisms and regulations.

This research is being funded by University of Ghana Research Fund and the total amount involved is GHS79,994.

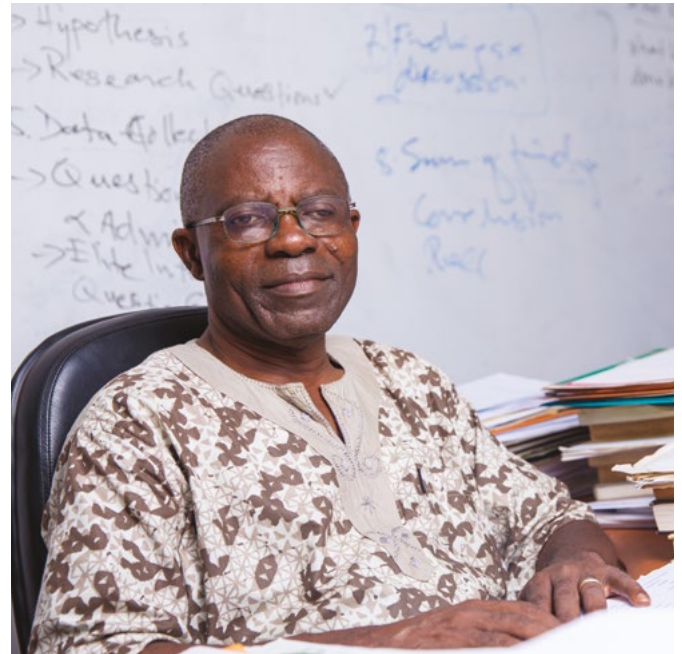
Table 20: List of Researchers & Assignments for CECAR-AFRICA

Output / Activities	Person in Charge	Specialisation
Building meteorological data base	Dr. Kwadwo Owusu	Weather and Climate
Building land utilization and soil distribution data base	Professor M.K. Abekoe (& Dr. Owusu Barima)	Soil Chemistry GIS
Building agricultural and management data base	Dr. Kwabena Awere Gyekye (& Mr. George Owusu)	Landscape ecology/geomorphology; Hydrology, System Analysis and GIS
Integrating above three data base by GIS	Dr. Owusu Barima	GIS
Building regional climate prediction model and prediction by the model	Mr. George Owusu (& Mr. Emmanuel Tachie-Obeng, Professor Oteng Ababio)	Hydrology, System Analysis and GIS; Climate modelling; Disaster Management
Assessment of climate change impact on agro ecosystem utilization.	Dr. Emmanuel Attua (& Dr. Adelina Mensah, Professor Martin Oteng Ababio)	Biogeography; Hydrology and water management; Disaster Management
Assessment of land utilization, soil distribution and climate change by GIS	Dr. Kwabena. Awere Gyekye(& Mr. George Owusu)	Landscape ecology/geomorphology; Hydrology, System Analysis and GIS
Making agrosystem valuation map based on 1-7	Dr. Gilbert. Yiran (& Dr. Emmanuel Attua, Dr. Owusu Barima)	Cartography and GIS Biogeography GIS
Making options of adaptive agricultural production management to climate change	Professor Edwin Gyasi (& Team)	Agricultural Land Management & Participatory Rural Development



Increasing the Effectiveness of the Ghana Parliament

The Ghana parliament has proved largely ineffective in influencing democratic governance functions of the Executive. The challenges include the parliament's lack of financial autonomy and the hybrid nature of the executive. Professor Abecku Essuman-Johnson has received USD19,500 from the Open Society Initiative for West Africa (OSIWA) to study the areas of parliamentary ineffectiveness in Ghana's democratic governance and propose ways to deal with the problems. The study is in progress and it is expected to produce policy insights to improve the effectiveness of Ghana's parliament.



Professor Abecku Essuman-Johnson



Dr. Ransford Edward Van Gyampo

Winner-Takes-All Politics In Ghana

Dr. Ransford Edward Van Gyampo, a Senior Lecturer at the Department of Political Science, is conducting a study titled; Winner-Takes-All Politics in Ghana. This project is jointly funded by Danish International Development

Agency (DANIDA), Institute of Economic Affairs (IEA) and Netherlands Institute of Multiparty Democracy (NIMD).

