

# Africa Centre of Excellence

**Centre for Neglected Tropical Diseases and  
Forensic Biotechnology**

**[ACE 028]**

**Implementation Plan**

**2014 – 2018**

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## **LIST OF ABBREVIATIONS**

ABU: Ahmadu Bello University  
ACE-CNTDFB: African Centre for Excellence, Centre for Neglected Tropical Disease and Forensic Biotechnology  
CBIB: Centre for Bimolecular Interactions Bremen  
CBRT: Centre for Biotechnology Research and Training  
CL: Centre leader  
CMO: Centre's management office  
CNTDFB: Centre for Neglected Tropical Disease and Forensic Biotechnology  
DCL: Deputy Centre Leader  
IAR: Institute for Agricultural Research  
ICT: Information and Communication Technology  
IRAD: Institute for Agricultural Research for Development  
LF: Lymphatic Filariasis  
IAB: International Advisory Board  
MDA: Mass Drug Administration  
MTM: Mobile Training Module  
NABDA: National Biotechnology Development Agency  
NITOR: Nigerian Institute for Trypanosomiasis and Onchocerciasis Research  
NIMR: Nigerian Medical Research Institute  
NTD: Neglected Tropical Disease  
RU: Research Unit  
RU: Research Unit Leader  
SMEs: Small Medium Enterprises  
SC: Steering committee  
WB: World Bank

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

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:**

Africa bears 24% of the global burden of neglected tropical disease, with less than 3% of the World's health force and less than 1 % of world's financial resources.<sup>1</sup> Neglected tropical diseases (NTDs) are a large and diverse group of diseases that disproportionately affect health and livelihood of the poor in the developing world and typically lack attention and funding for research and development. The overall progress towards control of NTDs has been marginal, despite research on fundamental aspects on the pathogens. This has hardly been translated to measures towards discovery, diagnosis, treatment, prevention and eradication of NTDs. One of the main challenges is lack of training in order to produce skilled and qualified manpower to fill in the gaps in higher education for molecular biosciences and technologies in West Africa as well as practical experiences for trainees in these fields. Further challenges of NTDs, include:

- Insufficient knowledge of the distribution and burden of NTDs, since there is no available database on the distribution of NTDs in West Africa.
- Lack of appropriate diagnostic tools
- Lack of effective drugs and treatment failures due to resistant strains of pathogens.
- Absence of suitable vaccines and other preventive strategies such as vector control or other measures to disrupt the life cycle of the pathogens.

Another area underrepresented in the area of molecular biosciences is Forensics. This field is in significant demand for prosecuting crimes in the justice system, paternity and medical needs. The lack of these services has been identified after several recent high profile events such as the Affric Air plane crash.

### **Specific Objectives**

In order to meet these challenges and to improve and expand the number of qualified science professionals in these areas the NTDFS ACE will pursue the following goals;

#### **Education**

1. Develop Short term training in form of modules to meet the needs of middle level expertise like laboratory technologists, health care givers and laboratory managers
  2. Develop a tailor branded graduate curriculum to meet the critical requirement of the emerging field of biotechnology
  3. Develop graduate curriculum for MSc and PhD Biotechnology with exceptional bias to regional needs
- Develop a short term training in the area of Forensics with bias towards the improvement of the content and quality of the security outfits within the West African region. To build human capacity in the area of forensic science required in criminal investigation and forensic analysis involving biological specimens through short term training programmes in forensic biotechnology

#### **4. Industry**

- Conduct training in medical diagnostics with tools of molecular biology in league with the private sector. To produce middle level workforce/manpower required in the

development, analysis and production of reagents/diagnostic kits for science, pharmaceutical and biomedical based industries.

