

# Africa Centre of Excellence

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

**ACE 002**

**Revised Implementation Plan**

**2014 – 2018**

**(August 2014)**

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## LIST OF ABBREVIATIONS

ASCB	-	American Society for Cell Biology
BCMB	-	Department of Biochemistry, Cell and Molecular Biology
CMRI	-	Centre MURAZ Research Institute
CNRFP	-	Centre National de Recherche et de Formation sur le Paludisme
CSRS	-	Center Suisse de Recherche Scientifique
KHRC	-	Kintampo Health Research Center
LSHTM	-	London School of Hygiene and Tropical Medicine
MRC	-	Medical Research Council
MRTC	-	Malaria Research and Training Center
NHRC	-	Navrongo Health Research Center
NMIMR	-	Noguchi Memorial Institute for Medical Research
ORID	-	Office of Research Innovation and Development
UC	-	University of Cambridge
UGCS	-	University of Ghana Computing Systems
WACCBIP	-	West African Center for Cell Biology of Infectious Pathogens

## 1. BRIEF NARRATIVE SUMMARY (max 2pages)

Focus on motivation, objectives, methodology, results and partnerships. Must include a section on important changes made. *(Please remember to use the reviewers' feedback as applicable)*

### **Background**

Infectious Diseases such as malaria, HIV and Tuberculosis contribute the largest proportion of morbidity and mortality in the West African sub-region. Although concerted global efforts have led to a significant reduction in the burden of infectious diseases, the lack of vaccines, the threat of drug-resistance as well as emerging pathogens have ensured that infectious pathogens still remain a major public health challenge across the region. This challenge calls for increased and sustained efforts to train the manpower required to confront the menace and apply research towards the development of new approaches for vaccines, drugs and diagnostics in the public and private sectors. The West African Center for Cell Biology of Infectious Pathogens (WACCBIP) at the University of Ghana was formed in response to the World Bank's African Centers of Excellence (ACE) initiative. The mission of WACCBIP is to improve diagnosis, prevention and control of infectious diseases in sub-Saharan Africa by providing advanced level training and research excellence on the cell and molecular biology of infectious pathogens. The Center will provide Masters, PhD and Post-doctoral level training, and conduct applied research focused on cell and molecular biology of major diseases such as malaria and tuberculosis. WACCBIP seeks to build on existing collaborations between the Department of Biochemistry, Cell and Molecular Biology (BCMB), the Noguchi Memorial Institute for Medical Research (NMIMR), and the University of Ghana Computing Systems (UGCS), and an invaluable relationship with a major international partner in the American Society for Cell Biology (ASCB). These relationships were built through organizing the West African Regional Workshops on Cell Biology of Infectious Pathogens at the Department of Biochemistry, Cell and Molecular, University of Ghana, as part of the ASCB Africa Initiative, which has been successful in training scientists using its vast network of international infectious disease experts. This Center aims to serve as the central hub providing a permanent organizational presence in West Africa that is required to train experts in cell biology and infectious pathogens. To accomplish this we will extend the reach of the center through short courses and workshops to other institutions in the sub-region, and expanded masters and PhD programs. The activities of WACCBIP are focused on three main areas: training, applied research and cell biology core services.

### **Training**

The Training component of the ACE will target three populations of trainees. The first is 2-4 week long workshops/short courses targeting professionals in the health delivery sector, including physicians, pharmacists, and senior laboratory personnel, to improve their knowledge of disease pathogenesis and modern methods of diagnosis and treatment. The second is medium-term programs (3-6 month long applied research internships) for trainee biomedical scientists and hospital lab technologists, to provide experiential training on research design, specialized techniques, and team building skills for both Ghanaian nationals and regional trainees. The third will be full degree programs (Masters and PhD), targeting career biomedical scientists in universities and health research institutions as well as the private sector. In addition to the existing programs at BCMB (MSc/MPhil Biochemistry, MPhil Molecular Biology and PhD Biochemistry) two new specialized programs will be added in 2014/2015, MPhil and PhD in molecular cell biology of infectious diseases.

The training programs will focus on a strong scientific foundation, rigorous evaluation of experimental results and on critical thinking about scientific data. The program's course work will require self-driven learning and thought. Students will use the flipped classroom approach to learn much of the didactic material using e-books, e-resources, e-journals and recommended textbooks,

allowing classes to be devoted largely to discussion, analysis and application of the material already read. Students will receive training in critical reading of the scientific literature and in the effective use of scientifically valuable websites. Laboratory training will provide knowledge of both the strengths and limitations of each method to empower them to interpret experimental data. Each specialized course will use papers from the literature to provide material for rigorous discussion of the methods used and of the validity of the interpretations given to the data obtained. In this way, students will be trained in the logic of experimental science and in the craft of critical reading. The new programs will be supported by an e-learning platform that provides consolidated learning resources and interaction with the student community and faculty, as well as a biomedical high performance computing laboratory which will be established in collaboration with the University of Ghana Computing Systems.

### **Applied Research**

The training programs at WACCBIP will be anchored by the strong, well-structured, and focused research portfolio that is ongoing and will be expanded with the establishment of this center, identifying opportunities to expand across disciplines and partners. The research mission of WACCBIP is to train professionals who are able to conduct cutting edge research and innovation to guide development of new approaches to disease diagnosis, prevention, and control. The priority pathogens include protozoans causing diseases such as malaria and trypanosomiasis; Mycobacteria, causing tuberculosis and Buruli ulcer, other bacteria causing gastro-intestinal and blood infections, and viruses, including HIV, rotaviruses, Influenza, Dengue and other hemorrhagic fevers. For each of the priority diseases/pathogens, research will be organized into five themes: disease pathogenesis and immunity, pathogen genomics/bioinformatics, molecular diagnosis, molecular epidemiology for surveillance, and target discovery for drug and vaccine development. Opportunities for regionally collaborative and work done in partnership with private sector companies will be developed and incorporated into the center as experiences for students.

### **Research Core facility**

To create an enabling environment for training and research, WACCBIP will also develop a Core facility with major pieces of equipment that will provide students with a hands-on experience on the use of modern research methods. The core will also serve as a hub for collaboration among scientists in the sub-region with access to modern research equipment for analysis of samples and other services at reasonable cost. Services to be provided by the core include high through-put multi-color flow cytometry and cell sorting, mass spectrometry, gene expression assays, primer synthesis, and expression and purification of proteins. In addition, the WACCBIP core will build capacity and expertise for servicing and repair of equipment. As part of procurement, equipment maintenance and more importantly training will be included to bring expertise in maintaining and repairing the equipment at the center. The WACCBIP core facility will also include a biomedical high performance computing unit (BHPCU) to provide access to cluster computing services, and scientific software for data analyses, modeling/simulation, and information dissemination.

### **Partners**

National partners include but are not limited to public health institutions such as the Navrongo Health Research Center/War Memorial Hospital, Kintampo Health Research Center/Municipal Hospital, and LEKMA Community Hospital as clinical partners for field and applied research. Additionally, we will seek increased participation of physicians and healthcare workers from these and other healthcare institutions in the short courses and/or masters and PhD programs. These facilities will draw benefit from the establishment of a core lab with the ability to expand laboratory capabilities through the core facility. Partnerships with Teshie, and LaGray Chemical Company, major private sector player, will be developed to host students for research experiences and learning on the manufacturing and company operations processes. BCMB and NMIMR have worked with the country's public health service through several of the national partners including

NHRC (Drs. Abraham Oduro and Lucas Amenga-Etego), KHRC (Drs. Seth Owusu-Agyei and Kwaku Asante-Poku), and Lekma hospital (Drs. Akua Gyima Asante and Agyeiwaa Tetteh), which are integral parts of the Ghana Health Service. In addition, NMIMR provides many public health services including reference laboratory for diagnosis of TB and Buruli ulcer, and testing for HIV and other highly infectious viruses such as Lassa, Ebola, and Dengue. WACCBIP will further coordinate and augment these services, working closely with the Ghana Health Service and its institutions to facilitate training of service delivery personnel on any new diagnostic methods, treatment options, or variation in pathogen virulence or antigenicity. Regional collaborators include Center Suisse de RechercheScientifique in La Cote d'Ivoire (Prof. Bassirou Bonfoh) working on Buruli Ulcer, Medical Research Council (MRC) unit, the Gambia (Dr. Alfred Amanbua) working on Malaria drug resistance, Malaria Research and Training Center at the University of Science, Techniques, and Technology, in Bamako, Mali (Prof. Mahamadou Diakite) working on population level malaria genomics, Centre National de Recherche et de Formation sur le Paludisme, Ouagadougou, Burkina Faso (Prof. Sodiomon Sirima), who are already working with the Noguchi Institute on epidemiologic methods, and the Unit for Research on Malaria and Neglected Tropical Diseases, Centre MURAZ Research Institute, Bobo-Dioulasso, Burkina Faso (Dr. Mamoudou Cisse) to expand work in neglected tropical disease. Workshops will be delivered at both the center and partner institutions as well as students coming to the Center from partner institutions for short research visit or Masters and PhD program. Major international partners already exist with overlap in faculty and shared learning experiences, including the American Society for Cell Biology (ASCB) with a network of >9000 scientists who assisted with curriculum development and will host faculty and students for training and research experiences. The center has existing collaborations on grants, research projects and short courses with the London School of Hygiene and Tropical Medicine (Prof. David Conway), University of Oxford (Prof. Keith Gull and Dr. Richard Wheeler), and University of Cambridge (Prof. Mark Carrington).

### **Important Changes Made**

The important changes made to establish the new WACCBIP center are the formalization and expansion of existing partnerships allowing for the expansion in capacity. In particular, the increased participation of scientists from Noguchi will significantly increase our faculty strength. Current student levels will be expanded from 6 PhDs in 2013 to a goal of 12 by 2015, from 12 Masters students to a goal of 20 per year as well as an overall expansion of short course participants to an average of 100 per year. The administrative structure at the University of Ghana supports the development of this center under the leadership of the center director who will report to the Dean of Biological Sciences. This center has the full support of the Vice Chancellor and Pro-Vice Chancellor. The existing procurement structure at the university allows for competitive bidding compliant with the World Bank procurement policies. The center has already been assigned its own procurement officer acceptable to the center as well as financial accountant manager. In addition for the Center's own internal verification/audit, the center staff will include its own accountant.

### **Projected Output**

At the end of the four year period of the World Bank grant, WACCBIP will have achieved the following: (i) international accreditation for at least two new specialized graduate programs, (ii) enrolled 40 PhDs, 80 MPhil students, of which 30% would be regional and 40% female, (iii) trained 390 scientists and health professionals through short term courses, of which 30% would be regional and 40% female, (iv) published 44 peer-reviewed research publications, of which at least 50% include regional co-authors, (v) attract an average of \$1M per year in externally mobilized funds, (vi) improved research and teaching environment through a building extension to provide new lecture and seminar rooms, well-equipped research core facility, established a biomedical high performance computing unit and e-learning platform

## 1. OVERVIEW OF PLANNED OUTPUTS, ACTIVITIES AND COST FOR FIRST YEAR

**Table 1: Overview of first project year** (this table is closely linked to section 7, as each activity row here in table 1 will require a separate activity sheet in section 7)

Code	Priority Rank	Result/Activity/Task	Budget Estimate (US\$)		
			ACE leader	Partners	Total
<b>Action Plan 1</b>	<b>(1 highest 5 lowest)</b>	<b>Achieving excellence in training</b>	<b>(Component total for ACE leader)</b>	<b>(Component total for partners)</b>	<b>(Total of component)</b>
1.1	1	Curriculum development – develop new masters and PhD programs	10,000.00	0	10,000.00
1.2	1	Obtain approval for new curriculum	15,000.00	0	15,000.00
1.3	2	Enrol students and run M.Phil program	35,000.00	18,750.00	53,750.00
1.4	2	Enrol students and run Ph.D. Program	50,000.00	15,000.00	65,000.00
1.5	2	Outreach events targeting women and minorities	15,000.00	5,000.00	20,000.00
1.6	3	Expand existing and develop new curricula for short courses (topics include: Neglected tropical disease, Malaria Genomics, Cell Biology)	10,000.00	0.00	27,500.00
1.7	3	Run expanded number and variety of short courses	25,000.00	20,000.00	12,500.00
		<b>Sub-Total</b>	<b>160,000.00</b>	<b>58,750.00</b>	<b>218,750.00</b>
<b>Action Plan 2</b>	<b>(1 highest 5 lowest)</b>	<b>Improving the learning experience</b>	<b>(Component total for ACE leader)</b>	<b>(Component total for partners)</b>	<b>(Total of component)</b>
2.1	1	Refurbish and upgrade ICT infrastructure, website design, and hosting, purchase software	45,000.00	5,000.00	50,000.00
2.2	2	Set-up e-learning platform, and acquiring e-resources	20,000.00	5,000.00	25,000.00
2.3	1	Provision of new lecture & seminar rooms, conference room, and offices	250,000.00	0	250,000.00
2.4	1	Equipping the Cell Biology Core Facility	415,000.00	0	415,000.00
2.5	3	Faculty Exchange programs with regional and national institutions	0	15,000.00	15,000.00
2.6	3	Engagement of international faculty for teaching courses and workshops, and co-supervision of students	0	15,000.00	15,000.00
		<b>Sub-Total</b>	<b>730,000.00</b>	<b>40,000.00</b>	<b>770,000.00</b>
<b>Action Plan 3</b>	<b>(1 highest)</b>	<b>Develop regional partnerships &amp; programs</b>	<b>(Component total for ACE leader)</b>	<b>(Component total for partners)</b>	<b>(Total of component)</b>
3.1	1	Maintain active web presence and advertise on relevant websites showcasing Centre's activities and available opportunities	0	1,000	1000
3.2	1	Engagement of regional faculty for teaching and co-supervision of student research	0	15,000.00	15,000.00
3.3	2	Provide travel awards for regional students and faculty for short research visits	0	15,000.00	15,000.00
3.4	2	Conduct Outreach Programs and Seminar/Lecture Tours regionally	0	15,000.00	15,000.00
		<b>Sub-Total</b>	<b>0</b>	<b>46,000.00</b>	<b>46,000.00</b>
<b>Action Plan 4</b>	<b>(1 highest 5 lowest)</b>	<b>Promote applied research</b>	<b>(Component total for ACE leader)</b>	<b>(Component total for partners)</b>	<b>(Total of component)</b>
4.1	1	Recruit two full time research fellows to focus on mentoring Centre masters and PhD student research project development, grant applications and scientific writing	56,000.00	0	56,000.00
4.2	2	Support Centre projects across partners that provide students high quality experience in research	40,000.00	0	40,000.00
4.3	1	Upgrade research laboratories	70,000.00	20,000.00	90,000.00

Code	Priority Rank	Result/Activity/Task	Budget Estimate (US\$)		
			ACE leader	Partners	Total
4.4	3	Support short training visits for faculty and students outside the ACE	20,000.00	10,000.00	30,000.00
4.5	2	Investigating the aetiology of febrile illness in Ghana	50,000.00	0	50,000.00
4.6	2	Monitor disease outbreaks	15,000.00	5,000.00	20,000.00
4.7	2	Joint research projects with regional and national institutions	15,000.00	80,000.00	95,000.00
		<b>Sub-Total</b>	<b>266,000.00</b>	<b>115,000.00</b>	<b>381,000.00</b>
<b>Action Plan 5</b>	<b>(1 highest 5 lowest)</b>	<b>Management and Governance establishment</b>	<b>(Component total for ACE leader)</b>	<b>(Component total for partners)</b>	<b>(Total of component)</b>
5.1	1	Establish and operationalize management and leadership of center	63,000.00	0	63,000.00
5.2	1	Set up External Advisory Board (international) and Steering Committee with 2 subcommittees – ensure regular meetings of all	10,000.00	0	10,000.00
5.3	2	Build administrative support team for the centre	73,000.00	0	73,000.00
5.4	2	Purchase office equipment, furniture and supplies for administrative team	20,000.00	0	20,000.00
		<b>Sub-Total</b>	<b>166,000.00</b>	<b>0</b>	<b>166,000.00</b>
<b>Action Plan 6</b>	<b>(1 highest 5 lowest)</b>	<b>Financial Sustainability</b>	<b>(Component total for ACE leader)</b>	<b>(Component total for partners)</b>	<b>(Total of component)</b>
6.1	2	Support faculty to submit three major grant applications	5,000.00	2,500.00	7,500.00
6.2	2	Support PhD and M. Phil students to apply for small student grants from international agencies to support their research, attendance & presentations at meetings	5,000.00	2,500.00	7,500.00
		<b>Sub-Total</b>	<b>10,000.00</b>	<b>5,000.00</b>	<b>15,000.00</b>
<b>TOTAL BUDGET</b>			<b>1,332,000.00</b>	<b>264,750.00</b>	<b>1,596,750.00</b>