Ghana's 1992 Constitution prescribed an arrangement for competition which leans on Winner-Takes-All (WTA) as a formula for the selection of leaders. But the WTA is not merely an electoral formula for determining winners in elections. It is also a political method for facilitating the evaluative inclusion and exclusion of individuals, groups and classes of persons, that is, a mechanism for political discrimination, recrimination and exclusion. WTA therefore entails two distinct but interrelated elements, namely: "A single winner plurality voting system for majoritarian rule" and "State capture" or the partisan monopolization of state resources, facilities and opportunities, as well as the exclusion of political opponents from national governance. The objective of the project was to interrogate the key issues and manifestations of WTA politics in Ghana with a view to proposing practical solutions and policy recommendations that deals with the polarizing effects of the phenomenon.



'Poverty, I Depart You: Today I Be Moneyman' Impact of neoliberal individualism on relationship models, patterns of care, and allocation of resources in Ghana



Dr. Annabella Osei-Tutu

Everyday life in many Ghanaian settings affords an experience of embeddedness in social and material context. This is partly because the social, cultural, and economic realities in Ghana support an embedded and interdependent way of living. However, processes of globalization are transforming the material, social, religious, and interpersonal influences of everyday life in Ghana. Materially, there is an ever increasing demand for western consumer goods, the possession of which is deemed a sign

of success. At the same time, there is a widening inequality gap and there are concerns that current economic benefits are not being fairly distributed. In addition, there is the globalizing influence of charismatic Christianity. It is argued that certain religious practices, such as those of charismatic Christianity, may drive cultural and social change, and encourage a different experience of self, agency, and relationality. The project explores how practices of charismatic and orthodox churches contribute to changes in cultural, social, and self- experience in Ghana.

The Objectives/aims of the research are as follows;

1. Explore the impact of church participation on conceptions of love, pursuit of success, and moral behaviour
2. Assess impact of church membership on attitudes and decisions regarding distribution of resources, patterns of care, and resolution of conflicting obligations to nuclear family and extended family.

The lead researcher is Dr. Annabella Osei-Tutu, a Lecturer at the Department of Psychology. The project is being funded by the Volkswagen Foundation with a total of EUR 127,900.00. Study collaborators are Dr. Katja Hanke, Jacobs University Bremen, Germany, Professor Vivian Dzokoto, Virginia Commonwealth University, USA and Professor Glenn Adams, University of Kansas, USA.

Gender, Morality and Non-Communicable Diseases: Health Beliefs and Health-Seeking Behaviour among Prayer Groups in Achimota Forest

Hundreds of informal prayer group members gather in Achimota Forest daily, with the notable exception of Sundays, to seek God's help through prayer as they grapple with the vicissitudes of life, including physical ailments. The study is being led by Dr. Michael Perry Kweku Okyerefo a

Senior Lecturer at the Department of Sociology.

The study seeks to:

- i. identify which types of illnesses are the central concern of prayer group members,
- ii. describe the attitudes of prayer group leaders and members towards biomedicine and traditional healers,
- iii. determine what type of care, including care-giver prayer groups, these members first turn to when they are sick, and
- iv. to describe the pathways of care-seeking of members



who are ill, and understand the significance of Achimota Forest as a gathering place for religious expression and healing.

Findings from the study indicate that majority of the prayer group members are female (69.8%). The study takes a keen interest in the role gender plays in the health-seeking behaviour of this cross-section of Ghanaians. Of the prayer group members interviewed, 88.4% reported that they belonged to the “new churches” (Pentecostal-Charismatic churches), while 9.3% belonged to the “old churches” (Catholic, Methodist), making the former a crucial constituency whose religious and health beliefs and practices should be studied. The outcome of the study has been published in *The Journal of the Sociology and Theory of Religion* (JSTR), 3 (<http://sociologia.palencia.uva.es/revista/index.php/religion/index>).