- Provide support service for reference hospitals for diagnosis at reasonable cost.
- To improve the professional skill and knowledge of biomedical, medical, science based technologists and scientists involved in laboratory diagnosis of diseases and infections through short term training programmes
- To produce high level manpower with improved capacity, research competence and skill in the area of biotechnology and related disciplines (science, medicine, pharmaceutical, agricultural) through the mounting of postgraduate degree programmes in biotechnology

#### **Applied Research**

- Conduct high level practical training relevant to laboratory work on NTD,
- Conduct joint research regional training to build competence in development, planning and performing research projects, with applied biotechnology as major focus
- Develop and strengthen internationally accepted quality standards in project planning, performance documentation etc.
- capacity building in networking and grant applications

#### **Methodology**

**In order to achieve these objectives, the following programs will be developed**

- 1. MSc Biotechnology**
- 2. PhD Biotechnology**
- 3. Diploma in Forensic Science**
- 4. MSc Forensic Science**
- 5. Expanded research on Trypanosomiasis, Filariasis, Onchocerciasis and Rabies**

To achieve the listed objectives, NTDFB ACE, would mount the following training programmes:

- Short term course modules (1 -2 months duration) in the area of Recombinant DNA Technology, Proteomics, Genomics, Bioethics and Biosafety, Microarray, Bioinformatics, etc. Five modules would be run twice in the first year which will be increased to six modules twice in the subsequent years. These modules will offer both laboratory and theoretical courses.
- One year Diploma and Postgraduate diploma programmes in Forensic Biotechnology, Forensic Science, Epidemiology, Pharmaceutical Biotechnology, etc. They will involve both laboratory and theoretical courses and internships in public and private analytical labs, industries and healthcare centers.
- Postgraduate degree programmes (M.Sc. and PhD) in Biotechnology, with emphasis on neglected tropical diseases such as Filariasis, Onchocerciasis, Trypanosomiasis and Rabies.

The strategy of the project is summarized in Figure 1. This figure highlights the close interaction between all work packages in the project and the role that efficient management (WP-5) will play in fostering these interactions and meeting our milestones. Likewise training will play an important role in the CNTDFB project. Training will be included as both a separate work package

(WP-4) as well as an integral component of each RTD work package (WP-1, -2 and -3). Close interactions between WP-1, -2 and -3 by funneling data via the communication conduits established is an essential component of the CNTDFB project and contribute to the success of this project by expediting rapid progress towards meeting our deliverables and milestones. In concise terms the guiding strategy behind our project is as already indicated in the project objectives - "conduct training in the selected NTDs, develop capacity in Forensics, conduct applied regional research in vaccine and drug development on the selected NTDs, and using rapid parasite relevant screening assays to develop therapeutic agents"

Finally WP-4 places a great emphasis on training of scientists active within the project. Training and capacity building is important, as human resources are the key to a sustained fight against NTDs. The aim is also to encourage good working conditions in the targeted organizations in Nigeria, Cameroun, Ghana and Benin Republic. To that end, long term co-operations and networking between the project members will be encouraged.

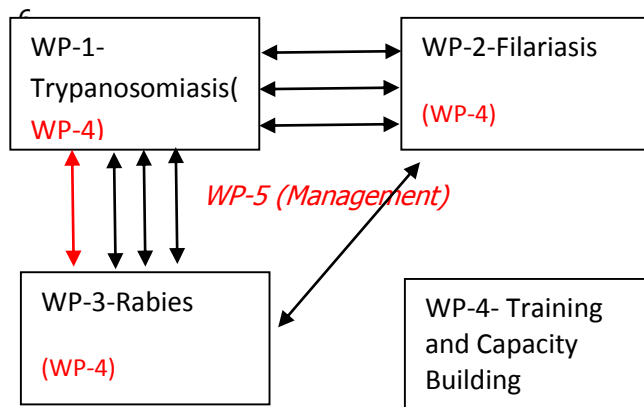


Figure 1 Project Strategy

#### Partners:

First experience in the development and performance of such modules is already available from previous capacity building programs in a collaboration between ABU and the University Bremen funded by the German Research Council (DFG). More recently, during the last six months specific training programs have been organized and held by the partners of the ACE: training course in molecular diagnosis of trypanosomiasis in animal infections (December 2013 in Ngaoundere, Cameroon, participants: local Master course, Ph.D. students from the university and staff from the research Institute IRAD) Also collaborative workshop on standardized tsetse flies collection, and their section dissection, preservation and documentation of tsetse flies samples (February 2014 in Yankari, Nigeria, participants: Master and Ph.D. Students from the three participating universities in Nigeria, Cameroon and Germany, staff scientists from NITR)

## **National Partners**

### **NITOR**

The institute has a lot of expertise that will be deployed to train the students in trypanosomosis. Similarly, middle-level employees of NITOR will benefit from the MSc and PDG training mounted by ACE. The NITOR is a vibrant collaborator with ACE in tsetse and trypanosome research, therefore harnessing funds targeted at controlling *Trypanosoma spp*, *Glossina spp* and African trypanosomosis. NITOR provides facilities, infrastructure to accommodate the internship that will empower sharing facilities, skills and knowledge between ACE and NITOR.