**Table 2: Overview distribution among partners (this table is a breakdown of the partner budget in table 1, so the last column here in table 2 must match the second last column in table 1)**

Code	Result/Activity/Task	Budget Estimate (US\$)									Total Partner Budget
		KHRC	NHRC	LAGRAY	CNRFP	CSRS	CMRI	MRTC	MRC	ASCB	
<b>Action Plan1</b>	<b>Achieving excellence in training</b>	<i>(Component total for partner)</i>	<i>(Component total for partner)</i>	<i>(Component total for partner)</i>	<i>(Component total for partner)</i>	<i>(Component total for partner)</i>	<i>(Component total for partner)</i>	<i>(Component total for partner)</i>	<i>(Component total for partner)</i>	<i>(Component total for partner)</i>	<i>(Partners total of component)</i>
1.3	Enrol students and run M.Phil program						6,250	6,250	6,250		18,750
1.4	Enrol students and run Ph.D. Program	7,500				7,500					15,000
1.5	Outreach events targeting women and minorities				1,000	1,000	1,000	1,000	1,000		5,000
1.7	Run expanded number and variety of short courses	1,000	1,000		1,500	1,500	3,000	1,500	3,000	7,500	20,000
	<b>Sub-total</b>	<b>8,500</b>	<b>1,000</b>		<b>2,500</b>	<b>10,000</b>	<b>10,250</b>	<b>8,750</b>	<b>10,250</b>	<b>7,500</b>	<b>58,750</b>
<b>Action Plan2</b>	<b>Improving learning experience</b>										
2.1	Refurbish and upgrade ICT infrastructure, website design, and hosting, purchase software	500	500		1,000		1,000	1,000	1,000		5,000
2.2	Set-up e-learning platform, and acquiring e-resources	500	500		1,000		1,000	1,000	1,000		5,000
2.5	Faculty Exchange programs with regional and national institutions				5,000		5,000		5,000		15,000
2.6	Engagement of international faculty for teaching courses and workshops, and co-supervision of students									15,000	15,000
	<b>Sub-total</b>	<b>1,000</b>	<b>1,000</b>		<b>7,000</b>		<b>7,000</b>	<b>2,000</b>	<b>7,000</b>	<b>15,000</b>	<b>40,000</b>
<b>Action Plan3</b>	<b>Develop regional partnerships &amp; programs</b>										
3.1	Maintain active web presence and advertise on relevant websites showcasing Centre's activities and available opportunities					500	500				1,000
3.2	Engagement of regional faculty for teaching and co-supervision of student research				3,000	3,000	3,000	3,000	3,000		15,000



Code	Result/Activity/Task	Budget Estimate (US\$)									Total Partner Budget
		KHRC	NHRC	LAGRAY	CNRFP	CSRS	CMRI	MRTC	MRC	ASCB	
3.3	Provide travel awards for regional students and faculty for short research visits				3,000	3,000	3,000	3,000	3,000		15,000
3.4	Conduct Outreach Programs and Seminar/Lecture Tours regionally				3,000	3,000	3,000	3,000	3,000		15,000
	<i>Sub-total</i>				<b>9,000</b>	<b>9,500</b>	<b>9,500</b>	<b>9,000</b>	<b>9,000</b>		<b>46,000</b>
<b>Action Plan4</b>	<b>Promote applied research</b>										
4.3	Upgrade research laboratories	10,000	10,000								20,000
4.4	Support short training visits for faculty and students outside the ACE			1,000	2,500	1,500	2,500		2,500		10,000
4.6	Monitor disease outbreaks	1,000	1,000		1,000			1,000	1,000		5,000
4.7	Joint research projects with regional and national institutions	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000		80,000
	<i>Sub-total</i>	<b>21,000</b>	<b>21,000</b>	<b>11,000</b>	<b>13,500</b>	<b>11,500</b>	<b>12,500</b>	<b>11,000</b>	<b>13,500</b>		<b>115,000</b>
<b>Action Plan6</b>	<b>Financial Sustainability</b>										
6.1	Support faculty to submit three major grant applications	250	250		500	500	500	500			2500
6.2	Support PhD and M. Phil students to apply for small student grants from international agencies to support their research, attendance & presentations at meetings	250	250		500	500	500	500			2500
	<i>Sub-total</i>	500	500		1000	1000	1000	1000			5000
	<b>Grand Total</b>	<b>31,000</b>	<b>23,500</b>	<b>11,000</b>	<b>33,000</b>	<b>32,000</b>	<b>40,250</b>	<b>31,750</b>	<b>39,750</b>	<b>22,500</b>	<b>264,750</b>

## 2. TIMING OF PLANNED ACTIVITIES FOR ENTIRE PROJECT PERIOD (*Gantt*

*chart*)Table3: Work plan for the project

Code	Result/Activity task	Estimate (US \$)							
		2014		2015		2016		2017	
		1st half	2nd half	1st half	2nd half	1st half	2nd half	1st half	2nd half
<b>Action Plan 1</b>	<b><i>Achieving excellence in training</i></b>								
1.1	<i>Curriculum development – develop new masters and PhD programs</i>								
1.2	<i>Obtain approval for new curriculum</i>								
1.3	<i>Enrol students and run M.Phil program</i>								
1.4	<i>Enrol students and run Ph.D. Program</i>								
1.5	<i>Outreach events targeting women and minorities</i>								
1.6	<i>Expand existing and develop new curricula for short courses (topics include: Neglected tropical disease, Malaria Genomics, Cell Biology)</i>								
1.7	<i>Run expanded number and variety of short courses</i>								
<b>Action Plan 2</b>	<b><i>Improving learning experience</i></b>								
2.1	<i>Refurbish and upgrade ICT infrastructure, website design, and hosting, purchase software</i>								
2.2	<i>Set-up e-learning platform, and acquiring e-resources</i>								
2.3	<i>Provision of new lecture &amp; seminar rooms, conference room, and offices</i>								
2.4	<i>Upgrade cell biology core facility with maintenance unit (training of maintenance personnel, purchase of major equipment; flow cytometer and vehicle</i>								
2.5	<i>Faculty Exchange programs with regional and national institutions</i>								

Code	Result/Activity task	Estimate (US \$)							
		2014		2015		2016		2017	
		1st half	2nd half	1st half	2nd half	1st half	2nd half	1st half	2nd half
2.6	<i>Engagement of international faculty for teaching courses and workshops, and co-supervision of students</i>								
<b>Action Plan 3</b>	<b><i>Develop regional partnerships &amp; programs</i></b>								
3.1	<i>Maintain active web presence and advertise on relevant websites showcasing Centre's activities and available opportunities</i>								
3.2	<i>Engagement of regional faculty for teaching and co-supervision of student research</i>								
3.3	<i>Provide travel awards for regional students and faculty for short research visits</i>								
3.4	<i>Conduct Outreach Programs and Seminar/Lecture Tours regionally</i>								
<b>Action Plan 4</b>	<b><i>Promote applied research</i></b>								
4.1	<i>Recruit two full time research fellows to focus on mentoring Centre masters and PhD student research project development, grant applications and scientific writing</i>								
4.2	<i>Support Centre projects across partners that provide students high quality experience in research</i>								
4.3	<i>Upgrade research laboratories</i>								
4.4	<i>Support short training visits for faculty and students outside the ACE</i>								
4.5	<i>Investigating the aetiology of febrile illness in Ghana</i>								
4.6	<i>Monitor disease outbreaks</i>								
4.7	<i>Joint research projects with regional and national institutions</i>								
<b>Action Plan 5</b>	<b><i>Management and Governance establishment</i></b>								

Code	Result/Activity task	Estimate (US \$)							
		2014		2015		2016		2017	
		1st half	2nd half	1st half	2nd half	1st half	2nd half	1st half	2nd half
5.1	<i>Establish and operationalize management and leadership of center</i>								
5.2	<i>Set up External Advisory Board (international) and Steering Committee with 2 subcommittees – ensure regular meetings of all</i>								
5.3	<i>Employ support administrative team for the centre</i>								
5.4	<i>Purchase equipment and furniture and office supplies for administrative team</i>								
<b>Action Plan 6</b>	<b><i>Financial Sustainability</i></b>								
6.1	<i>Support faculty to submit three major grant applications</i>								
6.2	<i>Support PhD and M. Phil students to apply for small student grants from international agencies to support their research, attendance &amp; presentations at meetings</i>								

### 3. IMPLEMENTATION ARRANGEMENTS

#### 4.1 Guiding rules and regulations

WACCBIP will operate as an academic unit within the University of Ghana, with the primary mandate of training and applied research. All activities of the Center will comply with the University of Ghana governance, academic programs, research conduct and ethics, faculty and staff placement and development, and financial management and procurement. These current structures have been accommodating with timely establishment of the Center and designation of individual liaisons from each sector to the Center for clear communication and short chain decision-making. In addition, the activities of WACCBIP's national, regional and international partners that are funded as part of their collaboration with the Center such as payments for goods and services necessary for the collaborative research and training activities will be paid directly from the University of Ghana and funds will not be transferred to partner institutions for disbursement. To assure timely and accurate movement of finances as well as ensuring that goods and services procured meet the center's quality and specification needs, through the existing University of Ghana organizational structures in compliance with the World Bank's procurement policies internal account and procurement officers will be hired by the center.

## 4.2 Governance structures

WACCBIP will function similar to the other academic Centers within the University of Ghana as the current system allows for each department to innovate its own teaching and research programs. University centers and departments already operate semi-autonomously with oversight from the Deans or College Provosts responsible for the relevant discipline.

Under the University's new collegiate structure that is currently being implemented, the Department of Biochemistry, Cell and Molecular Biology will be placed under the School of Biological Sciences, in the College of Basic and Applied Sciences. Therefore, the proposed WACCBIP will function as a semi-autonomous entity in the newly established College of Basic and Applied Sciences, under the oversight of the Provost of the College and the Pro-VC for Research, Innovation and Development (Pro-VC, RID – Prof John Gyapong). WACCBIP will operate primarily with the Department of Biochemistry, Cell and Molecular Biology, where it draws a majority of its faculty and laboratory resources, with support from internal partners the Noguchi Memorial Institute for Medical Research led by Prof. Kwadwo Koram, the University of Ghana Computing Systems led by Ms. Ama Dadson, and the College of Health Sciences.

The Center will be led by the Center Leader (Director) Dr. Gordon Awandare, and Deputy Center Leader Prof. Kwadwo Koram, and assisted by the Center's Steering Committee assembled in consultation between the center leader and the Vice-Chancellor, composed of senior academic leaders from University of Ghana and leadership from local, regional industry partners. The steering committee will have two sub-committees; the Training and Research Sub-Committee to implement teaching and research objectives at the Center and the Logistics and Information Computing Technology (ICT) sub-committee for technical assistance in installation and expansion of computing abilities. An International Advisory Group comprised of international experts free of local bias will advise the Center's Leadership.

### **Academic management**

The Center will introduce new teaching methods, including interactive learning and use of ICT. The new curriculum for MPhil and PhD degrees in Molecular Cell Biology of Infectious Diseases will be reviewed and approved by the University's Academic Curriculum Academic Quality Assurance Unit as required by all graduate programs. All the courses and examinations for the proposed programs will be administered together with the existing BCMB programs, under the supervision of the Academic Affairs Directorate of the University. In addition, we have selected an International accrediting agency, the Society of Biology, UK, for continuing review and quality control of the Center's academic curricula. These structures are currently functioning within the University of Ghana system and have been accessible to the center in a timely and accommodating manner for all required approvals thus far.

### **Financial management and procurement**

The University of Ghana's Office of Research, Innovation and Development (ORID) is responsible for providing research administration and management services and other research support services to its faculty, staff and students. ORID has the needed human resource capacity to support the implementation of this project through its existing staff responsible for research administration providing among other services, grants management services. The center accountant will serve as the link between the center and ORID for accountability and timely execution of financial transactions and reporting.

The University of Ghana has in place financial regulations with ORID putting into place systems and structures to ensure the proper management of donor funds. ORID has an External Funds Unit, which currently provides project financial grants management services to externally funded donor projects. The Unit is led by a certified chartered accountant with considerable work experience in financial and management accounting, treasury and financial administrative services among others.

ORID ensures due diligence by putting in place a tracking system for monitoring the use of project funds. All requests for disbursement are made with supporting documentation, which is processed based on approved budget lines. Grantees are also required to report on the progress of their projects by submitting regular reports to ORID. In addition, ORID ensures that reports (both narrative and financial) are submitted to donors on schedule. Donor projects are regularly audited and to date, no adverse findings have been made against any project managed by ORID. Monitoring on the use of project funds is further enhanced by the use of the Integrated Tertiary Software (ITS), which allows for easy tracking of expenditures against project budgets and also for the preparation of regular financial statements to funders. For internal verification the center will also hire its own accountant to track the process through ORID and manage center expenditures that are not done through the procurement process (e.g. travel).

The University of Ghana has a Procurement Unit led by a procurement officer with several support staff who together are responsible for all procurement activities of the University. All procurement practices at the University of Ghana are guided by the legal framework of the Public Procurement Act 2003, Act 663. The University of Ghana has the required procurement structures (as specified by the Public Procurement Act) in place with the University of Ghana classified as a procurement entity. In addition, it has an Entity Tender Committee, a Tender Evaluation Panel as well as Tender Review Boards. The University's Entity Tender Committee (Procurement Committee) holds regular meetings, which are chaired by Prof. John Gyapong, the Pro-Vice-Chancellor of Research, Innovation and Development allowing for timely processing of procurement needs. The Procurement Unit plays a crucial role in ensuring that goods and services for externally funded projects are procured in a timely manner based on approved budget lines and specifications and/or requirements. The University's procurement methods for goods and services include Single or Sole Sourcing (where justified), Restricted or Selective Tendering (where justified), National Competitive Tendering, Price Quotation and International Competitive Tendering. These processes are well aligned with the World Bank procurement guidelines.

WACCBIP will strictly adhere to the highest standards of ethics and integrity in all its financial and procurement transactions. The World Bank's Policy on Corrupt and Fraudulent Practices has been incorporated into the Center's procurement manual and the guidelines will be firmly enforced. All staff, officers, partners, students, consultants and sub-contractors involved with the Center will be educated on these guidelines and the penalties for defaulters will be clearly defined. In addition, the center's procurement officer will ensure compliance with University and National guidelines as well as the World Bank regulations.

#### **4.3 Incentive Structures**

All staff and management of the Center will be entitled to compensation that is consistent with the guidelines for University of Ghana staff at the same level across the institution. The Center Leader, and Deputy Center Leader, will be entitled to the prescribed responsibility

allowances that are due to the Directors and Deputy Directors respectively, of the University's other academic Centers. Individuals engaged as full-time teaching staff of the Center will be appropriately placed within the University's salary structure according to their qualifications (e.g. lecturer, associate professor etc). The Chairpersons for the Research and Training, and Logistics and ICT committees will be faculty members with the status of Heads of Department, and will be entitled to the responsibility allowances prescribed for such positions. Teaching faculty who carry a credit load of more than six credits per semester will be entitled to reimbursement for fuel costs and extra teaching allowances as approved by the University's guidelines. Faculty who were previously not involved in student mentorship and oversight will be compensated at the level appropriate for their amount of student contact (e.g. PhD thesis mentor).

Private business is incentivized to work with the center to host students that will execute work and new research for immediate gains and as a pipeline for qualified experts into the labor force after completion of the degree programs. Regional partners have incentive to work with the center as it has the equipment and staff to support additional projects as well as the students to complete these projects. Additionally students from regional partners would have relative admission priority to meet target goals of making the center comprised of 30% regional students. National partners have incentive to work with the center for access to its teaching for their trainees, its equipment and new services as part of the core facility.