Dr. Michael Perry Kweku Okyerefo

Head, Department of Sociology



Dr. James Dzisah

Innovation, Science and Technology Transfer

Dr. James Dzisah, a Senior Lecturer of the Department is working with other independent scholars on how to leverage public investments in Higher Education. This multi-disciplinary project is premised on three overarching objectives: to describe the state of knowledge

about international best practices in leveraging public investments in R&D in the higher education sector in order to stimulate innovation; to mobilize knowledge about innovation and innovation systems between the academic and public policy sectors; and to inform dialogue between academic researchers, and science and innovation policy-makers.

Dr. Dzisah’s aim is to explore the impact of knowledge transfer and partnership among the Triple Helix of university-industry-government actors in capacity building and overall sustainable innovation. The study concluded that universities are increasingly fostering new initiatives within and outside the university. Yet, for a university to be fully functional as an entrepreneur, both the university and the stakeholders must transform, adapt and implement organizational mechanisms to establish linkages across institutional spheres. The presence or absence of a public—private system, he argues is a function of the quality of engagement of university-industry-government, and of a particular geographical context, its labour availability and social and physical infrastructure and position within broader systems of innovation.



Experiences of Stigmatization and Discrimination: Insights And Perspectives of Cured Lepers and their Caregivers

Dr. Mavis Dako-Gyeke, Senior Lecturer and Head of the Department of Social Work, received a seed grant of GHS 8,000 from UGRF to conduct research on the topic "Experiences of Stigmatization and Discrimination: Insights and Perspectives of Cured Lepers and their Caregivers". She collaborated with Dr. Emmanuel Asampong, School of Public Health, University of Ghana and Razak Oduro, Department of Human Ecology, University of Alberta, Canada.

Leprosy is a global public health concern given that permanent disabilities could develop if intervention is delayed or improperly implemented. While advances in medical care have reduced the incidence of leprosy in developing countries, including Ghana, its negative effects on victims still linger on indefinitely due to the permanent impairments. Previous studies in Ghana have focused on persons infected and affected by leprosy. However few studies capture their voices. Using a qualitative research methodology, this study explored the experiences of cured lepers and their caregivers regarding stigmatization and discrimination.

Data analysis revealed that cured lepers and their caregivers



Dr. Mavis Dako-Gyeke

had knowledge of stigma and discrimination and these were experienced through enacted, anticipated and internalized stigma mechanisms. Cured lepers were stigmatized and discriminated against by some family members, community members, as well as healthcare professionals. Additionally, employers' unwillingness to employ cured lepers, physical disabilities and lack of formal education and skills among cured lepers featured prominently in participants' discourses regarding employment. The cured lepers were cloistered in the Leprosarium because their families and communities were unwilling to accept them due to supernatural beliefs and explanations associated with the disease.



Dr. Alice Boateng

Tradition versus Modernity: Perspectives on Economic Transformation of Akan Funerals

Dr. Alice Boateng, a Senior Lecturer at the Department of Social Work, has undertaken a research on Akan funerals. The Akan understanding of death is a journey to the ancestors. The dead hover around, protect, and have a hand in the progress of the living. A funeral is therefore one of the most important aspects of Akan cultural and social life. This research was undertaken to explore perspectives of a section of Akans on the economic transformation of funerals. Research questions included:



To what extent has modernity impacted contemporary funeral practices of Akans?; and In what ways do the economic transformation of funerals impact people?

Dr. Alice Boateng has also received a visiting scholarship to George Warren Brown School of Social Work, Washington University in St. Louis, U.S.A. for a one-semester visiting lectureship.