### **NIMR**

The institute has a mandate on human medical research therefore their expertise will be employed to train students in human African trypanosomosis, lymphatic Filiriasis and Onchocerciasis. PhD, MSC and PDG training will be conducted in collaboration with ACE as visiting lectures. Internship programme will provide facilities and research activities to address the challenges in the human medical research in the ACE.

### **University of Abuja**

The University is located in Abuja. It will be involved in workshops and training of staff, grant writing and capacity building. The ulterior aim is to advance the competence of scientists and students while utilizing their experience in e learning.

### **Federal University of Technology Minna**

The University was a recipient of Word Bank Step B Center of Excellence in Biotechnology. It has state of the art equipment as well as scientists with expertise in Neglected Tropical Disease. The FUT Minna has been involved in Nanomedicine research and will bring their experience in raising the standard of training capacity. By using the MTM, it can serve as a center to deploy training in the North Central Zone.

### **University of Lagos.**

The University is located in the former federal capital and a premier University. It has a formidable faculty staff in natural Sciences that has been involved in research on Filariasis. Apart from being a source of potential graduate students. It will serve as a hub for short term training and outreaches.

### **Nasarawa State University Keffi**

The University's major strength is in the area of Biology/Microbiology. It also has laboratories with modern teaching facilities. Also it has teaching staff that are involved in e learning and a highly organized graduate school. NSU is going to support the ACE in the provision of facilities and resource persons for the deployment of the MTM

## **Regional Partners**

### **University of Ngaoundere**

The University of Ngaoundere in Cameroon has an existing collaborator in Tsetse and Trypanosome research in Africa. The partner will provide the facilities for screening and collecting of samples from human and animals to enhance the database for tsetse and trypanosome. The existing collaboration has already been exercised in training of students and internship in Cameroon by members of the ACE, conducted in April 2014. This collaboration will continue into the lifespan of the ACE.

The Institute of Agricultural Research for Development (IRAD) Cameroon is also a partner that will provide support in training, internship to collect and screen samples from humans and animals to collate the trypanosome database within the region. The IRAD was also a beneficiary of the April 2014 training.

### **University of Benin Republic Cotonou**

The University has an advanced laboratory and has been involved in teaching, research and disease surveillance. It is expected to be a hub towards outreach with the francophone countries on the deployment of the Mobile Training modules.

### **Kwame Nkrumah University of Science and Technology**

The Institution is going to provide capacity for training. It will participate in joint training for middle level scientist as well as short term students

## **International Partners**

### **University of Bremen**

The Center for Biomolecular Interactions Bremen (CBIB) and the CBRT at ABU have already a well-established collaboration in capacity building and training especially in tsetse and trypanosomes research which is funded by DFG. Based on its success, the current advancements in teaching and infrastructures will be largely extended to provide hands on training and visiting lectures in Nigeria and Cameroon in student internships in Germany. Furthermore, the experience of this partner will be fundamental in the development of e-learning facilities to drive target goals of new training programs also for the other research programs in the ACE including the development of accredit able programs. Overall, this partnership will play a central role in the ACE implementation of postgraduate education and research.

### **George Washington University USA**

The Department of Forensics at the GWS is a world class forensic center with a highly rated faculty content. CNTDFB will partner with GWS in the development of infrastructure and

capacity of the Forensic Science unit. It shall also participate in the development of the diploma Forensic biotechnology and MSc forensic science. It shall also guide the center towards obtaining International accreditation

#### **Kuvin Medical Centre for Hebrew University**

The center participated in the curriculum development of the Forensic postgraduate program in Forensic biotechnology. The center will contribute to the ACE by training students and faculty of the ACE in the fields of Forensic science an essential factor to initiate this programme at the ACE.