### **Roles and Responsibilities**

<b>POSITION</b>	<b>Person/ Qualifications</b>	<b>JUSTIFICATION</b>
Center Leader	Dr. Gordon Awandare	The Center Leader will lead and manage all aspects of the activities of the Center
Deputy Center Leader	Dr. Kwadwo Koram	The Deputy Center Leader will assist the Center Leader in running the Center <ul style="list-style-type: none"> <li>• Available to cover for the Center Leader</li> <li>• Exploration of ideas and decision making</li> <li>• Assuming delegated responsibilities (examples: partnership meetings, review reports from internal procurement and financial officers)</li> </ul>
Head of Training & Research	Dr. Patrick Arthur	Chair of Training and Research sub-committee, Operationalize center ideas: <ul style="list-style-type: none"> <li>• lead curriculum design,</li> <li>• Coordinating student recruitment,</li> <li>• Leading development of workshop content</li> <li>• Monitors student performance for progress</li> <li>• Oversee research infrastructure and equipment management.</li> </ul>

Head of Logistics and ICT	Ms. Ama Dadson	Chair of Logistics and ICT sub-committee, with responsibilities including <ul style="list-style-type: none"> <li>• Management of the Center’s support resources (examples: vehicles, catering, travel, facilities)</li> <li>• Oversee ICT resources including e-Learning platform, cluster computing services, electronic resources, passages, protocol and logistics</li> </ul>
Two Research Fellows	Completed PhD level training (post-doctoral)	Will work with the Center Leader and Head of Research and Training <ul style="list-style-type: none"> <li>• Support the students in completing their research projects</li> <li>• Assist students in manuscript writing and review</li> <li>• Assist students and the center by writing research grant proposals</li> <li>• Overall execute the research agenda of the Center as unifying force</li> </ul>
Administrator	Masters Degree Level	Head of the secretariat staff/Chief administrator <ul style="list-style-type: none"> <li>• Supervise the support personnel</li> <li>• Liaison for the accounting and procurement officers</li> <li>• Communications on behalf of the center (letters, emails)</li> <li>• Receive external communications (applications, etc)</li> </ul>
Two Research Assistants	Bachelors degree level in science	Will assist the Head of Research and Training and the 2 research fellows <ul style="list-style-type: none"> <li>• Managing the laboratories (supplies, equipment, reagents)</li> <li>• Assisting the research fellows and students in their research.</li> </ul>
Accounting	Bachelors degree level in	Will assist the Center Leader and Administrator in accounting duties of the Center, and will liase with the Accountant at



	accounting	ORID and Director of Finance.
ICT/Information Officer	Bachelors degree level in computer sciences	Will assist the Head of Logistics and ICT sub-committee <ul style="list-style-type: none"> <li>• Maintain the Center's website</li> <li>• in managing the ICT resources and electronic equipment</li> <li>• Data aggregations (online applications, publications, grants applied for)</li> </ul>
Procurement Officer(1 <sup>st</sup> degree)	Bachelors degree level	Will liaise with the University's Head of Procurement to: <ul style="list-style-type: none"> <li>• Placing advertisements for national competitive tender</li> <li>• Opening of tender</li> <li>• Evaluation of tender</li> <li>• Notification of award, contracts awarded</li> <li>• Contracts management</li> <li>• Ensuring goods and services meet the Center's specifications and quality</li> </ul>
Driver Grade II	Meet safe driving and national licensing requirements	Will be responsible for driving the vehicles of the Center <ul style="list-style-type: none"> <li>• Bus</li> <li>• SUV</li> </ul>
Two Cleaners		Will be responsible for the day to day cleaning of the Center
Teaching Faculty	PhD level	See list below

### WACCBIP Steering Committee

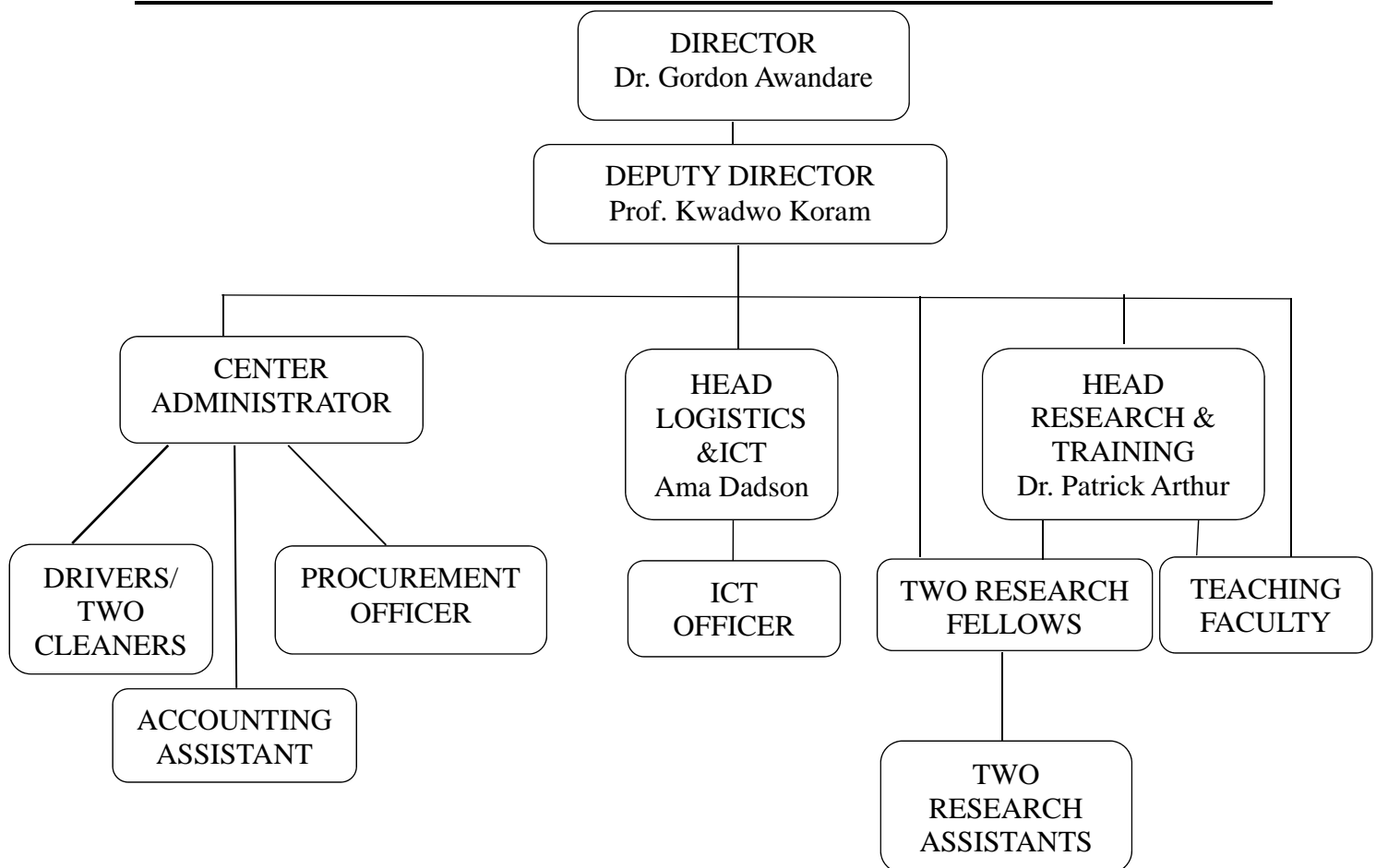
Name	Institution
Dr. Gordon Awandare	BCMB/Center Leader
Prof. Kwadwo Koram	NMIMR/Deputy Center Leader
Dr. Patrick Arthur	BCMB/Head of Training and Research
Ms. Ama Dadson	Head of ICT and Logistics
Mr. Barfi-Adomako Owusu	University of Ghana Computing Systems
Mr. Collins Amofa	ORID Accountant
Prof. Dorothy Yeboah Manu	NMIMR
Prof. Ebenezer Owusu	Dean, School of Biological Sciences
Dr. Lydia Mosi	BCMB
Dr. Osbourne Quaye	BCMB
Dr. Kwaku Asante Poku	Kintampo Health Research Center

Prof Mahamadou Diakite	Malaria Research and Training Center, University of Science, Techniques, and Technology, Bamako, Mali
Dr. Alfred NgwaAmanbua	Medical Research Council, the Gambia
Dr. Lucas Amenga-Etego	Navrongo Health Research Center
Dr. George Obeng-Adjei	University of Ghana Medical School
Dr. Paul Lartey	LaGray Chemical Company

**WACCBIP International Advisory Board**

Name	Institution
Prof. Dick McIntosh	University of Colorado (ASCB)
Prof. Kirk Deitsch	Cornell University Medical School (ASCB)
Prof. Keith Gull	University of Oxford
Prof. David Conway	London School of Hygiene and Tropical Medicine
Prof. Mark Carrington	University of Cambridge
Prof. Douglas J. Perkins	University of New Mexico
Prof. Bassirou Bonfou	Center Suisse de Recherche Scientifique, La Cote d'Ivoire
Prof. Isabella Quakyi	University of Ghana, School of Public Health
Mr. J. Y. A. Appiah	Ministry of Health, Ghana
Prof. John Gyapong	Pro-VC, Research Innovation and Development

**ORGANOGRAM REPRESENTING THE WACCBIP STAFF STRUCTURE**



## **TEACHING FACULTY**

#	NAME	INSTITUTION	HIGHEST DEGREE	AREA OF SPECIALTY
1	Dr. Gordon Awandare (Center Leader)	University of Ghana, Biochemistry, Cell and Molecular, Biology, (BCMB)	PhD	Malaria parasite biology, immunology and pathogenesis
2	Dr. Patrick K. Arthur	University of Ghana, BCMB	PhD	Chemical Biology and Proteomics in Infectious Diseases
3	Prof. Sammy T. Sackey	University of Ghana, BCMB	PhD	Virology, molecular biology
4	Dr. Lydia Mosi	University of Ghana, BCMB	PhD	Buruli ulcer, Molecular Biology, Microbiology, Bioinformatics
5	Dr. Osbourne Quaye	University of Ghana, BCMB	PhD	Zoonotic transmission of gastro-viral agents, Virology, Enzymology
6	Dr. Theresa Manful	University of Ghana, BCMB	PhD	Trypanosomes and <i>Leishmania</i> , Molecular Biology, Bioinformatics
7	Dr. Marian A. Nyako	University of Ghana, BCMB	PhD	Malaria parasite biology, Molecular cell biology
8	Prof. Naa A. Adamafio	University of Ghana, BCMB	PhD	Signal transduction, bioremediation
9	Dr. Jonathan P. Adjimani	University of Ghana, BCMB	PhD	Bioenergetics, enzymology
10	Prof. Laud K.N-A Okine	University of Ghana, BCMB	PhD	Naturals products, toxicology
11	Rev. Dr. W. S. K. Gbewonyo	University of Ghana, BCMB	PhD	Insect biochemistry, natural products
12	Dr. Augustine Ocloo	University of Ghana, BCMB	PhD	Bioenergetics, protein chemistry
13	Dr. N. A. Yeboah	University of Ghana, BCMB	PhD	Protein chemistry, molecular biology
14	Dr. Kodzo Gbewonyo	University of Ghana, BCMB	PhD	Biotechnology, molecular biology
15	Prof. Kwadwo A. Koram (Deputy Center Leader)	University of Ghana, Noguchi Memorial Institute for Medical Research (NMIMR)	MD, PhD	Epidemiology of infectious diseases, malaria
16	Prof. Dorothy Yeboah-Manu	University of Ghana, NMIMR	PhD	Bacteriology, molecular epidemiology, Antimicrobial therapeutics

17	Dr. Michael F. Ofori	University of Ghana, NMIMR	PhD	Malaria parasite biology, placental malaria
18	Dr. Kwadwo AsamoahKusi	University of Ghana, NMIMR	PhD	Malaria immunology
19	Dr. Nancy Duah Quashie	University of Ghana, NMIMR	PhD	Molecular epidemiology
20	Dr. Anita Ghansah	University of Ghana, NMIMR	PhD	Genetic epidemiology
21	Prof. William Ampofo	University of Ghana, NMIMR	PhD	Virology – diagnosis and molecular surveillance
22	Dr. Kofi Bonney	University of Ghana, NMIMR	PhD	Virology – viral hemorrhagic fevers
23	Ms. Ama Dadson	University of Ghana Computing Systems	MSc	ICT
24	Mr. Barfi-Adomako Owusu	University of Ghana Computing Systems	MSc	ICT
25	Prof. Isabella Quakyi	University of Ghana, School of Public Health	PhD	Malaria immunity and vaccine development
26	Prof. Julius Fobil	University of Ghana School of Public Health	PhD	Malaria epidemiology and biostatistics
27	Dr. Samuel Bosomprah	University of Ghana School of Public Health	PhD	Biostatistics
28	Dr. Samuel K. Kwofie	University of Ghana, Biomedical Engineering	PhD	Bioinformatics, structural biology, hepatitis
29	Dr. Elvis K. Tiburu	University of Ghana, Biomedical Engineering	PhD	Targeted drug discovery and delivery, structural biology, cancer
30	Dr. George Obeng- Adjei	University of Ghana Medical School	MD, PhD	Malaria chemotherapy
31	Dr. Neils Quashie	University of Ghana Medical School	PhD	Molecular epidemiology, antimicrobial therapeutics
32	Prof. Robert A. Kwame-Aryee	University of Ghana, School of Allied Health Sciences	MD	Obstetrics and Gynecology, Workshops
33	Dr. Richard Asmah	University of Ghana, School of Allied Health Sciences	PhD	Immunology and Molecular Biology
34	Dr. Lucas Amenga- Etego	Navrongo Health Research Center	PhD	Host and Pathogen genomics, Bioinformatics
35	Dr Seth Owusu- Agyei	Kintampo Health Research Center	PhD	Molecular Epidemiology of Infectious Diseases, Malaria Epidemiology
36	Dr. Kwaku Poku Asante	Kintampo Health Research Center	MD, PhD	Research Methods, Malaria epidemiology
37	Prof. Bassirou Bonfoh	Swiss Centre for Scientific Research, Cote d'Ivoire	PhD	Zoonotic parasitic diseases, transmission risk analysis

38	Dr. Alfred Amambua-Ngwa	Medical Research Council, The Gambia	PhD	Host and Pathogen genomics, Bioinformatics
39	Dr. Sodiomon B. Sirima	Centre National de Recherche et de Formation sur le Paludisme (CNRFP), Burkina Faso	PhD	Malaria epidemiology
40	Prof. Keith Gull	University of Oxford, UK	PhD	African trypanosomes, <i>Leishmania</i>
41	Prof. Kirk Deitsch	Weill Medical College of Cornell University, USA	PhD	Molecular biology of Plasmodia
42	Prof. Dick McIntosh	University of Colorado, Boulder, CO	PhD	Mitosis, Kinetochore-Microtubule Interactions
43	Prof. David Conway	London School of Hygiene and Tropical Medicine, UK	PhD	Population genetics, molecular biology and immunology of malaria
44	Prof. Mark Carrington	University of Cambridge, UK	PhD	Molecular cell biology of Trypanosomes, Genomics

#### 4.4 Environment safeguards

The Center leader, Dr. Gordon Awandare is responsible for ensuring the Center's compliance with the environmental plans. Additionally the University of Ghana has safety officers they will utilize to ensure compliance with both this and the university's environmental standards. See attached part II for the full environmental monitoring plan.