SCHOOL OF LANGUAGES

The Language and Medicine Project



Professor Nana Aba Appiah Amfo

Dean, School of Languages

The Language and Medicine Project, led by Professor Nana Aba Appiah Amfo as Principal Investigator, is funded by UGRF with an amount of GHS 24,998. The project seeks to examine the gap between lay people's conceptualisation and articulation of psychiatric and other medical conditions and that

of medical practitioners. It intends to examine the expression of mental illnesses within Akan communities, focusing on (1) how people with mental health conditions are described and referred to in our everyday interactions; (2) how the expression of mental illnesses is captured in 'traditional wisdom', as espoused in Akan proverbs, idioms and popular sayings; (3) how patients of mental illnesses and other medical conditions (and their caregivers) present their symptoms to medical practitioners; (4) how health workers interpret the patients' presentation of symptoms in mental health and general health care. It is expected that the study will result in the preparation and eventual publication of at least three peer-reviewed journal articles of international repute which address various issues relating to mental and general health discourse. It is hoped that a follow-up study will produce a manual, intended for medical professionals, which addresses communication challenges in our local mental health discourse.

The Codifying Ghanaian English Project

The project is being conducted by Dr. Jemima Anderson of the English Department, as Principal Investigator and was funded by UGRF with an amount of GHS 24,999. The objective of this project is to describe features that characterise the variety of English that is spoken in Ghana. Specifically, the project sought to (1) describe a number

of phonological features which appear to be innovative in Ghanaian English in the sense that they cannot be easily identified in the inner circle varieties of English; (2) identify morphological developments such as lexical innovations and semantic restrictions and extensions that uniquely or strongly characterize the variety of English that is spoken in Ghana; (3) investigate the use of syntactic patterns that are unique to Ghanaian speakers of English and (4)



describe pragmatic features that have been transferred from Ghanaian languages into the English language that is spoken in Ghana. By undertaking this project, the aim was to distinguish acceptable Ghanaian usage from unacceptable usage. The project also seeks to answer questions of standardisation in Ghanaian English, usage in context (i.e., pragmatics, sociolinguistics and discourse analyses) and creative usage (names of places, shop signs, churches). The project results will contribute to the teaching and learning of English in Ghana, as well as to the revision of some policies concerning the teaching and use of English in Ghana.



Dr. Jemima Anderson

THE KOFI AWOONOR INTERNATIONAL SYMPOSIUM



Professor Kofi Anyidoho

Professor Kofi Anyidoho, of the Department of English, initiated the Kofi Awoonor International Symposium, which was organised from September 18th to 19th, 2014. The Symposium was held under the auspices of the Nation and Narration project. It was part of activities organised to mark the 1st anniversary of the death of Kofi Awoonor, a distinguished scholar, poet, novelist,

essayist, dramatist, diplomat, statesman and African cultural icon, who had spent many years in the Department of English as lecturer, supervisor and writer-in residence. The event attracted scholars, researchers, teachers, writers and students from Ghana, Nigeria, Norway and the US.

They included renowned African literature scholars and close associates of Awoonor: Professor Bernth Lindfors, Professor Richard Priebe, Dr Karen Morell, Reverend Professor Asenso, Professor Helen Lauer, Professor Niyi Okunoye, Professor Olufemi Taiwo and Dr Esi Bani. Professor Anyidoho also organised the Kofi Awoonor Roundtable at the 40th African Literature Association conference held at the University of the Witwatersrand, Johannesburg, South Africa from April 9th to 13th, 2014. The five-member panel included two colleagues from the English Department, Dr. Mawuli Adjei and Dr. Prince Adika. A special request was made for the publishing of all the papers by Professor Ernest Emenyonu, editor of African Literature Today, the oldest surviving international journal on African Literature in the world today.



Dr. Evershed Amuzu

Dr. Evershed Amuzu conducted two self funded exploratory studies. The first was titled *"Producing Composite Codeswitching: The Role of the Modularity of Codeswitching"*. It was based on the thesis that language production is modular and this character explains why we see specific

patterns of distribution of English and Ewe morphemes, and not some other patterns, in bilingual possessive constructions in Ewe-English codeswitching spoken in Ghana. The second was titled "A Comparative Study of Bilingual Verb Phrases in Ewe-English and Gengbe-French Codeswitching". This study focused was on a comparison of verb phrases in Ewe-English codeswitching, in Ghana and Gengbe-French codeswitching, spoken in Togo. Applying a Matric Language Frame model to data analysis, preliminary findings suggest that during codeswitching English and French verbs are treated as if they belong to the class of Ewe and Gengbe verbs which share their subcategorisation features.