#### **University of Western Cape SA**

**The Department of Forensic of the UWA is foremost in Africa and has served to develop the status of several Forensic outfits in the continent. Our ACE shall partner with the UWC in Training and Capacity building. Development of modules for the training of security sectors of government.**

#### **Important Changes Made:**

The challenges and gaps in higher education in the area of molecular biosciences and technologies in the West African region include: (i) lack of necessary skills and knowledge found in graduates from current postgraduate programs. (ii) Lack of practical experience in experimental work (iii) lack of experience in project development and understanding and sticking to internationally accepted standards in research and development and exposure to international collaboration.(iv) A disconnect with the private sector. This challenges, have been the basis of the key drawback to most proliferating Universities in West Africa. ABU is a major hub in developing human infrastructure for younger universities in Nigeria and the West Africa as such takes the burden to evolve strategies in order to sustain its position as a center of teaching and learning.

In addressing the challenges, ACE CNTDFB will develop sustainable education programs with emphasis on: (i) High level practical training relevant to laboratory work on NTD, biotechnology, needed for medical diagnostics and forensic science. (ii) Research project based training to build competence in development, planning and performing research projects, with applied biotechnology as major focus (iii) Strengthening of internationally accepted quality standards in project planning, performance documentation etc. (iv) Develop linkage with the private sector: (DNA labs and Innovative Vaccine Company). In order to obtain a high level of flexibility and meet the need of postgraduate students from universities as well as from the public (research institutes, hospitals, police) and private sector (small and medium size enterprises) the education program of the ACE will be characterized by Modular structure throughout the programs addressing participants at all levels of experience

In the conceptualization and design, the Centre of Excellence adopted new ways of doing things in terms of organizational structure and conducting research in the University (Ahmadu Bello University). Some of these changes arose from lessons learnt from the recently World Bank

funded Science and Technology Education Post basic (STEP-B) projects in the University and also drawing from best practices from various institutions within and outside the country.

One of the changes being brought in by the centre, is the new organogram. This organizational hierarchical structure is virtually independent of the often cumbersome university administrative machinery. It ensures speedy administrative approvals, release of funds, procurement and decision making.

Secondly, the separate research units established in the Centre is also a departure from currently existing modes of conducting and monitoring research activities within the university. Each unit has a specific research theme focus and draws researchers from various academic departments of the university and collaborating institutions. This ensures pooling together and sharing of ideas. This practice will result in high quality research outputs and publication of high impact articles, which had hitherto been a major problem in the institution. Since each research unit is encouraged to source funds for its activities, it will also ensure healthy competition for grants.

Another area in which a departure from the hitherto norm is in the area of development of curricula for the programmes and their accreditations. The curricula for the programmes (both short term training and research based) are being developed with inputs from international experts and collaborating regional and international institutions. This will facilitate international accreditation for the programmes.

It is also the goal of CNTDFB to deploy the relevant expertise in molecular biology techniques to address challenges in forensic science to support crime investigations. The ACE is expected to leverage on its expertise to offer tailored capacity building courses e.g. to the Nigerian Police and other security outfits. The CL's membership of the Presidential Committee on the Nigerian Police Forensic and DNA Laboratory, uniquely positions the Center as a potential hub to be engaged in consultancy for governments. The ACE will work in an array of environment that is a major diversion from conventional Ivory Tower practice. ACE CNTD graduate students can practically implement their skills in problem solving e.g. diseases control and surveillance, improvement on the fight against crime which to this moment is still pedestrian and connect with the private sector in a mutually beneficial pattern.