#### 4. PERFORMANCE MONITORING

(Please insert the Result Framework shared with AAU, and please indicate planned disbursement as a function of the expected results\*)

Disbursement Linked Indicator	Action to be Completed	Amount (USD) of the Financing Allocated Per DLI (expressed in Special Drawing Rights (SDR))	Amount (USD) Allocated per DLR for the Disbursement Calculation (expressed in SDR)
<b>DLI 1:</b> (Year 0) Institution qualified, Regional specialization approved and Administrative capacity and proper planning	<b>DLR 1.1</b> <ul style="list-style-type: none"> <li>• Steering Committee endorsed an MoU promoting regional specialization through the ACEs</li> <li>• Establishment of the national review committee (National Council on Tertiary Education: Ministry of Health, Ministry of Education, Ministry of Finance)</li> <li>• Creation of ACE designated account / endowment fund with rules of operation</li> <li>• Signing of funding and performance contract between the University and the Government</li> <li>• Signing of the partnership MOUs to be followed by detailed contracts of services to be provided</li> <li>• Approved Financial Management and procurement procedures and capacity</li> </ul>	800,000	800,000
<b>DLI 2:</b> Excellence in education and research capacity and development impact	Number of new students in ACE courses  <b>DLR 2.1:</b> <ul style="list-style-type: none"> <li>• New Short term students (390) 273 National; 164 males, 109 females 117 Non-national; 70 males, 47 females</li> </ul> <b>DLR 2.2:</b> <ul style="list-style-type: none"> <li>• New Masters students (80) 56 National; 34 males, 22 females 24 Non-national; 14 males, 10 females</li> </ul> <b>DLR 2.3:</b> <ul style="list-style-type: none"> <li>• New PhD (40) 28 National; 17 males, 11 females 12 Non-national; 7 males, 5 females</li> </ul> <b>DLR 2.4:</b> # of outreach “periods”	<ul style="list-style-type: none"> <li>• \$120,100</li> <li>• \$103,000</li> <li>• \$123,000</li> <li>• \$106,000</li> <li>• \$307,500</li> <li>• \$265,000</li> </ul>	<ul style="list-style-type: none"> <li>• 223,100</li> <li>• 229,000</li> <li>• 572,500</li> </ul>

Disbursement Linked Indicator	Action to be Completed	Amount (USD) of the Financing Allocated Per DLI (expressed in Special Drawing Rights (SDR))	Amount (USD) Allocated per DLR for the Disbursement Calculation (expressed in SDR)
	<ul style="list-style-type: none"> <li>• # of individual students (89); 63 national, 26 non-national</li> <li>• # of individual faculty (11); 8 national, 3 non-national</li> </ul> <p><b>DLR 2.5:</b></p> <ul style="list-style-type: none"> <li>• International accreditation by Society of Biology (valid until end of August 2017) for 2 programs</li> <li>• Gap assessment certified /undertaken by an external accreditation agency every 2 years</li> <li>• Self-evaluation undertaken following of satisfactory international standards (agreed as part of the annual work plan)</li> </ul> <p><b>DLR 2.6:</b></p> <ul style="list-style-type: none"> <li>• # of published articles in internationally recognized and peer reviewed journals from national authors only (22)</li> <li>• # of regionally co-authored peer review journals (22)</li> <li>•</li> </ul> <p><b>DLR 2.7:</b></p> <ul style="list-style-type: none"> <li>• Externally generated revenue (80% externally generated, 20% internally generated)</li> </ul> <p><b>DLR 2.8:</b> Improved teaching and learning environment</p> <ul style="list-style-type: none"> <li>• Completion of new building including graduate lecture rooms, seminar room, bioinformatics lab</li> <li>• Completion of e-learning platform.</li> <li>• Completion of biomedical high performance computing unit.</li> <li>• Establishment of research core facilities</li> </ul>	<ul style="list-style-type: none"> <li>• \$230,000</li> <li>• \$28,000</li> </ul> <ul style="list-style-type: none"> <li>• 600,000</li> <li>• 100,000</li> <li>• 100,000</li> </ul> <ul style="list-style-type: none"> <li>• 330,000</li> <li>• 660,000</li> </ul> <ul style="list-style-type: none"> <li>• 400,000</li> </ul> <ul style="list-style-type: none"> <li>• 400,000</li> <li>• 400,000</li> <li>• 400,000</li> </ul>	<p>258,000</p> <p>1,200,000</p> <p>990,000</p> <p>1,200,000</p> <p>1,600,000</p>
<p><b>DLI 3</b> Financial Management</p>	<p><b>DLR 3.1:</b></p> <ul style="list-style-type: none"> <li>• Timely withdrawal application supported by financial reporting for the ACE account for the period, including Eligible</li> </ul>	<ul style="list-style-type: none"> <li>• 25,000/yr = 100,000</li> </ul>	

Disbursement Linked Indicator	Action to be Completed	Amount (USD) of the Financing Allocated Per DLI (expressed in <i>Special Drawing Rights</i> (SDR))	Amount (USD) Allocated per DLR for the Disbursement Calculation (expressed in SDR)
	Expenditure Programs for the ACE <ul style="list-style-type: none"> <li>• Functioning Audit Committee under the university council</li> <li>• Functioning internal audit unit for the university.</li> <li>• Transparency on Financial management (web-access to audit reports, interim financial reports, budgets and annual workplan)</li> </ul>	<ul style="list-style-type: none"> <li>• 25,000/yr = 100,000</li> <li>• 25,000/yr = 100,000</li> <li>• 25,000/yr = 100,000</li> </ul>	400,000
<b>DLI 4</b>	<b>DLR 4.1</b> <ul style="list-style-type: none"> <li>• Third-party procurement process verification</li> <li>• Timeliness of procurement progress (25% of all procurement completed by year 1; 55% by year 2, and 100% by year 3, and verification of installation by year 4)</li> </ul>	<ul style="list-style-type: none"> <li>• 50,000 (per annual milestone)</li> </ul>	400,000
	<b>TOTAL</b>		<b>7,472,600</b>



## 5. DETAILED BUDGET

Table 5: Budget, 2014 – 2018 with split between partners

Expenditure Category	Estimated Costs in (US\$)						
	YR 1 2014	YR 2 2015	YR3 2016	YR 4 2017	YR5 2018	Total	%of total
<b>A: Budget by Activity Plan</b>							
Action Plan 1: Achieving excellence in training	218,750	218,750	388,750	388,750		1,215,000	15.6
Action Plan 2: Improving learning experience	770,000	1,170,000	970,000	970,000		3,880,000	50.0
Action Plan 3: Develop regional partnerships & programs	46,000	46,000	46,000	46,000		184,000	2.4
Action Plan 4: Promote applied research	381,000	381,000	381,000	381,000		1,524,000	19.6
Action Plan 5: Management and Governance establishment	166,000	166,000	166,000	166,000		664,000	8.5
Action Plan 6: Financial Sustainability	15,000	15,000	15,000	15,000		60,000	0.8
Programme Management	50,000	50,000	50,000	50,000		200,000	2.6
Contingency	10,000	10,000	10,000	10,000		40,000	0.5
<b>TOTAL</b>	<b>1,656,750</b>	<b>2,056,750</b>	<b>2,026,750</b>	<b>2,026,750</b>		<b>7,767,000</b>	
<b>%</b>	<b>20.1</b>	<b>25.7</b>	<b>25.3</b>	<b>25.3</b>		<b>97.1</b>	
<b>B: Budget by partners</b>							
<i>KHRC</i>	31,000	31,000	31,000	31,000		<b>124,000</b>	11.7
<i>NHRC</i>	23,500	23,500	23,500	23,500		<b>94,000</b>	8.9
<i>LAGRAY</i>	11,000	11,000	11,000	11,000		<b>44,000</b>	4.2
<i>CNRFP</i>	33,000	33,000	33,000	33,000		<b>132,000</b>	12.5
<i>CSRS</i>	32,000	32,000	32,000	32,000		<b>128,000</b>	12.1
CMRI	40,250	40,250	40,250	40,250		<b>161,000</b>	15.2
MRTC	31,750	31,750	31,750	31,750		<b>127,000</b>	12.0
MRC	39,750	39,750	39,750	39,750		<b>159,000</b>	15.0
ASCB	22,500	22,500	22,500	22,500		<b>90,000</b>	8.5
<b>TOTAL</b>	<b>264,750</b>	<b>264,750</b>	<b>264,750</b>	<b>264,750</b>		<b>1,059,000</b>	

## 6. DETAILED ACTIVITY SHEETS (one for each activity)

Action Plan: Learning Excellence -1

Timeframe: Year 1

Activity: 1.1 – Curriculum Development

RESULT	Develop new: <ul style="list-style-type: none"> <li>• M. Phil courses as part of new degree</li> <li>• PhD course as part of new degree</li> </ul>						
ACTIVITY	1.1 – Curriculum Development						
OUTPUT	<ul style="list-style-type: none"> <li>• Successful development and writing of M. Phil curriculum</li> <li>• Successful development and writing of PhD curriculum</li> </ul>						
OUTPUT INDICATOR : <ul style="list-style-type: none"> <li>• Approval by the Academic Curriculum Quality Committee of the University of Ghana and Academic Board</li> </ul>				SOURCE OF VERIFICATION: <ul style="list-style-type: none"> <li>• Office of the Registrar University of Ghana</li> <li>• Pro- Vice Chancellor Academics– Prof. Kwame Offei</li> <li>• School of Graduate Studies</li> </ul>			
IMPLEMENTATION MILESTONES	Nov 2013 – New courses designed and developed by BCMB faculty members Jan 2014 – Curriculum development workshop Mar 2014 – Approval of courses by Faculty Board and Graduate school Jun 2014 – Approval of courses by Academic Board						
PROCUREMENT	N/A						
RESPONSIBILITY FOR IMPLEMENTATION	Dr. Gordon Awandare with the Graduate School Committee of the department of Biochemistry Cell and Molecular Biology (BCMB)						
DURATION: 8 months	Commencement: Nov 2013			Completion: Jun 2014			
PRIMARY CONSTITUENTS: All BCMB faculty, All graduate program applicants, selected incoming graduate students				PARTICIPANTS: All BCMB faculty American Society Cell Biology			
ASSUMPTIONS	Meeting schedules of curriculum approval boards has to be modified for timely approval						
FINANCIAL IMPLICATIONS	\$10,000 From ACE budget						
Budget Line Analysis	1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total
1	Travel for international faculty to Legon for curriculum development	6,000					6,000
2	Curriculum Development workshop	4,000					4,000
TOTALS		10,000					10,000

**Action Plan: Learning Excellence -1**

**Timeframe: Year 1**

**Activity: 1.2 – Obtain approval for new curriculum**

RESULT	<ul style="list-style-type: none"> <li>• <b>New MPhil curriculum approved</b></li> <li>• <b>New PhD curriculum approved</b></li> </ul>						
ACTIVITY	1.2 – Obtain approval for new curriculum						
OUTPUT	<ul style="list-style-type: none"> <li>• New curriculum ready to be run by the Center</li> <li>• National accreditation for new curriculum</li> <li>• International accreditation for new curriculum</li> </ul>						
<b>OUTPUT INDICATOR:</b> <ul style="list-style-type: none"> <li>• Attraction of increased number of student applicants</li> <li>• Attraction of regional faculty</li> <li>• Successful accreditation by The National Accreditation Board of Ghana</li> <li>• Successful accreditation by the Society of Biology, United Kingdom</li> </ul>				<b>SOURCE OF VERIFICATION:</b> <ul style="list-style-type: none"> <li>• Office of the Registrar University of Ghana</li> <li>• The National Accreditation Board of Ghana</li> <li>• Society of Biology, United Kingdom</li> </ul>			
IMPLEMENTATION MILESTONES	<p>June 2014 – Curriculum ready to run by the center and for accreditation                  July 2014 – Curriculum submitted for national accreditation and Society of Biology                  December 2014 – Anticipated approval by the National Accreditation Board of Ghana                  February 2015 – Planned site visit for Society of Biology for final accreditation approval                  April 2015 – Anticipated accreditation received from the Society of Biology</p>						
PROCUREMENT	<ul style="list-style-type: none"> <li>• Purchase of plane tickets, accommodations for visiting accreditors</li> <li>• Accreditation fees/honoraria to international society</li> </ul>						
RESPONSIBILITY FOR IMPLEMENTATION	Dr. Gordon Awandare, Prof. Kwadwo Koram						
DURATION: 10 months	Commencement: June 2014			Completion: April 2015			
<b>PRIMARY CONSTITUENTS:</b> All BCMB faculty, Noguchi Institute Faculty, Existing graduate students				<b>PARTICIPANTS:</b> All BCMB faculty Noguchi Institute faculty Existing graduate students			
ASSUMPTIONS	Meeting schedules of accreditation bodies follow this timeline						
FINANCIAL IMPLICATIONS	Travel for international accreditors must be covered as well as any international accreditation fee/honoraria. National accreditation fee is covered by the University of Ghana						
Budget Line Analysis	1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total
Travel, housing, per diem of international accreditors				10,000			10,000
Accreditation fee/honoraria				5,000			5,000

TOTALS				15,000			15,000
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**Action Plan 1: Learning Excellence**

**Timeframe: Year One (and all subsequent years)**

**Activity: 1.3 – Enrol students and run MPhil Program**

RESULT	<ul style="list-style-type: none"> <li>• Enrol 20MPhil students each year</li> <li>• Deliver curriculum to MPhil students each year</li> <li>• Assist students in meeting their research requirements</li> </ul>	
ACTIVITY	1.3 – Enrol students and run MPhil Program	
OUTPUTS	<ul style="list-style-type: none"> <li>• Enrol 20 students each successive year</li> <li>• Each student successfully completes new curriculum</li> <li>• Engage each student in applied research as part of their degree</li> </ul>	
OUTPUT INDICATOR:	<ul style="list-style-type: none"> <li>• Successful enrolling of 20 students each successive year (6 in existing biochemistry program and 14 in new infectious pathogens program)</li> <li>• Composition of students to include 30% regional and 40% female</li> <li>• Retain 90% of students enrolled</li> <li>• Students complete required coursework on schedule in one year</li> <li>• Students complete required research thesis in one year</li> <li>• Student publications of their research</li> <li>• Students obtaining small grants</li> <li>• Students attending national and international scientific conferences</li> </ul>	SOURCE OF VERIFICATION <ul style="list-style-type: none"> <li>• School of Graduate Studies</li> <li>• Department of Biochemistry, Cell and Molecular Biology</li> <li>• Director of academic affairs University of Ghana Legon</li> </ul>
IMPLEMENTATION MILESTONES	<p>July 2014 1<sup>st</sup>&amp; 2<sup>nd</sup> weeks – Advertise and accept applications for existing and new programs</p> <p>July 2014 3<sup>rd</sup>&amp; 4<sup>th</sup> weeks – Review applications and short list for interview</p> <p>August 2014 1<sup>st</sup>&amp; 2<sup>nd</sup> weeks – Interview applicants</p> <p>August 2014 3<sup>rd</sup> week – acceptance offered to selected students</p> <p>August 2014 4<sup>th</sup> week – Students begin course work</p> <p>August 2014 – May 2015 – first class of students completes course work</p>	
PROCUREMENT	<ul style="list-style-type: none"> <li>• Advertisement for program in the national newspapers</li> <li>• Needed lab supplies for required classes (reagents, glassware etc)</li> </ul>	
RESPONSIBILITY FOR IMPLEMENTATION	Dr. Patrick Arthur (Head of Training & Research)	
DURATION: 11 months	Commencement: July 2014	Completion: May 2015
PRIMARY CONSTITUENTS: BCMB Faculty Noguchi Institute Faculty All applicants to the MPhil program Existing graduate students	PARTICIPANTS: Dr. Patrick Arthur (Head of Training & Research) BCMB graduate students committee School of Graduate Studies - Dean or Vice Dean Dean of School of Biological Sciences – Prof. Ebenezer Owusu	
ASSUMPTIONS	<ul style="list-style-type: none"> <li>• Enough applicants reply to call for new students</li> <li>• The quality of the applicants is high enough for acceptance into the program</li> </ul>	
FINANCIAL IMPLICATIONS	Advertisement for applicants paid for by the University of Ghana. Logistics and supplies will be procured through the standard & World Bank compliant	

		procurement. Scholarships will be awarded based on merit to new students by the Training and Research committee						
Budget Line Analysis		1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total
1	Scholarships National				25,000			25,000
2	Scholarships Regional				18,750			18,750
3	Logistics and supplies		10,000					10,000
4	Advertisement	0						0
TOTALS			10,000		43,750			53,750

**Action Plan 1: Learning Excellence**

**Timeframe: Year One (and all subsequent years)**

**Activity 1.4: Enrol students and run PhD Program**

RESULT	<ul style="list-style-type: none"> <li>• Enrol 8 PhD students each year</li> <li>• Deliver curriculum to PhD students each year</li> <li>• Assist students in meeting their research requirements</li> </ul>	
ACTIVITY	1.4 – Enrol students and run PhD Program	
OUTPUTS	<ul style="list-style-type: none"> <li>• Enrol 12 students each successive year</li> <li>• Each student successfully completes new curriculum</li> <li>• Engage each student in applied research as part of their degree</li> </ul>	
OUTPUT INDICATOR:	<ul style="list-style-type: none"> <li>• Successful enrolling of 8 students each successive year ( 3 in existing biochemistry program and 5 in new infectious pathogens program)</li> <li>• Composition of students to include 30% regional and 40% female</li> <li>• Retain 90% of students enrolled</li> <li>• Students complete required coursework on schedule in one year</li> <li>• Students complete experiential learning and the comprehensive exam in year two</li> <li>• Complete their research and thesis in 4 years</li> <li>• Student publications of their research</li> <li>• Students obtaining grants</li> <li>• Students attending national and international scientific conferences</li> </ul>	SOURCE OF VERIFICATION <ul style="list-style-type: none"> <li>• School of Graduate Studies</li> <li>• Department of Biochemistry, Cell and Molecular Biology</li> <li>• Director of academic affairs University of Ghana Legon</li> </ul>
IMPLEMENTATION MILESTONES	July 2014 1 <sup>st</sup> & 2 <sup>nd</sup> weeks – Advertise and accept applications for existing and new programs July 2014 3 <sup>rd</sup> & 4 <sup>th</sup> weeks – Review applications and short list for interview August 2014 1 <sup>st</sup> & 2 <sup>nd</sup> weeks – Interview applicants August 2014 3 <sup>rd</sup> week – acceptance offered to selected students August 2014 4 <sup>th</sup> week – Students begin course work August 2014 – May 2015 – first class of students completes course work	
PROCUREMENT	<ul style="list-style-type: none"> <li>• Advertisement for program in the national newspapers</li> <li>• Needed lab supplies for required classes (reagents, glassware etc)</li> </ul>	
RESPONSIBILITY FOR IMPLEMENTATION	Dr. Patrick Arthur (Head of Training & Research)	
DURATION: 11 months	Commencement: July 2014	Completion: May 2015
PRIMARY CONSTITUENTS: BCMB Faculty Noguchi Institute Faculty All applicants to the MPhil program Existing graduate students	PARTICIPANTS: Dr. Patrick Arthur (Head of Training & Research) BCMB graduate students committee School of Graduate Studies - Dean or Vice Dean Dean of School of Biological Sciences – Prof. Ebenezer Owusu	
ASSUMPTIONS	<ul style="list-style-type: none"> <li>• Enough applicants reply to call for new students</li> <li>• The quality of the applicants is high enough for acceptance into the program</li> </ul>	
FINANCIAL IMPLICATIONS	Advertisement for applicants paid for by the University of Ghana. Logistics and supplies will be procured through the standard & World Bank compliant procurement. Scholarships will be awarded based on merit to new students by the Training and Research committee	