SCHOOL OF PERFORMING ARTS

In the year under review, The School of Performing Arts continued with its practice of community-based research. Productions were developed using Ghana Education Service approved texts for studies in Senior High Schools by the School's Resident Theatre Group, Abibigromma. The Department of Theatre Arts collaborated with Methodist University College to organise productions at the School's Efua T. Sutherland Drama Studio. Two notable plays 'Emily of The Knights Tale' and 'John the Baptist', which are both adaptations from Geoffrey Chaucer and The New Testament of the Bible directed by Professor Martin Owusu, are worth mentioning.



Professor Kofi Agyekum

Ag. Dean, School of Performing Arts



Creating a Database of Ghanaian Choral Compositions (Collecting, Editing, and Publishing of Choral Works of Selected Ghanaian Composers)

Dr. Joshua Amuah is the Head of the Music Department and is the Principal Investigator on this project. It was funded by the University of Ghana Research Fund through ORID with an amount of GHS 24,959. The project seeks to collect a number of the choral works of the early and selected contemporary Ghanaian composers, edit these works, score the works electronically, and then have the works published for ease of access and posterity. The project will also include research into the life of the composers whose works will be collected and edited, so that there will be biographical data on all the composers. It has been noted that knowledge about the lives of composers and the ideas that occasioned the writing of their works goes a long way to help performers appreciate the works of the composers. Musical analysis of representative works will also be provided for effective understanding of the pieces.



This is intended to fill the large gap of information about Ghanaian composers that is missing from the literature on composers in general. A lot has been written about two very prominent Ghanaian composers: Ephraim Amu and J.H. Kwabena Nketia. The project seeks to document the life and work of several other Ghanaian composers who were contemporaries of these two composers, but who remain virtually unknown.



SCHOOL OF GRADUATE STUDIES

The School of Graduate Studies coordinates over 250 graduate level programmes including regular, part-time, sandwich and *"special programmes"*.

Special Programmes are run in the evenings and at weekends and include courses offered by the University of Ghana Business School, such as the Weekend Master of Business Administration, Master of Arts Degree in Management and Administration, Master of Science in Development Finance and Master of Arts in Marketing Strategy.

Graduate student enrolment continues to grow and in the 2014/2015 academic year, the School attracted 6,368 applicants. 54% of applicants (3,462), gained admission and 76% of students (2642) who gained admission registered for various programmes across the four colleges.



PROFESSOR KWADWO OFORI

Dean, School of Graduate Studies

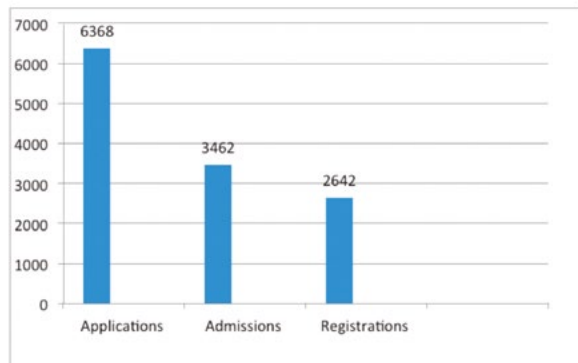


Figure X. 2014/2015 Graduate School Applications, Admissions and Registrations

In 2014/2015 Academic Year, the School graduated 2050 Masters and 81 Doctorate students, the highest doctorate graduate output of the University in one academic year.