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

**Table 1: Overview of first project year**

Code	Priority Rank	Result/Activity/Task	Budget Estimate (US\$)		
			ACE leader	Partners	Total
Action Plan 1	(1 high 5 low)	ACE Action Plan to Achieve Teaching and Learning Excellence	542,200	16,500	558,700
1	1	Development of regular teaching modules	14,000	6,000	20,000
2	1	Development of mobile modules	17,000	3,000	20,000
3	1	Development of tutoring and mentoring programs	1,600		1,600
4	1	Development of curricula and approval of new graduate programs	5,000	7,500	12,500
5	2	Running graduate and short course programs	56,000		56,000
6	2	Establishment and maintenance of library	14,100		14,100
7	3	Implementation of field study course work	83,400		83,400
8	1	Reliable general infrastructure	80,300		80,300
9	1	Customization of teaching rooms	57,800		57,800
10	1	Customization of teaching laboratories	158,000		158,000
11		Development of faculty teaching expertise	15,000		15,000
Subtotal	1		542,200	16,500	538,700

Code	Priority Rank	Result/Activity/Task	Budget Estimate (US\$)		
			ACE leader	Partners	Total
Action Plan 2	(1 high 5 low)	ACE Action Plan to Achieve Excellence in Applied Research	864,200	72,000	936,200
1	1	Implementation of animal facility	137,200		137,200
2	3	Implementation of cold room facility	40,000		40,000
3	2	Implementation of central support facility	55,000		55,000
4	3	Implementation of chemical and store facility	30,000		30,000
5	3	Implementation of analysis and central research laboratories	58,000		58,000
6	3	Implementation of biobank	30,500		30,500
7	2	Implementation of vaccination development facility	128,000		128,000
8	2	Implementation of ICT facility	21,500		21,500
9	3	Research project funding scheme	310,000		310,000
10	1	Dissemination of research output	18,000		18,000
11	4	Exchange program for faculty and students	36,000		36,000
		<b>Subtotal</b>	864,200	72,000	936,200

Code	Priority Rank	Result/Activity/Task	Budget Estimate (US\$)		
			ACE leader	Partners	Total
Action Plan 3	(1 highest 5 lowest)	ACE Action Plan to Achieve regional Outreach to students and faculty	93,800	74,000	167,800
1	1	Development of regional partnership network	21,000		21,000
2	1	Development of industry partnership network	2,000		2,000
3	2	Implementation of PR Website	7,700		7,700
4	2	Organization of workshops	21,500		21,500
5	3	Support faculty grant writing	7,100		7,100
6	4	Specialized technique training	14,000	65,000	79,000
7	5	Regional faculty exchange	4,500	9,000	13,500
8	4	Regional students exchange			
9	2	Recruitment events for women and other undeserved populations	6,000		6,000
10	5	Language support for faculty and students	10,000		10,000
		<b>Subtotal</b>	93,800	74,000	167,800
Action Plan 4	(1 highest)	ACE Action Plan to Achieve Excellence in laboratory	96,200	0	96,200

Code	Priority Rank	Result/Activity/Task	Budget Estimate (US\$)		
			ACE leader	Partners	Total
	5 lowest)	and degree program operations			
1	1	General project management/Centre operations	45,700		45,700
2	4	Implementation of staff development plan	1,200		1,200
3	3	Implementation of research project funding scheme	1,200		1,200
4	2	Hiring of staff	28,000		28,000
5	2	Student and faculty evaluation and feedback on programs	2,200		2,200
6	3	Accreditation of teaching programs	17,900		17,900
		<b>Subtotal</b>	96,200		96,200
Contingency	(1 high, 5 low)	Expected output	100,000		100,000
<b>TOTAL BUDGET</b>			<b>1,696,400</b>	162,500	<b>1,858.900</b>

**Table 2: Overview distribution among partners**

Code	Result/Activity/Task	Budget Estimates (USD)														
		Uni Abuja	FUT MINNA	Nasarawa SU	NITOR	NIMR	DNA Labs Nig Ltd	Innovative BIOTEC Nig Ltd	U Ngaundere	U Benin Rep	KNUST	IRAD	U Western Cape	U Bremen	George Washington U	Hebrew U
Action Plan 1	Achieve Teaching and Learning Excellence											1,000	12,000	2,000	1,500	
1	Development of regular teaching modules												6,000			
2	Development of mobile modules												3,000			
3	Development of tutoring and mentoring programs															
4	Development of curricula and approval of new graduate programs											1,000	3,000	2,000	1,500	

5	Running graduate and short course programs																
6	Establishment and maintenance of library																
7	Implementation of field study course work																
8	Reliable general infrastructure																
9	Customization of teaching rooms																
10	Customization of teaching laboratories																
11	Development of faculty teaching expertise																
	Subtotal												1,000	12,000	2,000	1,500 0	
<b>Action Plan 2</b>	<b>Achieve Excellence in Applied Research</b>													<b>72,000</b>			