Budget Line Analysis		1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total
1	Scholarships National				40,000			40,000
2	Scholarships Regional				15,000			15,000
3	Logistics and supplies		10,000					10,000
4	Advertisement	0						0
<b>TOTALS</b>			10,000		55,000			65,000

## Action Plan 1: Achieving Excellence in Training

Timeframe: Year 1

### Activity 1.5: Outreach events targeting women and minorities

RESULT	<ul style="list-style-type: none"> <li>• Increase the number of women enrolled in MPhil and PhD programs</li> <li>• Increase the number of minority/underserved students enrolled in MPhil and PhD programs</li> </ul>						
ACTIVITY	1.5 outreach events targeting women and minorities						
OUTPUT	<ul style="list-style-type: none"> <li>• Increased numbers of women enrolled in MPhil and PhD programs (both national and regional)</li> <li>• Increased numbers of minority/underserved students enrolled in MPhil and PhD programs (both regional and national)</li> </ul>						
<b>OUTPUT INDICATOR</b> <ul style="list-style-type: none"> <li>• Meet goal of 40% female student enrolment</li> <li>• Completion of 2 high school outreach programs</li> <li>• Completion of 2 university outreach programs</li> <li>• Presence at the Ghana biomedical convention 2015</li> <li>• Website advertising on the Ghana Women in Biomedicine</li> <li>• Hosting of 1 event at each short course for women</li> <li>• Five regional partners host at least one event targeting women, minorities/underserved or both in their communities</li> </ul>				<b>SOURCE OF VERIFICATION</b> <ul style="list-style-type: none"> <li>• School of Graduate Studies</li> <li>• WACCBIP Secretariat</li> </ul>			
IMPLEMENTATION MILESTONES	<p>July 2014, January – May 2015: Advertise through partners across the country to identify students in regions with limited access to internet</p> <p>January – March 2015: Programs at high schools around the country on careers in sciences</p> <p>January – March 2015: Programs at undergraduate institutions around the country on careers in sciences</p> <p>October 2014 &amp; February 2015: Hosting side events for women attendees of short courses</p> <p>July 2015: Information booth at the Ghana Biomedical Convention targeting women</p> <p>Ongoing 2014-2015: Ghana Women in Biomedicine – advertise through their network</p> <p>Ongoing 2014-2015: Regional partners host at least one event each targeting women or minorities/underserved</p>						
PROCUREMENT	No equipment procured						
RESPONSIBILITY FOR IMPLEMENTATION	Dr. Lydia Mosi – ACE Implementation team member, Faculty member BCMB						
DURATION: 12 months	Commencement: July 2014			Completion: July 2015			
<b>PRIMARY CONSTITUENTS:</b> Women & Minorities/Underserved of Ghana BCMB Faculty Noguchi Institute Faculty				<b>PARTICIPANTS:</b> Dr. Lydia Mosi – ACE Implementation team member, Faculty member BCMB Existing MPhil and PhD students National partner institutions – Kintampo and Navrongo Health Research Centers			
ASSUMPTIONS	<ul style="list-style-type: none"> <li>• Qualified women &amp; minority candidates exist</li> <li>• Outreach efforts reach the desired target populations</li> </ul>						
FINANCIAL IMPLICATIONS	Travel, accommodation, per diem to outreach sites. Cost of hosting events (food, logistics, etc), Booth rental at convention						
Budget Line	1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total



Analysis								
1	Travel, accommodation, per diem costs		2,500	5,000	2,500			10,000
2	Food & Logistics for hosting events		1,000	2,000	1,500			4,500
3	Booth Rental					500		500
4	Regional Partner Events	1,250	1,250	1,250	1,250			5,000
TOTALS		1,250	4,750	8,250	4,750	500		20,000

**Action Plan 1: Achieving Excellence in Training**

**Timeframe: Year 1**

**Activity 1.6: Expand existing and develop new curricula for short courses (topics include: Neglected Tropical Disease, Malaria Genomics, Cell Biology)**

RESULT	<ul style="list-style-type: none"> <li>Expanded and improved quality of existing course in Cell biology (additional lab opportunity, relevance to private sector and health service)</li> <li>New curriculum for a short course on Neglected Tropical Diseases</li> <li>New curriculum for a short course on Malaria Genomics</li> </ul>						
ACTIVITY	1.6– Expand existing and develop new curricula for short courses (topics include: Neglected Tropical Disease, Malaria Genomics, Cell Biology)						
OUTPUT	<ul style="list-style-type: none"> <li>Improved curriculum for existing short course in Cell Biology</li> <li>Short course on Neglected Tropical Disease</li> <li>Short course on Malaria Genomics</li> </ul>						
<b>OUTPUT INDICATOR:</b> <ul style="list-style-type: none"> <li>Application number for short courses</li> <li>Enrolment in short courses</li> <li>Regional and Women’s enrolment in short courses (30% and 40% respectively)</li> </ul>				<b>SOURCE OF VERIFICATION:</b> <ul style="list-style-type: none"> <li>Secretariat of the WACCBIP</li> <li>American Society for Cell Biology</li> </ul>			
IMPLEMENTATION MILESTONES	May – June 2014 Neglected Tropical Diseases Curriculum June 2014 – September 2014 Malaria Genomics Curriculum October 2014- November 2014 Cell Biology Curriculum (review and expansion of existing short course)						
PROCUREMENT	Catering for meetings						
RESPONSIBILITY FOR IMPLEMENTATION	Dr. Theresa Manful & Prof. Mark Carrington – Course Directors Neglected Tropical Disease Dr. Marian Nyako & Dr. Anita Ghansah – Course Directors Malaria Genomics Dr. Gordon Awandare & Prof. Kirk Deitch – Course Directors Cell Biology						
DURATION: six months	Commencement: May 2014		Completion: November 2014				
<b>PRIMARY CONSTITUENTS:</b> Faculty of BCMB Faculty of Noguchi Institute				<b>PARTICIPANTS:</b> Dr. Theresa Manful, Prof. Mark Carrington, Dr. Marian Nyako, Dr. Anita Ghansah, Dr. Gordon Awandare, Prof. Kirk Dietsch, Faculty of BCMB Faculty of Noguchi Institute			
ASSUMPTIONS	<ul style="list-style-type: none"> <li>Faculty schedules allowing for development and course implementation</li> </ul>						
FINANCIAL IMPLICATIONS	Travel for regional and international faculty to meet for development of the short course curriculum and planning of the course						
Budget Line Analysis	1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total

1	Travel – International faculty		5,000	5,000				10,000
2	Travel – Regional faculty		1,250	1,250				2,500
TOTALS			6,250	6,250				12,500

## Action Plan 1: Achieving Excellence in Training

Timeframe: Year 1

### Activity 1.7: Run expanded number and variety of short courses

RESULT	<ul style="list-style-type: none"> <li>Run the newly expanded short course in Cell biology</li> <li>Run the short course on Neglected Tropical Diseases</li> <li>Run the short course on Malaria Genomics</li> </ul>						
ACTIVITY	1.7 run expanded number and variety of short courses						
OUTPUT	<ul style="list-style-type: none"> <li>25 students trained in Neglected Tropical Disease</li> <li>25 Students trained in Malaria Genomics</li> <li>25 Students trained in Cell Biology</li> </ul>						
OUTPUT INDICATOR:	<ul style="list-style-type: none"> <li>Application number for short courses</li> <li>Enrolment in short courses</li> <li>Completion of 90% of students enrolled</li> <li>Regional and Women's enrolment in short courses (30% and 40% respectively)</li> </ul>			SOURCE OF VERIFICATION:			
				<ul style="list-style-type: none"> <li>Secretariat of the WACCBIP</li> <li>American Society for Cell Biology</li> </ul>			
IMPLEMENTATION MILESTONES	July 2014: Neglected Tropical Diseases Short Course October 2014: Malaria Genomics Short Course January/February 2015: Cell Biology Short Course						
PROCUREMENT	Laboratory reagents and supplies, catering services						
RESPONSIBILITY FOR IMPLEMENTATION	Dr. Theresa Manful & Prof. Mark Carrington – Course Directors Neglected Tropical Disease Dr. Marian Nyako & Dr. Anita Ghansah – Course Directors Malaria Genomics Dr. Gordon Awandare & Prof. Kirk Deistch – Course Directors Cell Biology						
DURATION: 8 months	Commencement: July 2014			Completion: February 2015			
PRIMARY CONSTITUENTS: Graduate students Health Professions – National and Regional Lab professionals – National and Regional Faculty of BCMB Faculty of Noguchi Institute Faculty across research institutes in Ghana	PARTICIPANTS:  Dr. Theresa Manful, Prof. Mark Carrington, Dr. Marian Nyako, Dr. Anita Ghansah, Dr. Gordon Awandare, Prof. Kirk Dietsch, Graduate students Health Professions – National and Regional Lab professionals – National and Regional Faculty of BCMB Faculty of Noguchi Institute Faculty across research institutes in Ghana						
ASSUMPTIONS	<ul style="list-style-type: none"> <li>Faculty schedules allowing for development and course implementation</li> </ul>						
FINANCIAL IMPLICATIONS	Travel for regional and international faculty to run the courses, Scholarships for regional students, Accommodation for national students on the university campus, catering for workshops						
Budget Line Analysis	1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total
1	Travel – International faculty		5,000	5,000			10,000
2	Supplies and Reagents		2,500	2,500			5,000
3	Catering		5,000	5,000			10,000

4	Regional Student Scholarships		5,000	5,000				10,000
5	Travel – regional faculty		3,000	4,500				7,500
TOTALS			20,500	22,000				42,500

## Action Plan 2: Improving Learning Excellence

Timeframe: Year 1

### Activity 2.1: Refurbish and upgrade Information, Communication and Technology (ICT) infrastructure

RESULT	<ul style="list-style-type: none"> <li>Center Website</li> <li>Assess data storage and computing needs of center researchers</li> <li>Internet access throughout the center and at partner institutions</li> <li>Phone access</li> <li>Software for analysis of biomedical data and center operations</li> </ul>	
ACTIVITY	2.1 – Refurbish and upgrade ICT infrastructure	
OUTPUT	<ul style="list-style-type: none"> <li>Completion of the center website</li> <li>Quantification of data storage and computing needs of researchers</li> <li>Internet access established in the center with increased bandwidth</li> <li>Phone access where needed in the center</li> <li>Software needed for data analysis and center operations purchased</li> </ul>	
<b>OUTPUT INDICATOR:</b> <ul style="list-style-type: none"> <li>Completed and functional center website</li> <li>Total estimate of storage needs determined</li> <li>Reliable internet access established in the center with increased bandwidth</li> <li>Reliable phone service in the center</li> <li>Software installed and being utilized</li> <li>Administrator and staff trained to manage and update the center website</li> </ul>		<b>SOURCE OF VERIFICATION</b> <ul style="list-style-type: none"> <li>Center administrator</li> <li>Center Laboratories</li> <li>University of Ghana Computing Systems Office</li> </ul>
IMPLEMENTATION MILESTONES	<p>May 2014 – WACCBIP website completed and functional</p> <p>October 2014 – Assessment of researcher storage needs</p> <p>November 2014 – procurement of equipment for internet and phone upgrades as well as software</p> <p>December 2014 – Internet access and bandwidth installation/upgrade</p> <p>December 2014 – Phone access upgrade</p> <p>December 2014 – installation of new software on applicable machines</p>	
PROCUREMENT	<ul style="list-style-type: none"> <li>Internet access equipment – routers, access points, cabling</li> <li>Phone access equipment</li> <li>Software for data analysis – dictated by the bid winner for the equipment so that software is compatible</li> <li>Additional licenses for existing statistical analysis programs</li> <li>Anti-virus software for computers</li> </ul>	
RESPONSIBILITY FOR IMPLEMENTATION	University of Ghana Computing Systems- Ms. Ama Dadson, Mr. Emmanuel Togo, Noguchi Institute -Mr. Kwabena Boateng	
DURATION: 1 year	Commencement: Aug 2014	Completion: Aug 2015
<b>PRIMARY CONSTITUENTS:</b> Graduate Students BCMB Faculty Noguchi Institute Faculty Prospective Students & Faculty Partner institutions – National & Regional	<b>PARTICIPANTS:</b> University of Ghana Computing Systems- Ms. Ama Dadson, Mr. Emmanuel Togo ICT & Logistics Committee Members WACCBIP ICT officer Noguchi Institute -Mr. Kwabena Boateng	
ASSUMPTIONS	Majority of existing internet and phone equipment will not have to be replaced	

FINANCIAL IMPLICATIONS		Labor costs of installation						
Budget Line Analysis		1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total
1	Equipment (includes partner access to connect to the center)			25,000				25,000
2	Labor			10,000				10,000
3	Software			13,000				13,000
4	Website Hosting			2,000				2,000
<b>TOTALS</b>				50,000				50,000

## Action Plan 2: Improving Learning Experience

Timeframe: Year 1

### Activity 2.2: Set up e-Learning platform and acquiring e-Resources

RESULT	Ensure that infrastructure to support e-learning is available, train the staff responsible for managing and upkeep of e-learning, assessment of faculty needs for hosting course material, selection of e-learning platform						
ACTIVITY	2.2 – Set up e-Learning platform and acquire e-resources						
OUTPUT	Equipment and Internet IT infrastructure in place ready for an e-learning platform, trained staff ready for implementation of e-learning, estimate of course hosting needs, e-learning platform selected						
OUTPUT INDICATOR:	<ul style="list-style-type: none"> <li>Functioning internet IT Infrastructure and equipment able to support the planned e-learning platform in the center</li> <li>Number staff trained to support e-learning platform</li> <li>Total estimate of each course's hosting needs for the e-learning platform</li> <li>Selection of e-learning platform</li> </ul>				SOURCE OF VERIFICATION University of Ghana Computing Systems – Mr. Barfi-Adomako Owusu, Yusif Amidu and Nyemitee Odjidja, ICT & Logistics Sub-Committee		
IMPLEMENTATION MILESTONES	November 2014 – Needs assessment for course hosting November 2014 - procurement of internet equipment December 2014 – established functional internet access for the center January 2015 – Training of staff to support the e-learning platform March 2015 – selection of e-learning platform						
PROCUREMENT	<ul style="list-style-type: none"> <li>e-Learning portal</li> <li>consultants</li> </ul>						
RESPONSIBILITY FOR IMPLEMENTATION	University of Ghana Computing Systems – Ms. Ama Dadson, Mr. Barfi-Adomako Owusu, ICT & Logistics Sub-Committee, Training & Research Sub-Committee – Dr. Patrick Arthur						
DURATION: 1 year	Commencement: Aug 2014		Completion: July 2015				
PRIMARY CONSTITUENTS: Prospective students Existing students BCMB faculty Noguchi Faculty WACCBIP partners – National & Regional	PARTICIPANTS: University of Ghana Computing Systems – Ms. Ama Dadson, Mr. Barfi-Adomako Owusu, ICT & Logistics Sub-Committee, Training & Research Sub-Committee – Dr. Patrick Arthur, BCMB faculty members, Regional and International Faculty						
ASSUMPTIONS	Internet and phone access all in place under activity 2.1 on schedule						
FINANCIAL IMPLICATIONS							
Budget Line Analysis	1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total
1 Training of center and partner content managers			15,000				15,000
2 Consultants		10,000					10,000
TOTALS		10,000	15,000				25,000