ABSTRACTS OF SELECTED PHD DISSERTATIONS PRODUCED ACROSS THREE COLLEGES ARE SHOWCASED BELOW:

Investigating the Thermal Hydraulic Performance of Spacer Grid with Mixing Vanes using STAR-CCM+ and MATRA

Name: Vincent Yao Agbodemegbe (Ph.D)

Department of Nuclear Engineering

Supervisors: Emeritus Prof. E.H.K Akaho, Prof. F.K.A Allotey, Prof. Xu Cheng

Thermal Hydraulic design of spacer grids is a trade-off between optimisation goals that seek to enhance turbulent mixing while restraining pressure drop. In an effort to obtain an optimal commitment between the adverse pressure drop and the needed turbulent mixing in a flow domain containing spacer grid with mixing vanes, nuclear fuel manufacturers such as AREVA, Westinghouse, the KAERI under the auspices of the OECD are involved in continuous assessment and improvement of spacer grid and mixing vane designs. This study was based on assessing a new design of spacer grid with split type mixing vane which was experimented on at KAERI. The objectives were to, determine the extent of prediction of the physical problem by CFD code, STAR-CCM+. This was achieved by comparing simulation results of STAR-CCM+ to experimental data obtained at the KAERI facility. Other objectives were to,

investigate the effect of boundary interface topology on simulation, develop correlations for application in MATRA and investigate the effect of mixing vanes on cross-flow and other thermal hydraulic parameters. The latter was achieved by comparing results from the simulation of spacer grid with split mixing vane to that without mixing vanes. STARCCM+ reasonably predicted the mean flow parameters. Increase in drag coefficient resulted in a more developed flow immediately downstream the spacer grid, in the presence of the mixing vanes than in their absence. The mixing vanes improved flow mixing, flow property distribution and hence thermal hydraulic performance. Enhanced cross-flow across the gaps separating sub-channels were observed in the presence of the mixing vanes. Effect of the spacer grid on pressure drop was significant and proportional to the overall drag coefficient.



Dr. Vincent Yao Agbodemegbe



Youth Livelihoods and Entrepreneurship in the Mobile Telephony Sector in the Greater Accra Metropolitan Area

Name: Dr. Robert Lawrence Afutu-Kotey,
Institute of Statistical Social and Economic Research

Supervisors: Professor George Owusu;
Professor P. W. K. Yankson;
Prof. Katherine Gough

Mobile phones have been widely reported to be transforming Africa and have even been referred to as creating a 'revolution'. In Ghana, liberalisation of the mobile telephony sector has contributed to a dramatic rise in the number of young people who are engaged in various informal support businesses in the sector.

Notwithstanding the research fascination with the potential of the mobile telephony sector and impact of mobile phone usage, few studies have examined the livelihoods of those working in the business. Using a multiple research methodological approach, this study investigates the motivation for business establishment, performance and business implications in the life course of the youth working in the sector.

The findings of this research counter the neoliberal interpretations and assumptions of entrepreneurship and livelihoods on two fronts. First, despite the majority



Dr. Robert Lawrence Afutu-Kotey

of the youth-run businesses being 'informal', they cannot be dismissed as 'necessity' enterprises unworthy of support. On the contrary, many young people have growth aspirations for their businesses and some have established successful businesses that enable them to become financially independent. Second, entrepreneurship and livelihoods within the mobile telephony sector is shown to be reinforcing existing social and economic inequalities rather than enabling young people to escape. The research therefore recommends broader policy choices at the micro and macro levels aimed at improving the livelihoods of the youth.

Development of a Rapid Urine-Based Dipstick Test for Diagnosis of Malaria

Name: Uri Selorm Markakpo
Department of Biological, Environmental and Occupational Health Sciences, School of Public Health

Supervisors: Professor Isabella A. Quakyi,
Professor Kwabena M. Bosompem,
Dr. Mawuli Dzodzomenyo

Malaria eradication has not achieved expected success partly because current techniques for diagnosing the disease are invasive, health facility dependent or not accurate enough.

This study aimed at generating Monoclonal Antibodies (MAb)s for developing a Rapid Malaria Diagnostic urine-based Assay (RUBDA), using Plasmodium infected human urinary antigens.



Plasmodium-infected human urinary (PAgHU) and cultured parasite (CPfAg) antigens were used to generate mouse MAbs. The MAbs were characterized by isotyping, Microplate ELISA and Western blotting Assay (WBA) for antibody class, reactivity to PAgHU and cross-reactivity to non-plasmodial antigens.