1	Implementation of animal facilities																
2	Implementation of cold room facility																
3	Implementation of central support lab																
4	Implementation of chemical and supplies store																
5	Implementation of analysis and central research labs																
6	Implementation of biobank																
7	Implementation of vaccination development facility																
8	Implementation of ICT facility																
9	Research project funding scheme																
10	Dissemination of research output																

11	Exchange program for faculty and students													72,000			
	Subtotal													72,000			
<b>Action Plan 3</b>	<b>Achieve Outreach to students and faculty</b>	17,000	17,000		14,000				17,000					9,000			
1	Development of regional partnership network																
2	Development of industry partnership network																
3	Implementation PR Website																
4	Organization of workshops																
5	Support of faculty grant writing																
6	Specialized technique training	17,000	17,000		14,000				17,000					9,000			
7	Regional faculty exchange																

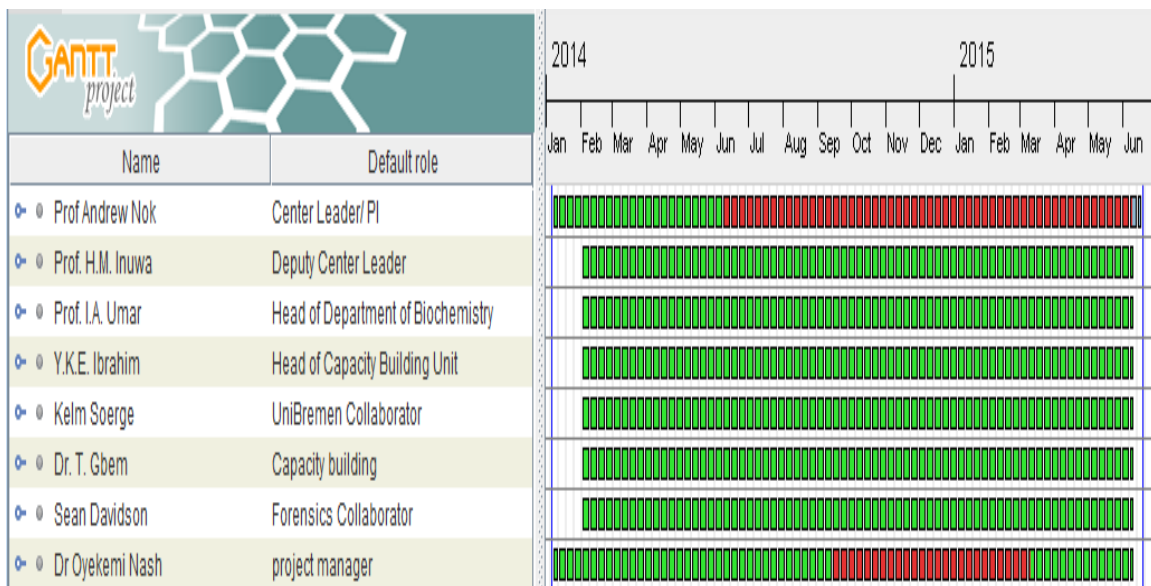
8	Regional student exchange																
9	Recruitment events for women and other underserved populations																
10	Language support for faculty and students																
	Subtotal	17,000	17,000		14,000				17,000					9,000			
<b>Action Plan 4</b>	<b>Achieve Excellence in laboratory and degree program operations</b>																
1	General Project management /Centre operations																
2	Implementation of staff development plan																
3	Implementation of research project funding scheme																
4	Hiring of staff																
5	Student and faculty evaluation and feedback on programs																

6	Accreditation of teaching programs																
	Subtotal																
	Contingency																
	TOTAL BUDGET	17,000	17,000		14,000				17,000				1,000	93,000	1,500	2,000	