**Action Plan 2: Improving Learning Experience**

**Timeframe: Year 1**

**Activity 2.3: Provision of new Lecture rooms, conference rooms and offices**

RESULT	<b>Initiation of the building of a facility to expand teaching space to improve the student learning experience and Provide offices for visiting faculty to conduct their work and meet with students.</b>						
ACTIVITY	<b>2.3 – Provision of new Lecture rooms, conference room and offices</b>						
OUTPUT	<ul style="list-style-type: none"> <li>Plans for the construction of the learning facility</li> <li>Completion of the procurement process for the construction of the facility</li> <li>Contract awarded for construction to begin</li> <li>Start of construction</li> </ul>						
OUTPUT INDICATOR	<ul style="list-style-type: none"> <li>Plans completed for the new learning facility</li> <li>Timely completion of the procurement process for construction</li> <li>Start of construction by the end of the first year</li> </ul>			SOURCE OF VERIFICATION			
				<ul style="list-style-type: none"> <li>University of Ghana Physical Development &amp; Municipal Services Directorate</li> <li>Procurement department University Physical Development &amp; Municipal Services Directorate</li> <li>Center Leader will monitor procurement process to ensure value for money</li> </ul>			
IMPLEMENTATION MILESTONES	<p>April – July 2014: Design and architecture drawing for proposed new learning facility</p> <p>October 2014: initiation of procurement process</p> <p>January 2015: completion of procurement process and awarding of contract</p> <p>By April 2015: facility construction is in progress</p>						
PROCUREMENT	Contract for new learning facility construction						
RESPONSIBILITY FOR IMPLEMENTATION	<ul style="list-style-type: none"> <li>Dr. Gordon Awandare Center Leader, Constance Cocke Procurement Officer, University of Ghana Physical Development &amp; Municipal Services Directorate</li> </ul>						
DURATION: 1 years	Commencement: April 2014		Completion: April 2015				
PRIMARY CONSTITUENTS: All students and faculty of the University of Ghana Legon General Public	PARTICIPANTS: Center Leader – Dr. Gordon Awandare Deputy Center Leader – Prof. Kwadwo Koram Center Steering Committee Procurement and University Physical Development & Municipal Services Directorate						
ASSUMPTIONS	No community objections as part of the environmental management plan to the building of a new structure						
FINANCIAL IMPLICATIONS							
Budget Line Analysis	1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total
1	Part-payment to contractor			250,000			250,000
TOTALS				250,000			250,000

**Action Plan 2: Improving Learning Experience**  
**Timeframe: Year 1**  
**Activity 2.4: Equipping the Cell Biology Core Facility**

RESULT	<b>Securing core equipment and services for the successful running of WACCBIP</b>						
ACTIVITY	<b>2.4 – Equipping Cell Biology Core Facility</b>						
OUTPUT	Availability of laboratory research equipment for student training and applied research, faculty teaching of students and establishment of fee structure for revenue generating laboratory services. Establishment of training and maintenance partnerships with equipment manufacturers.						
OUTPUT INDICATOR:	<ul style="list-style-type: none"> <li>Increased access to modern research equipment by students and faculty as demonstrated by physical presence and functionality of equipment</li> <li>Training of the research fellows and the two research assistants to maintain and/or repair equipment</li> <li>Establishment of a fee scale for core lab service</li> </ul>				SOURCE OF VERIFICATION		
					<ul style="list-style-type: none"> <li>Procurement and University Physical Development &amp; Municipal Services Directorate</li> <li>Inspection of center laboratories</li> <li>Training certificates of lab staff</li> </ul>		
IMPLEMENTATION MILESTONES	October 2014 – January 2015: Procurement Process for laboratory Equipment, October 2014 – January 2015: Procurement for center vehicle March-April 2015: Training of equipment maintenance personnel						
PROCUREMENT	<ul style="list-style-type: none"> <li>Flow Cytometer</li> <li>SUV 4x4 capabilities</li> </ul>						
RESPONSIBILITY FOR IMPLEMENTATION	Dr. Gordon Awandare Center Leader, Constance Coocke Procurement Officer						
DURATION: 7 months	Commencement: October 2014			Completion: April 2015			
PRIMARY CONSTITUENTS: Prospective Students and Faculty Existing Students BCMB Faculty Noguchi Institute Faculty Partner Institutions – National and Regional Non-Partner Institutions	PARTICIPANTS: Dr. Gordon Awandare Center Leader, Constance Coocke Procurement Officer, Procurement and University Physical Development & Municipal Services Directorate						
ASSUMPTIONS	No equipment shipping delays, maintenance and training contracts can be co-negotiated with all equipment purchased						
FINANCIAL IMPLICATIONS	Purchase of vehicle and Flow cytometer						
Budget Line Analysis	1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total
1 Vehicle			93,000				93,000
2 Flow Cytometer			350,000				350,000
TOTALS			443,000				443,000

**Action Plan 2: Improving Learning Experience**

**Timeframe: Year 1**

**Activity 2.5: Faculty Exchange programs with regional and national institutions**

<b>RESULT</b>		<b>Establish an exchange program network for research between faculty at ACE and other regional partners</b>						
<b>ACTIVITY</b>		<b>2.5 – Faculty Exchange programs with regional and national institutions</b>						
<b>OUTPUT</b>		Increase the number of national and regional faculty coming to the center and going to partner site for lectures, training and research						
<b>OUTPUT INDICATOR:</b>				<b>SOURCE OF VERIFICATION</b>				
<ul style="list-style-type: none"> <li>Number of faculty outreach period into regional and national partner sites</li> <li>Number regional co-authored papers</li> </ul>				<ul style="list-style-type: none"> <li>Center Administrator accounts for faculty presence</li> <li>Online publication database/Elsevier</li> </ul>				
<b>IMPLEMENTATION MILESTONES</b>		November 2014: Signing of MOUs with partner institutions for faculty exchange On-going: faculty exchange						
<b>PROCUREMENT</b>		n/a						
<b>RESPONSIBILITY FOR IMPLEMENTATION</b>		Dr. Gordon Awandare Center Leader, Prof. Kwadwo Koram Center Deputy Leader, Partner Leaders						
<b>DURATION: 7 months</b>		Commencement: November 2014			Completion: April 2015			
<b>PRIMARY CONSTITUENTS:</b> BCMB Faculty Noguchi Institute Faculty National Partner Faculty Regional Partner faculty			<b>PARTICIPANTS:</b> WACCBIP Steering Committee; Office of Research Innovation and Development, Human resources directorate, Dean of Biological Sciences – Prof. Ebenezer Owusu, BCMB Faculty Noguchi Institute Faculty, National Partner Faculty, Regional Partner faculty					
<b>ASSUMPTIONS</b>		Match between the need of the institution and the competence of the faculty interested in exchange						
<b>FINANCIAL IMPLICATIONS</b>		Travel, accommodations, per diem						
<b>Budget Line Analysis</b>		<b>1<sup>st</sup>Qtr</b>	<b>2<sup>nd</sup>Qtr</b>	<b>3<sup>rd</sup>Qtr</b>	<b>4<sup>th</sup>Qtr</b>	<b>5<sup>th</sup>Qtr</b>	<b>6<sup>th</sup>Qtr</b>	<b>Total</b>
1	Travel			5,000	5,000			10,000
2	Accommodation & Per Diem			5,000	5,000			10,000
<b>TOTALS</b>				10,000	10,000			20,000

**Action Plan 2: Improving Learning Experience**

**Timeframe: Year 1**

**Activity 2.6: Engagement of international faculty for teaching courses, workshops and co-supervision of students**

RESULT	Provide students and faculty the opportunity to receiving teaching from, collaborate and interact with the international experts in the field of Cell Biology. Assist center faculty in the development and revision of curriculum.						
ACTIVITY	2.6 - Engagement of international faculty for teaching courses, workshops and co-supervision of students						
OUTPUT	Increased content exposure for students and faculty. Opportunity for research collaboration. Opportunity for international laboratory experiences.						
OUTPUT INDICATOR:				SOURCE OF VERIFICATION			
<ul style="list-style-type: none"> <li>Number international faculty teaching the center</li> <li>Number of international faculty collaborating on research projects</li> <li>Number of international faculty co-publishing with center students and faculty</li> </ul>				<ul style="list-style-type: none"> <li>Office of Research Innovation Development</li> <li>Dean of biological sciences</li> <li>WACCBIP Center administrative office</li> <li>Confirmation from individual international faculty</li> </ul>			
IMPLEMENTATION MILESTONES	On-going: based on availability of international faculty						
PROCUREMENT	n/a						
RESPONSIBILITY FOR IMPLEMENTATION	Training & Research Sub-Committee, Dr. Gordon Awandare Center Leader, Center Administrator (yet to be hired)						
DURATION: 10 months	Commencement: July 2014			Completion: April 2015			
PRIMARY CONSTITUENTS: International faculty			PARTICIPANTS: WACCBIP directorate, Scientific and technical advisory board				
ASSUMPTIONS	Availability and willingness of international faculty to travel to Ghana and host students in their home labs						
FINANCIAL IMPLICATIONS	Travel, accommodation and per diem						
Budget Line Analysis	1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total
1 Travel		5000	5000				10,000
2 Accommodation and per diem		2500	2500				5,000
TOTALS		7,500	7,500				15,000

**Action Plan 3: Develop Regional Partnerships and Programs**

**Timeframe: Year 1**

**Activity: 3.1 – Maintain active website for showcasing centre’s activities**

RESULT	<b>Guarantee active information updates on center website; Advertise center activities and events on websites of partner institutions and other universities.</b>						
ACTIVITY	<b>3.1 – Maintain active website for showcasing centre’s activities</b>						
OUTPUT	<ul style="list-style-type: none"> <li>• Increased website page visit and interest in center’s activities</li> <li>• User friendly and interactive website</li> <li>• Additional outreach and recruitment programs in the sub- region</li> <li>• Trained staff to regularly maintain and update website</li> </ul>						
OUTPUT INDICATOR:	<ul style="list-style-type: none"> <li>• Increase in number of applicant to center’s programs and short courses</li> <li>• increased enrolment of regional students and teaching faculty</li> <li>• Constructive feedback generated from prospective students and faculty through the interactive website.</li> <li>• Certificate of training for center secretariat on website maintenance</li> </ul>				SOURCE OF VERIFICATION WACCBIP administrator, University of Ghana Computing Systems – Ms. Ama Dadson		
IMPLEMENTATION MILESTONES	<p>May 2014 – Website created and running                  June 2014 – Continuous:Online interaction by prospective students and faculty                  June 2014 – Continuous:website updating                  August 2014 – Training of center secretariat staff on website maintenance                  Dec 2014 – continuous: advertisement of center’s programs and activities on websites of partner institutions and other universities</p>						
PROCUREMENT	N/A						
RESPONSIBILITY FOR IMPLEMENTATION	Ms. Eibhlin Chleirigh. Center ICT officer; Ms. Ama Dadson						
DURATION: 1 year	Commencement: May 2014		Completion: April 2015				
PRIMARY CONSTITUENTS: Prospective students Prospective faculty Existing students BCMB faculty Noguchi faculty WACCBIP partners	PARTICIPANTS: CenterICT officer Ms. Eibhlin Chleirigh Ms. Ama Dadson Prospective students Prospective faculty Existing students BCMB faculty Noguchi faculty WACCBIP partners						
ASSUMPTIONS	Internet access in place under activity 2.1 on schedule						
FINANCIAL IMPLICATIONS	Placement of adverts						
Budget Line Analysis	1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total

			r				
1	Advertisement		1,000				1,000
TOTALS			1,000				1,000

**Action Plan 3: Develop Regional Partnerships and Programs**

**Timeframe: Year 1**

**Activity: 3.2: Engagement of regional faculty for teaching and co-supervision of students**

RESULT		Expansion of Center teaching and research faculty base						
ACTIVITY		3.2- Engagement of regional faculty for teaching and co-supervision of students						
OUTPUT		<ul style="list-style-type: none"> <li>Qualified faculty recruited for teaching and co-supervision of students</li> <li>Increased number of center's regional faculty</li> </ul>						
OUTPUT INDICATOR: <ul style="list-style-type: none"> <li>Engagement of regional faculty members</li> <li>Signing of MOUs with partner institutions</li> </ul>				SOURCE OF VERIFICATION University of Ghana Office of Research, Innovation and Development, Center leader – Gordon Awandare; WACCBIP administrator				
IMPLEMENTATION MILESTONES		Aug 2014 – Signing of MOUs with partner institutions Oct 2014 – continuous: Visits by regional faculty to center						
PROCUREMENT		n/a						
RESPONSIBILITY FOR IMPLEMENTATION		Center's steering committee; University of Ghana Office of Research, Innovation and Development, Center leader – Gordon Awandare; WACCBIP administrator						
DURATION: 1 years		Commencement: Aug 2014			Completion: July 2015			
PRIMARY CONSTITUENTS: <ul style="list-style-type: none"> <li>Qualified faculty within the sub-region</li> <li>Prospective students</li> <li>Existing students</li> <li>BCMB faculty</li> <li>Noguchi faculty</li> </ul>			PARTICIPANTS: Center's steering committee; University of Ghana Office of Research, Innovation and Development, Center leader – Gordon Awandare; WACCBIP administrator; Dean of Biological Science University of Ghana – Prof. Ebenezer Owusu; Dean of School of graduate studies University of Ghana – Prof. Kwadwo Ofori.					
ASSUMPTIONS		<ul style="list-style-type: none"> <li>Existence of qualified and willing regional faculty</li> <li>Successful matching of need with qualifications of interested regional faculty</li> </ul>						
FINANCIAL IMPLICATIONS		Travel and subsistence						
Budget Line Analysis		1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total
1	Travel			2,500	5,000	2,500		10,000
2	Accommodation and per diem			1,000	2,000	2,000		5,000
TOTALS				3,500	7,000	4,500		15,000

**Action Plan: Develop Regional Partnerships and Programs – 3**  
**Timeframe: Year 1**

**Activity 3.3: Provide travel awards for regional students and faculty for short visits**

RESULT	<b>Improved collaborative training and research with regional partners</b>						
ACTIVITY	<b>3.3 – Provide travel awards for regional students and faculty for short visits</b>						
OUTPUT	<ul style="list-style-type: none"> <li>• Increase in outreach periods for regional students and faculty to center</li> <li>• Increased research collaboration between center and regional partners</li> </ul>						
OUTPUT INDICATOR:	<ul style="list-style-type: none"> <li>• Increase in number of co-authored publications by center and regional faculty</li> <li>• Increase in number of regional faculty trained at the center labs</li> <li>• Increase in number of students trained at the center labs</li> </ul>					SOURCE OF VERIFICATION Center administrator; Center head of training and research – Dr. Patrick Arthur	
IMPLEMENTATION MILESTONES	October 2014 – Designing of short term research training programs December 2014 – selection of prospective trainees from sub-region January 2015 – continuous: scheduled training visits by selected trainees						
PROCUREMENT	n/a						
RESPONSIBILITY FOR IMPLEMENTATION	Center administrator; Head of training and research – Dr. Patrick Arthur						
DURATION: 1 year	Commencement: October 2014			Completion: July 2015			
PRIMARY CONSTITUENTS: Prospective regional students and faculty BCMB faculty Noguchi faculty	PARTICIPANTS: Center administrator; Head of training and research – Dr. Patrick Arthur Prospective regional students and faculty BCMB faculty Noguchi faculty Laboratory technicians						
ASSUMPTIONS	Training needs of regional students and faculty can be met by the center’s lab resources						
FINANCIAL IMPLICATIONS	Travel, per diem						
Budget Line Analysis	1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total
1 Travel			2,500	5,000	2,500		10,000
2 per diem			1,000	2,000	2,000		5,000
TOTALS			3,500	7,000	4,500		15,000



**Action Plan: Develop Regional Partnerships and Programs -3**  
**Timeframe: Year 1**

**Activity 3.4: Conduct outreach programs and seminar/lecture tours regionally**

RESULT	<b>Publicizing center training programs and resources to regional partners and other universities</b>						
ACTIVITY	<b>3.4 – Conduct outreach programs and seminar/lecture tours regionally</b>						
OUTPUT	<ul style="list-style-type: none"> <li>Increased awareness of center training programs and resources</li> <li>Increased regional student and faculty recruitment</li> <li>Increased collaborative research</li> </ul>						
OUTPUT INDICATOR:	<ul style="list-style-type: none"> <li>New regional partnership agreements</li> <li>Number of regional student enrolment</li> <li>Number of new regional faculty engaged</li> </ul>			SOURCE OF VERIFICATION Center administrator; Center head of training and research – Dr. Patrick Arthur			
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> <li>Dec 2014 – Finalize schedule of regional outreach tour</li> <li>Jan 2015 – continuous: commence regional outreach tour</li> <li>July 2015 – evaluate effectiveness of regional outreach tours</li> </ul>						
PROCUREMENT	n/a						
RESPONSIBILITY FOR IMPLEMENTATION	Center administrator; Center head of training and research – Dr. Patrick Arthur; University of Ghana Office of Research, Innovation and Development – Accountant (Mr. Collins Amofa); Regional partners.						
DURATION: 8 months	Commencement: Dec 2014			Completion: July 2015			
PRIMARY CONSTITUENTS: Prospective Students and faculty in the sub-region BCMB faculty Noguchi faculty Existing regional partners	<u>PARTICIPANTS</u> Center administrator; Center head of training and research – Dr. Patrick Arthur; University of Ghana Office of Research, Innovation and Development – Accountant (Mr. Collins Amofa); Regional partners; Prospective Students and faculty in the sub-region BCMB faculty; Noguchi faculty; Existing regional partners						
ASSUMPTIONS	No disruptions in academic calendar due to faculty strikes Ebola epidemic subsides						
FINANCIAL IMPLICATIONS	Travel, accommodation, per diem, event logistics						
Budget Line Analysis	1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total
1 Travel				2,000	4,500	2,000	8,500
2 Accommodation and per diem				1,000	2,000	2,000	5,000
3 Event logistics				500	500	500	1,500
TOTALS				3,500	7,000	4,500	15,000