In all, 96 MAb clones, with IgM and IgG isotypes, were generated. Of these MAbs, 66/96 (68.8%) reacted to both PAgHU and CPfAg, 30/96 (31.3%) reacted to PAgHU only while none reacted to CPfAg only. One promising MAb (UCP4W7) reacted in WBA, to both PAgHU and CPfAg, but not to Plasmodium negative human urine and blood, Schistosoma haematobium and S. mansoni antigens nor measles and poliomyelitis vaccines.

The study shows that UCP4W7 is promising for diagnosing Plasmodium infection. It also shows that urine is a reliable biomarker source for developing non-invasive malaria diagnostic tests. Finally, the study indicates that SDS-PAGE



Dr. Uri Selorm Markakpo

and MAb-based WBA are explorable in assays for detecting different levels of Plasmodium parasitaemia.



Rev. Dr. Charles Antwi-Boasiako

Association of Endothelial Nitric Oxide Synthase (Enos) Gene Polymorphism with Complications of HBSS in Ghanaian Sickle Cell Disease Patients in Ghanaian Sickle Cell Disease Patients

Name: Rev. Dr. Charles Antwi-Boasiako

(Department of Physiology)

Supervisor: Dr. Daniel Ansong Antwi;
Dr. Batholomew Dzudzor;
Dr. Ivy Ekem

Nitric oxide (NO) is a potent vasodilator synthesized by endothelial nitric oxide synthase (eNOS) enzyme of the vascular endothelial cells. The enzyme plays a significant role in the regulation of vascular homeostasis. The aim was to determine the association between eNOS gene polymorphism, endothelial dysfunction and angiogenesis in Ghanaian HbSS sickle cell disease (SCD) complications like vaso-occlusive crisis, leg ulcers and Priapism. This study confirms reduced plasma NO levels in SCD



and its complications. The VNTR4a/b polymorphism of the eNOS gene is associated with lower levels of NO in SCD patients with and without complications. There is association between eNOS gene polymorphisms (T786C and VNTR) and SCD in Ghanaians. The T786C of the eNOS gene polymorphism is strongly associated with leg ulcer in SCD. There is also endothelial dysfunction in SCD which was severe in the disease complications. Polymorphisms of the eNOS gene are linked to endothelial dysfunction and

angiogenesis in Ghanaian SCD patients with or without complications. This study presents the first report on the association between eNOS gene polymorphism (T786C and VNTR) and SCD complications. Furthermore, the study reports the first data linking eNOS gene polymorphisms, endothelial dysfunction and angiogenesis in SCD patients with or without complications.

The Built Environment and the Risk of Obesity among the Urban Poor in Accra, Ghana

Name: Dr. Fidelia A. A. Dake

Regional Institute for Population Studies

Supervisors: Professor Samuel Nii Arday Codjoe,
Professor Samuel Agyei-Mensah,
Professor Francis Doodo

Beyond individual socio-demographic characteristics and lifestyle behaviours, socio-environmental factors, organisational/institutional factors, national and global policies collectively constitute a “built environment” which directly or indirectly impacts obesity. Using primary data collected at the community and individual levels, this study examined the influence of the built environment on the risk of obesity in three urban poor communities (James Town, Ussher Town and Agboghloshie) in Accra.

At the community level, Geographic Positioning System technology was used to gather data on the features of the built environment while individual level data including socio-demographic characteristics, lifestyle behaviours and anthropometric measures were collected through a survey. Obesity was assessed using body mass index (BMI) calculated from individual weight and height measures. A linear mixed effects model was used to examine the effect of the features of the built environment on BMI controlling for individual and community characteristics.



Dr. Fidelia A. A. Dake

The results demonstrate the existence of a built environment which influences the risk of obesity among the urban poor in Accra. The findings emphasize the need to expand the scope of obesity research in Ghana and Africa at large by examining the contribution of the built environment. Additionally, policies aimed at tackling obesity need to address the built environment.