**Action Plan: Promote Applied Research - 4**

**Timeframe: Year 1**

**Activity 4.1: Recruitment of two full time research fellows**

RESULT	<b>Effective coordination and execution of student projects, grant applications and research publications</b>						
ACTIVITY	<b>4.1 – Recruitment of two full time research fellows</b>						
OUTPUT	<ul style="list-style-type: none"> <li>• Enrol two new research fellows to support faculty</li> <li>• Efficient organization and execution of student research projects</li> <li>• Efficient coordination of preparation and submission of grant proposals</li> <li>• Efficient coordination of preparation and submission of research publications</li> </ul>						
OUTPUT INDICATOR:	<ul style="list-style-type: none"> <li>• Number of publications and conference abstracts resulting from student projects</li> <li>• Number grant applications submitted</li> <li>• Percentage of on time execution of center research projects</li> </ul>			SOURCE OF VERIFICATION			
				Center administrator; Center head of training and research – Dr. Patrick Arthur; Elsevier database; University of Ghana Office of Research, Innovation and Development.			
IMPLEMENTATION MILESTONES	<p>October 2014 – recruit first research fellow                  January 2015 – continuous: development of student projects and proposals                  February 2015 – submit grant applications                  May 2015 – recruit second research fellow                  July 2015 – commencement student projects</p>						
PROCUREMENT	n/a						
RESPONSIBILITY FOR IMPLEMENTATION	Center administrator; Center leader- Gordon Awandare; Center head of training and research – Dr. Patrick Arthur; University of Ghana Office of Research, Innovation and Development.						
DURATION: 1 year	Commencement: October 2014			Completion: July 2015			
PRIMARY CONSTITUENTS:	Center administrator Center leader – Gordon Awandare BCMB faculty Noguchi faculty Center head of training and research – Dr. Patrick Arthur University of Ghana Office of Research, Innovation and Development.			PARTICIPANTS: Center administrator Center leader – Gordon Awandare BCMB faculty Noguchi faculty Center head of training and research – Dr. Patrick Arthur University of Ghana Office of Research, Innovation and Development Enrolled Master’s and PhD Students.			
ASSUMPTIONS	Availability of qualified and interested scientists with expertise in infectious disease research.						
FINANCIAL IMPLICATIONS	Salary						
Budget Line Analysis	1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total
1 Salary				7,000	7,000	14,000	28,000
TOTALS				7,000	7,000	14,000	28,000

**Action Plan: Promote Applied Research - 4**

**Timeframe: Year 1**

**Activity 4.2: Support Center projects across partners that provide students high quality experience in research**

RESULT	<b>Support for ongoing research at the center through which students will gain hands-on research training</b>						
ACTIVITY	<b>4.2– Support Center projects across partners that provide students high quality experience in research</b>						
OUTPUT	<ul style="list-style-type: none"> <li>• Experiential research training experience for center students</li> <li>• Opportunities for research training attachments for national health professionals</li> <li>• Increased faculty student collaborative research</li> </ul>						
<b>OUTPUT INDICATOR:</b> <ul style="list-style-type: none"> <li>• Joint faculty-student publications</li> <li>• Increase in number of visiting national health professional for short term attachments</li> <li>• Number of students presenting research at international conferences</li> </ul>				<b>SOURCE OF VERIFICATION</b> Center administrator; Center head of training and research – Dr. Patrick Arthur; national health institutions			
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> <li>• September 2014 – Select ongoing faculty research projects on which trainees can be attached for experiential learning</li> <li>• October 2014 – access specific reagents and consumables to be procured for ongoing projects</li> <li>• October 2014 –Procurement for reagents and consumables</li> <li>• December 2014 – continuous: attachment of students to ongoing research projects</li> <li>• January 2015 – continuous – selection of prospective health professionals for short term training at the center.</li> <li>• July 2015 – evaluation of effectiveness of experiential learning program to guide planning for next year</li> </ul>						
PROCUREMENT	Reagents and consumables						
RESPONSIBILITY FOR IMPLEMENTATION	Center administrator; Center head of training and research – Dr. Patrick Arthur; BCMB faculty, Noguchi faculty, National partners						
DURATION: 8 months	Commencement: Dec 2014			Completion: July 2015			
<b>PRIMARY CONSTITUENTS:</b> Prospective national health professional trainees Existing students BCMB faculty Noguchi faculty National Health institutions				<b>PARTICIPANTS:</b> Center administrator Center head of training and research – Dr. Patrick Arthur Prospective national health professional trainees BCMB faculty Noguchi faculty National partners National Health institutions.			
ASSUMPTIONS	Matching of student research interests with ongoing research projects. Matching of training interests of health professionals with ongoing research projects.						
FINANCIAL IMPLICATIONS	Reagents and consumables						
Budget Line Analysis	1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total

1	Reagents and consumables				20,000	10,000	10,000	40,000
TOTALS					20,000	10,000	10,000	40,000

**Action Plan: Promote Applied Research - 4**

**Timeframe: Year 1**

**Activity 4.3: Upgrade research laboratories**

RESULT		<b>Upgraded laboratories to promote ongoing research and training of students</b>						
ACTIVITY		<b>4.3– upgrade research laboratories</b>						
OUTPUT		<ul style="list-style-type: none"> <li>Upgraded existing research labs with fundamental training equipment</li> <li>Renovated existing labs to suit ongoing and new research projects</li> <li>Organized labs in to thematic research areas for specialized training</li> <li>Cell culture facility at Navrongo and Kintampo Health research centers (NHRC and KHRC) for training</li> </ul>						
OUTPUT INDICATOR: <ul style="list-style-type: none"> <li>Modernized labs for research and training</li> <li>Increase in number of visiting national health professional for short term attachments</li> <li>Number of students presenting research at international conferences</li> <li>Malaria parasite culture capability at national partner institutions (NHRC and KHRC)</li> </ul>				SOURCE OF VERIFICATION Center head of training and research – Dr. Patrick Arthur; BCMB faculty; Center research fellows; University of Ghana Procurement – Ms Constance Cocke Director KHRC – Dr. Seth Owusu Agyei; Director NHRC – Dr. Abraham Oduro.				
IMPLEMENTATION MILESTONES		July 2014 – Assessment of laboratory upgrade needs October 2014 – Procurement of required equipment January 2015 – Delivery of equipment and minor civil works March – May 2015 – Set up malaria parasite culture labs in KHRC and NHRC						
PROCUREMENT		Laboratory equipment, minor civil works						
RESPONSIBILITY FOR IMPLEMENTATION		Center leader – Gordon Awandare; Center head of training and research – Dr. Patrick Arthur; Center research fellows; University of Ghana Procurement – Ms. Constance Cocke						
DURATION: 11 months		Commencement: July 2014			Completion: May 2015			
PRIMARY CONSTITUENTS: Center head of training and research – Dr. Patrick Arthur BCMB faculty Center research fellows University of Ghana Procurement – Ms Constance Cocke NHRC staff and KHRC staff				PARTICIPANTS: Center head of training and research – Dr. Patrick Arthur BCMB faculty Center research fellows University of Ghana Procurement – Constance Cocke NHRC staff and KHRC staff				
ASSUMPTIONS		No delays in procurement and delivery of equipment. Civil works are completed on time.						
FINANCIAL IMPLICATIONS		Small lab equipment, minor civil works						
Budget Line Analysis		1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total
1	Centrifuges, microscopes, ice makers, refrigerators, biosafety cabinets, incubators				80,000			80,000

2	Minor civil works					10,000		10,000
TOTALS					80,000	10,000		90,000

**Action Plan: Promote Applied Research - 4**

**Timeframe: Year 1**

**Activity 4.4: Support short training visits for faculty and students outside the ACE**

RESULT		<b>Attachment of students to industry and public health institutions for experiential learning</b>							
ACTIVITY		<b>4.4– Support short training visits for faculty and students outside the ACE</b>							
OUTPUT		<ul style="list-style-type: none"> <li>• Experiential research training for students at national industry and health institution partners</li> <li>• Exchange visits between staff across national and regional partner institutions</li> </ul>							
OUTPUT INDICATOR: <ul style="list-style-type: none"> <li>• Number of outreach periods for center students and faculty</li> <li>• Number of outreach periods for staff of national and regional partner institutions</li> </ul>					SOURCE OF VERIFICATION Center administrator; Center head of training and research – Dr. Patrick Arthur; Regional and National partners				
IMPLEMENTATION MILESTONES		<p>July 2014 – Assessment of training needs of students and faculty to guide outreach attachments</p> <p>October 2014 – Match training needs with partner institutions with requisite training facilities</p> <p>January 2015 – continuous: Commence outreach and exchange visits for national trainees</p> <p>March 2015– continuous: Commence outreach and exchange visits for regional trainees</p>							
PROCUREMENT		n/a							
RESPONSIBILITY FOR IMPLEMENTATION		Center administrator; Center head of training and research – Dr. Patrick Arthur; Regional and National partners							
DURATION: 1 year			Commencement: July 2014			Completion: June 2015			
PRIMARY CONSTITUENTS: Center students BCMB faculty Noguchi faculty Staff and faculty of Regional and National partners				PARTICIPANTS: Center students BCMB faculty Noguchi faculty Center research fellows Center head of training and research – Dr. Patrick Arthur Staff and faculty of Regional and National partners					
ASSUMPTIONS		Matching of student research interests with partners in industry and health institutions. Matching of training needs of staff with partners in industry and health institutions							
FINANCIAL IMPLICATIONS		Travel, accommodation and per diem							
Budget Line Analysis		1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total	
1	Travel				5,000	10,000		15,000	
2	Accommodation and per diem				5,000	10,000		15,000	
TOTALS					10,000	20,000		30,000	

**Action Plan: Promote Applied Research - 4**

**Timeframe: Year 1**

**Activity 4.5: Investigating the aetiology of febrile illness in Ghana**

RESULT	<b>Better understanding of the aetiology of febrile illness in Ghana</b>						
ACTIVITY	<b>4.5– Investigating the aetiology of febrile illness in Ghana</b>						
OUTPUT	<ul style="list-style-type: none"> <li>• Training students on differential diagnosis of diseases</li> <li>• Providing alternative diagnosis for common fevers in Ghana</li> <li>• Production of a policy brief on the aetiology of fevers in Ghana</li> </ul>						
OUTPUT INDICATOR:	<ul style="list-style-type: none"> <li>• Number of Research Publications on febrile illnesses</li> <li>• Policy document on aetiology of fevers</li> <li>• policy document on diagnosis of fevers</li> </ul>			SOURCE OF VERIFICATION Deputy Center leader – Prof. Kwadwo Koram, Head of Training and Research – Dr. Patrick Arthur, Ghana Health service; Ministry of Health, Ghana; Elsevier database			
IMPLEMENTATION MILESTONES	<p>August 2014: Finalize proposal and protocol for febrile illness study                  December 2014: obtain ethical approval for febrile illness research study                  January 2015 –continuous: Begin sample collection for febrile illness research study                  January 2015 – continuous: testing samples for etiological agents                  July 2015: Data analysis and evaluation of research strategy                  October 2015: Draft manuscripts and policy documents from research findings</p>						
PROCUREMENT	Research reagents and consumables						
RESPONSIBILITY FOR IMPLEMENTATION	Deputy Center leader – Prof. Kwadwo Koram, Head of Training and Research – Dr. Patrick Arthur, Ghana Health service; Ministry of Health, Ghana; Navrongo and Kintampo Health Research Centers (NHRC and KHRC), Lekma Hospital, Accra, BCMB faculty, Noguchi faculty, Center students						
DURATION: 15 months	Commencement: August 2014			Completion: October 2015			
PRIMARY CONSTITUENTS:	Patients recruited from the major regional and district health care facilities; Ghana Health Service, National Health centers, Navrongo and Kintampo Health Research Centers (NHRC and KHRC), Lekma Hospital, Accra BCMB faculty Noguchi faculty Center students			PARTICIPANTS: Patients recruited from the major regional and district health care facilities; Ghana Health Service, National Health centers, Navrongo and Kintampo Health Research Centers (NHRC and KHRC), Lekma Hospital, Accra BCMB faculty Noguchi faculty Center students			
ASSUMPTIONS	That febrile illness has a complex aetiology and is regularly misdiagnosed at Ghana’s health institutions						
FINANCIAL IMPLICATIONS	Field work, reagents and consumables						
Budget Line Analysis	1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total
1	Fieldwork			5,000	10,000	5,000	20,000
2	Reagents and supplies			10,000	10,000	10,000	30,000
TOTALS				15,000	20,000	15,000	50,000



**Action Plan: Promote Applied Research - 4**

**Timeframe: Year 1**

**Activity 4.6: Monitoring disease outbreaks**

<b>RESULT</b>		<b>Provision of rapid diagnosis for national and regional disease outbreaks by using expertise and facilities at ACE</b>						
<b>ACTIVITY</b>		<b>4.6 Monitoring disease outbreaks</b>						
<b>OUTPUT</b>		<ul style="list-style-type: none"> <li>Rapid, specific and sensitive diagnosis of major disease outbreaks</li> <li>Support monitoring and assessment of public health events and issues</li> </ul>						
<b>OUTPUT INDICATOR:</b>				<b>SOURCE OF VERIFICATION</b>				
<ul style="list-style-type: none"> <li>Increased collaboration with government and public Health institutions</li> <li>Increased regional collaboration in combating disease outbreaks</li> <li>Increased publicity of ACE through the influence of public health policy</li> </ul>				Deputy Center leader – Prof. Kwadwo Koram, Head of Training and Research – Dr. Patrick Arthur, Ghana Health service; Ministry of Health, Ghana.				
<b>IMPLEMENTATION MILESTONES</b>		<ul style="list-style-type: none"> <li>May 2014: Set-up surveillance system with Ghana public health institutions</li> <li>June 2014 – continuous: sample collection and testing of suspected cases in Ghana</li> <li>November 2014: Set-up surveillance system with regional partner institutions</li> <li>December 2014 – continuous: sample collection and testing of suspected at regional partner institutions</li> </ul>						
<b>PROCUREMENT</b>		n/a						
<b>RESPONSIBILITY FOR IMPLEMENTATION</b>		Deputy Center leader – Prof. Kwadwo Koram, Noguchi faculty, National partners (KHRC, NHRC and Lekma hospital), Regional partners (CNRFP, MRTC, and MRC)						
<b>DURATION: 1 year</b>		Commencement: May 2014			Completion: April 2015			
<b>PRIMARY CONSTITUENTS:</b> Patients recruited from regional and district health care facilities; Ghana Health Service, National Health centers, Navrongo and Kintampo Health Research Centers (NHRC and KHRC), Lekma Hospital, Accra				<b>PARTICIPANTS:</b> Patients recruited from regional and district health care facilities; Ghana Health Service, National Health centers, Navrongo and Kintampo Health Research Centers (NHRC and KHRC), Lekma Hospital, Accra. Deputy Center leader – Prof. Kwadwo Koram Noguchi faculty National partners (KHRC, NHRC and Lekma hospital) Regional partners (CNRFP, MRTC, and MRC)				
<b>ASSUMPTIONS</b>		There will be occasional disease outbreaks						
<b>FINANCIAL IMPLICATIONS</b>		Field work, reagents and supplies						
<b>Budget Line Analysis</b>		<b>1<sup>st</sup>Qtr</b>	<b>2<sup>nd</sup>Qtr</b>	<b>3<sup>rd</sup>Qtr</b>	<b>4<sup>th</sup>Qtr</b>	<b>5<sup>th</sup>Qtr</b>	<b>6<sup>th</sup>Qtr</b>	<b>Total</b>
1	Fieldwork		2,500	2,500	2,500	2,500		10,000
2	Reagents and supplies		2,500	2,500	2,500	2,500		10,000
<b>TOTALS</b>			5,000	5,000	5,000	5,000		20,000