THE BALME LIBRARY

As part of its responsibilities, the Balme library carried out exhibitions of published works as part of the Inaugural Lectures of Professors. Exhibitions showcase the published works of the Professors and how these have impacted the wider society. During the year under review, the exhibition of the published works of Professor Richard M.K. Adanu and Professor Alex B. Asiedu were curated in the week leading to their respective inaugural lectures. Professor Richard Adanu of the School of Public Health of the College of Health Sciences showcased numerous book chapters, conference papers, journal articles and videos on women's reproductive health, relating same to obesity, hypertension and other non-communicable diseases. Professor Alex Asiedu, of the Department of Geography and Resource Development, presented journal articles, conference papers, book chapters that have contributed to Tourism Studies, tourism and planning in both Ghana and beyond.

The Ghana-Korea Information Access Centre (IAC) Equipped with seminar rooms, an internet lounge video –

conferencing facilities and a training laboratory, the Ghana-Korea Information Access Centre (IAC) was set up by the Korean Government to improve on IT equipment for use by the University community.



PROFESSOR ELLIS BADU

University Librarian



The Vice Chancellor with the Korean representative at the signing of the MOU

As part of the Korea Government's efforts to maintain the IAC to provide better services to users, the University of Ghana and the National Information Society Agency of the Republic of South Korea (NIA) signed a Memorandum of Understanding (MOU) on 20th May, 2015 to renovate the IAC. This will involve the upgrading of IT equipment and interior decoration and further sustain the co-operation between the two institutions for the next four years.

Digitisation and Institutional Repository

During the 2014-2015 academic year, an additional 370 theses were digitized to be uploaded for use by faculty and students.

The Institutional Repository Management

Committee (IRMC) has been constituted to determine content policies, policies for the dissemination of content, standards and related requirements for the smooth operations of the Institutional Repository in line with the University of Ghana Strategic Plan.

Acquisitions

The total collection size of the Balme Library to date is 410,555. The Acquisitions Unit continue to increase its new titles to cater for the newly introduced PhD programmes as well as new programmes to be introduced in the newly established Colleges. The unit has also liaised with the College of Education to process new titles.



Vice-Chancellor in a group picture UG and Korean representatives at the signing of an MOU.

University of Ghana has access to a total of 4000 e-books from MyiLibrary. This is in addition to the 2000 from Elsevier which already existed. The Balme Library hopes to increase the acquisitions of e-books gradually, following best practices in modern academic libraries.

Electronic Resources

The Balme Library subscribes to a variety of online databases which promote research, teaching and learning. During the year, patronage of the Andrew Carnegie Research Commons have increased appreciably.

With cooperation from management of the University of Ghana and the University of Ghana Computing System (UGCS), 5355 users have off-campus access to current databases, with graduate students' constituting about 48%.

Within the same period, users were also granted trial access to the Ebsco Discovery Service and the American Society for Microbiology.

The Electronic Resources Unit of the Balme Library has successfully solicited for articles on behalf of researchers from external sources. Within the 2014-2015 academic year, 88 (66.7%) requests out of the 132 that were made by the Unit were fulfilled.



RESEARCH DEVELOPMENT OFFICERS

The primary responsibility of Research Development Officers are to: facilitate research within the various Colleges, Departments, Schools, Research Institutes and Centres, build portfolios of funded research projects, assist in generating research funds and also contribute to research productivity



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College of Humanities



MRS. B.S. BINEY-NYAMEKYE
College of Humanities



MR. FIDELIS ANUMU
EPRB Administrator / College of Health Sciences



MR. JACOB ZUTAH
College of Education



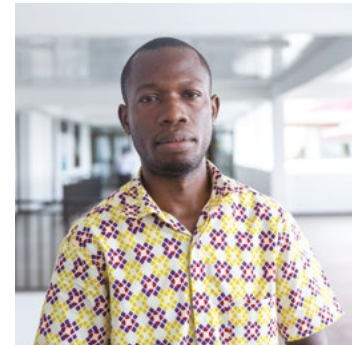
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www.axxiomglobal.com

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