**Action Plan: Promote Applied Research - 4**

**Timeframe: Year 1**

**Activity 4.7: Joint research projects with regional and national institutions**

RESULT	<b>Support collaborative research projects to support training of students at partner institutions</b>						
ACTIVITY	<b>4.7 - Joint research projects with regional and national institutions</b>						
OUTPUT	Active collaborative research projects to support training of students at partner institutions						
OUTPUT INDICATOR:	<ul style="list-style-type: none"> <li>Number of collaborative research projects between center and partner institutions</li> <li>Number of trainees at partner institutions</li> <li>Number of students co-supervised by regional faculty</li> <li>Number of regionally co-authored publications</li> </ul>			SOURCE OF VERIFICATION Center leader (Gordon Awandare), Head of training and research (Patrick Arthur), all partner institutions			
IMPLEMENTATION MILESTONES	June 2014: Develop research proposals for collaborative research with each partner institution August 2014: Sign collaborative research agreements with partner institutions October 2014: procurement for reagents and consumables for collaborative research December 2014: match students to research projects and supervisors based on interests January 2015: Begin collaborative research and training at partner institutions May 2015-continuous: data analysis and project evaluations						
PROCUREMENT	equipment, reagents and consumables						
RESPONSIBILITY FOR IMPLEMENTATION	Center leader (Gordon Awandare), Head of training and research (Patrick Arthur), all regional and national partners						
DURATION: 1 year	Commencement: June 2014			Completion: May 2015			
PRIMARY CONSTITUENTS: National and regional students National and regional partners BCMB faculty Noguchi faculty	PARTICIPANTS: Center leader (Gordon Awandare) Head of training and research (Patrick Arthur) All regional and national partners National and regional students National and regional partners BCMB faculty Noguchi faculty						
ASSUMPTIONS	Timely delivery of reagents and consumables to partner institutions						
FINANCIAL IMPLICATIONS	Field work, reagents and consumables						
Budget Line Analysis	1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total
1 Research costs				20,000	30,000	25,000	75,000
2 fieldwork				5,000	10,000	5,000	20,000
TOTALS				25,000	40,000	30,000	95,000

**Action Plan: Management and governance establishment - 5**

**Timeframe: Year 1**

**Activity 5.1: Establish and operationalize management and leadership of center**

RESULT	<b>Inaugurate the center and management</b>						
ACTIVITY	<b>5.1 – Establish and operationalize management and leadership of center</b>						
OUTPUT	Formal integration of center within the University structure and operationalization of management and academic structures						
OUTPUT INDICATOR	<ul style="list-style-type: none"> <li>Formal launching of center</li> <li>Inauguration of management and academic leadership</li> <li>Regular management meetings</li> </ul>					SOURCE OF VERIFICATION Office of the Vice Chancellor, Pro-Vice Chancellor for Research Innovation and Development (Prof John Gyapong)	
IMPLEMENTATION MILESTONES	October 2014: Formal launching of Center and inauguration of management October 2014: establishment of academic leadership structure October 2014 – continuous (monthly): Meeting of center management						
PROCUREMENT	n/a						
RESPONSIBILITY FOR IMPLEMENTATION	Vice Chancellor (Prof Ernest Aryeetey), Pro-Vice Chancellor for Research Innovation and Development (Prof John Gyapong), Center leader (Gordon Awandare), Deputy Center Leader (Prof Kwadwo Koram), Dean of School of Biological Sciences (Prof Ebenezer Owusu) WACCBIP Implementation committee						
DURATION: 10 months	Commencement: October 2014			Completion: July 2015			
PRIMARY CONSTITUENTS: BCMB faculty Noguchi faculty Enrolled center students National and regional partners	PARTICIPANTS: Vice Chancellor (Prof Ernest Aryeetey) Pro-Vice Chancellor for Research Innovation and Development (Prof John Gyapong) Center leader (Gordon Awandare) Deputy Center Leader (Prof Kwadwo Koram) Dean of School of Biological Sciences (Prof Ebenezer Owusu) WACCBIP Implementation committee: BCMB faculty, Noguchi faculty, enrolled center students, national and regional partners						
ASSUMPTIONS	Full cooperation and commitment from senior University management						
FINANCIAL IMPLICATIONS	Administrative and running costs, logistics for events and meetings, responsibility allowances						
Budget Line Analysis	1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total
1 Administrative and running costs, logistics for events and meetings				4,000	5,000	4,000	13,000
2 Responsibility allowances				16,000	17,000	17,000	50,000
TOTALS				20,000	22,000	21,000	63,000

**Action Plan: Management and governance establishment - 5**

**Timeframe: Year 1**

**Activity 5.2: Set up External Advisory Board (International) and steering committee with 2 subcommittees – ensure regular meetings of all**

RESULT	<b>Inaugurated External advisory board and steering committee who are meeting regularly</b>						
ACTIVITY	<b>5.2 - Set up External Advisory Board (International) and Steering committee with 2 subcommittees – ensure regular meetings of all</b>						
OUTPUT	<ul style="list-style-type: none"> <li>Functional External advisory board made of international experts from academic and industry</li> <li>Functional steering committee made up of national and regional experts from academic and industry</li> </ul>						
OUTPUT INDICATOR	<ul style="list-style-type: none"> <li>Functional External advisory board that meets regularly and advises the Center leader and management</li> <li>Functional steering committee that meets regularly to assist the management in running the center</li> </ul>					SOURCE OF VERIFICATION	
						Pro-Vice Chancellor for Research Innovation and Development (Prof John Gyapong), Center leader (Gordon Awandare)	
IMPLEMENTATION MILESTONES	June 2014: Constitution of advisory board and steering committee memberships August 2014: Obtain University approval of advisory board and steering committee membership October 2014: Inauguration of advisory board and steering committee October 2014 – continuous (quarterly): Meeting of steering committee October 2014 – continuous (annually): Meeting of advisory board						
PROCUREMENT	n/a						
RESPONSIBILITY FOR IMPLEMENTATION	Pro-Vice Chancellor for Research Innovation and Development (Prof John Gyapong), Center leader (Gordon Awandare), Deputy Center Leader (Prof Kwadwo Koram), Dean of School of Biological Sciences (Prof Ebenezer Owusu) WACCBIP Implementation committee						
DURATION: 1 year	Commencement: Jan 2014			Completion: Dec 2014			
PRIMARY CONSTITUENTS: BCMB faculty, Noguchi faculty, national and regional partners	PARTICIPANTS: Pro-Vice Chancellor for Research Innovation and Development (Prof John Gyapong), Center leader (Gordon Awandare), Deputy Center Leader (Prof Kwadwo Koram), Dean of School of Biological Sciences (Prof Ebenezer Owusu), WACCBIP Implementation committee, WACCBIP External Advisory board members, WACCBIP steering committee members						
ASSUMPTIONS	University academic calendar and meeting schedules are not disrupted						
FINANCIAL IMPLICATIONS	travel and per diem						
Budget Line Analysis	1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total
1	Travel and per diem			10,000			10,000
TOTALS				10,000			10,000

**Action Plan: Management and governance establishment - 5**

**Timeframe: Year 1**

**Activity 5.3: Build administrative support team for the center**

RESULT	<b>Established center's secretariat with strong administrative support team</b>						
ACTIVITY	<b>5.3 – Build administrative support team for the center</b>						
OUTPUT	<ul style="list-style-type: none"> <li>Functional center secretariat that provides effective administrative support for training and research</li> <li>Timely procurement of goods and services and preparation of financial reports</li> </ul>						
OUTPUT INDICATOR	<ul style="list-style-type: none"> <li>Employ Center Administrator</li> <li>Employ one accounting assistant, one ICT assistant and one procurement officer to assist Administrator</li> <li>Employ two research assistants to assist Head of research and training</li> <li>Employ one driver and two cleaners</li> <li>Timely procurement of goods and services and preparation of financial reports</li> </ul>					SOURCE OF VERIFICATION Office of Research Innovation and Development (ORID), University of Ghana Human Resource directorate, Center Leader (Gordon Awandare)	
IMPLEMENTATION MILESTONES	August 2014: advertise job positions for administrative staff September 2014: Employ Center Administrator October 2014: Employ one accounting assistant, one ICT assistant and one procurement office to assist Administrator October 2014: Employ two research assistants to assist Head of research and training December 2014: Employ one driver and two cleaners						
PROCUREMENT	n/a						
RESPONSIBILITY FOR IMPLEMENTATION	Office of Research Innovation and Development (ORID), University of Ghana Human Resource directorate, Center Leader (Gordon Awandare), Deputy Center Leader						
DURATION: 1 year	Commencement: August 2014			Completion: July 2015			
PRIMARY CONSTITUENTS: BCMB faculty Noguchi faculty National and regional partners Center Leader (Gordon Awandare) Deputy Center Leader Head of training and research Head of logistics and ICT	PARTICIPANTS: Office of Research Innovation and Development (ORID), University of Ghana Human Resource directorate, Center Leader (Gordon Awandare), Deputy Center Leader, BCMB faculty, Noguchi faculty National and regional partners, Center Leader (Gordon Awandare) Deputy Center Leader, Head of training and research Head of logistics and ICT						
ASSUMPTIONS	Qualified individuals interested in working at the center are available						
FINANCIAL IMPLICATIONS	Salaries						
Budget Line Analysis	1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total

1	Salaries			3,500	19,500	25,000	25,000	73,000
TOTALS				3,500	19,500	25,000	25,000	73,000

### Action Plan: Management and governance establishment - 5

RESULT	<b>Equip and resource center's secretariat to deliver effective administrative support</b>							
ACTIVITY	<b>5.4 – Purchase equipment and furniture and office supplies for administrative team</b>							
OUTPUT	<ul style="list-style-type: none"> <li>Well-equipped and resourced secretariat delivering effective administrative support to center's leadership</li> <li>Timely procurement of goods and services and preparation of financial reports</li> </ul>							
OUTPUT INDICATOR	<ul style="list-style-type: none"> <li>Furnish center secretariat</li> <li>Purchase equipment for secretariat</li> <li>Purchase office supplies</li> <li>Timely procurement of goods and services and preparation of financial reports</li> </ul>				SOURCE OF VERIFICATION Center secretariat, University of Ghana Procurement Unit, Accountant of Office of Research, Innovation and Development (ORID)			
IMPLEMENTATION MILESTONES	October 2014: Procurement for office furniture and equipment October 2014 – continuous: Procurement and delivery of office supplies November 2014: delivery and installation of office furniture and equipment							
PROCUREMENT	Office furniture, equipment, and supplies							
RESPONSIBILITY FOR IMPLEMENTATION	Deputy Center Leader (Prof Kwadwo Koram), Center Administrator, Head of Logistics and ICT (Ms Ama Dadson) University of Ghana Procurement Unit, Accountant of Office of Research, Innovation and Development (ORID)							
DURATION: 8 months	Commencement: October 2014			Completion: May 2015				
PRIMARY CONSTITUENTS: Center Leader (Gordon Awandare) Deputy Center Leader (Prof Kwadwo Koram), Center Administrator Head of Logistics and ICT (Ms Ama Dadson) Head of training and research	PARTICIPANTS: Center Leader (Gordon Awandare) Deputy Center Leader (Prof Kwadwo Koram) Center Administrator Head of Logistics and ICT (Ms Ama Dadson) Head of training and research University of Ghana Procurement Officer (Mrs. Constance Kocke), Accountant of Office of Research, Innovation and Development (Mr. Collins Amofa)							
ASSUMPTIONS	Timely delivery of office furniture and equipment							
FINANCIAL IMPLICATIONS	Desks, chairs, cabinets, computers, printers, photocopier, supplies (paper, ink, files, books etc)							
Budget Line Analysis	1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total	
1	Desks, chairs, cabinets, computers, printers, photocopier		10,000	5,000			15,000	
2	supplies (paper, ink, files, books etc)			2,000	1,500	1,500	5,000	
TOTALS			10,000	7,000	1,500	1,500	20,000	

Timeframe: Year 1

Activity 5.4: Purchase equipment and furniture and office supplies for administrative team

Action Plan: Financial Sustainability - 6

Timeframe: Year 1

Activity: 6.1 – Support faculty to submit three major grant applications

<b>RESULT</b>	<b>Increase externally-generated funds to ACE and partner institutions</b>
<b>ACTIVITY</b>	<b>6.1 – Support faculty to submit three major grant applications</b>
<b>OUTPUT</b>	Successful grants applications will bring in additional funds for training and research
<b>OUTPUT INDICATOR</b> <ul style="list-style-type: none"> <li>Number of new grants won by faculty and regional partners</li> <li>Number of private sector sponsors</li> </ul>	<b>SOURCE OF VERIFICATION</b> University of Ghana Office of Research, Innovation and Development (Mrs Afua Yeboah), Research Development officer at Noguchi (Mrs Nana OyeAkuffo)
<b>IMPLEMENTATION MILESTONES</b>	<ul style="list-style-type: none"> <li>September 2014: Identify suitable grant opportunities and potential private sector sponsors; hold preliminary discussions with private sector organizations</li> <li>October 2014: Assign faculty members to three working groups to develop proposals</li> <li>January 2015: Draft proposals submitted for peer-review and revisions</li> <li>February 2015: Submit first proposal to donor agency or potential private sector sponsor</li> <li>March 2015: submit second proposal to donor agency or potential private sector sponsor</li> <li>April 2015: submit third proposal to donor agency or potential private sector sponsor</li> </ul>
<b>PROCUREMENT</b>	n/a
<b>RESPONSIBILITY FOR IMPLEMENTATION</b>	Center leader (Gordon Awandare), Deputy Center leader (Prof. Kwadwo Koram), Center Research fellows, Head of training and research, BCMB faculty, Noguchi faculty, regional faculty

<b>DURATION:</b> 8 months	<b>Commencement:</b> September 2014	<b>Completion:</b> April 2015
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<b>PRIMARY CONSTITUENTS:</b> Center Research fellows, Head of training and research, BCMB faculty, Noguchi faculty, regional faculty	<b>PARTICIPANTS:</b> Center leader (Gordon Awandare), Deputy Center leader (Prof. Kwadwo Koram), Center Research fellows, Head of training and research, BCMB faculty, Noguchi faculty, regional faculty
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<b>ASSUMPTIONS</b>	There are donor agencies and private sector organizations who will be support of the Center’s research ideas and training programs
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<b>FINANCIAL IMPLICATIONS</b>	Logistics for meetings (meals, stationary, travel, venues)
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Budget Line Analysis	1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total
1 Logistics for meetings (meals, stationary, travel, venues)				2,500	2,500	2,500	7,500
<b>TOTALS</b>				2,500	2,500	2,500	7,500

**Action Plan: Financial Sustainability – 6**

**Timeframe: Year 1**

**Activity: 6.2 – Support Ph.D and M Phil. Students to apply for small student grants from international agencies to support their research, attendance and presentation at meeting**

RESULT	Students obtain external funds to support their research, understand the research funding process as part of their training and participate at conferences						
ACTIVITY	<b>6.2 – Support Ph.D and M Phil. Students to apply for small student grants from international agencies to support their research, attendance and presentation at meeting</b>						
OUTPUT	Students winning external fellowships to help pay for their training and research as well as understanding the process of research funding						
OUTPUT INDICATOR Number of students submitting applications to external donors Number of students winning external fellowships and travel awards	SOURCE OF VERIFICATION Center leader (Gordon Awandare), Head of training and research (Dr. Patrick Arthur)						
IMPLEMENTATION MILESTONES	September 2014: Identify and compile database of suitable opportunities for scholarships, fellowships and travel awards October 2014: Assign faculty members to help students develop proposals January 2015: Internal review of draft proposals and write-shop February 2015 -continuous: Submit proposal to donor agencies or potential private sector sponsors						
PROCUREMENT	n/a						
RESPONSIBILITY FOR IMPLEMENTATION	Center leader (Gordon Awandare), Deputy Center leader (Prof. Kwadwo Koram), Center Research fellows, Head of training and research (Dr. Patrick Arthur), BCMB faculty, Noguchi faculty, regional faculty						
DURATION: 11 months	Commencement: September 2014			Completion: July 2015			
PRIMARY CONSTITUENTS: National and regional students	PARTICIPANTS: Center leader (Gordon Awandare), Deputy Center leader (Prof. Kwadwo Koram), Center Research fellows, Head of training and research (Dr. Patrick Arthur), BCMB faculty, Noguchi faculty, regional faculty						
ASSUMPTIONS	There are suitable fellowship opportunities that WACCBIP trainees will be competitive						
FINANCIAL IMPLICATIONS	Logistics for meetings (meals, stationary, travel, venues)						
Budget Line Analysis	1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	5 <sup>th</sup> Qtr	6 <sup>th</sup> Qtr	Total
1 Logistics for meetings (meals, stationary, travel, venues)				2,500	2,500	2,500	7,500
TOTALS				2,500	2,500	2,500	7,500