### 3. TIMING OF PLANNED ACTIVITIES FOR ENTIRE PROJECT PERIOD

Table 3: Work plan for the project (Gantt chart) <http://www.ganttproject.biz/>

Task Name	Start Date	End Date	2014				2015			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1										
2										
3	<b>Project Time Line</b>	<b>02/03/14</b>	<b>06/30/15</b>							
4	<b>Action Plan 1: ACE Action Plan to Achieve Teaching and Learning Excellence</b>	<b>02/11/14</b>	<b>06/29/15</b>							
5	Activity 1.1: Development of regular teaching modules (MSc and PhD courses)	02/11/14	05/22/14							
6	Activity 1.4: Development of curricula and approval of new post graduate programs	02/12/14	05/23/14							
7	Activity 1.8: Reliable General Infrastructure (Procurement and installation of learning equipment in refurbished laboratories and classrooms)	11/26/14	06/29/15							
8										
9	<b>Action Plan 2: ACE Action Plan to Achieve Excellence in Applied Research</b>	<b>09/09/14</b>	<b>06/19/15</b>							
10	Activity 2.01: Design of new animal facility	09/09/14	06/10/15							
11	Activity 2.03: Implementation of Central laboratory support	04/14/15	06/19/15							
12	Activity 2.05: Implementation of analysis and central research laboratories	11/20/14	03/26/15							
13	Milestone - Dissemination of research output	12/09/14	12/23/14							
14										
15	<b>Action Plan 3: ACE Action Plan to Achieve Outreach to students and faculty</b>	<b>07/17/14</b>	<b>06/17/15</b>							
16	Activity 3.01: Regional partnership development	08/07/14	06/04/15							
17	Activity 3.03: Implementation of PR Website	09/16/14	10/31/14							
18	Activity 3.04: Organization of Workshops	07/17/14	06/17/15							
19	Activity 3.05: Support Faculty Grant Writing	02/04/15	03/20/15							
20	Activity 3.06: Specialized research technique training for national and regional faculty and students	07/17/14	06/17/15							
21	<b>Action Plan 4: ACE Action Plan to Achieve Excellence in laboratory and degree program operations</b>	<b>06/11/14</b>	<b>06/26/15</b>							
22	Activity 4.01: General Project Management/Center Operations	06/11/14	06/04/15							
23	Activity 4.02: General Project Management/Center Operations	06/16/14	06/08/15							
24	Activity 4.04: Hiring of Staff	03/18/15	06/26/15							
25	Activity 4.05: Student and faculty evaluation and feedback on programs	03/18/15	06/19/15							
26	Activity 4.06: Accreditation of Teaching Programs	05/26/15	06/26/15							
27	<b>Action Plan 5: Contingency</b>	<b>01/14/14</b>	<b>06/10/15</b>							
28	Activity 5.01: Contingency	01/14/14	06/10/15							



## **4. IMPLEMENTATION ARRANGEMENTS**

### **4.1 Guiding rules and regulations**

The project shall be guided by transparency and fairness towards all participating members of the consortium. There shall be clear distribution of resources as indicated in the implementation document. The overall coordination of the different project components will be the responsibility of ACECNTDFB and optimized to ensure that the technical objectives of the project are accomplished within the constraints of budget and time schedule. This will be assured through the project CMO that will be comprised of the following: (a) The CL (Prof AJ Nok), who has participated in several large international teams funded by the WB, McArthur, Carnegie, EU DFG and other international funding agencies. (b) An in-house consultant, who will be assisted by the administrative and financial staff of ABU will ensure that all required information from the Consortium partners, is received in a timely and efficient fashion in order to meet reporting deadlines and assist in preparing the financial cost statements.

The CL shall amongst others ensure prudent distribution of the funds to the national institutions: University of Abuja, Federal University Minna, Nasarawa State University, NITOR, NIMR as well as Regional Institutions; University of Ngaundere, University of Benin Republic, KNUST. The same principle of objective distribution of funds shall be accorded International Partners; University of Bremen, University of Western Cape, George Washington University. On account of the uniqueness of the initiative, ACECNTDFB shall also involve a representative of the private sector (DNA Labs Nigh Ltd as SC member). This is to ensure the equitable participation of this sector towards advancing the objectives of the center. The CL will take ultimate responsibility for the management of the project. Decisions will be taken in consultation with members of the SC representing all partners.

The SC shall include; ABU, University of Bremen, University of Ngaundere, IRAD, Innovative Biotech Nig Ltd, representing the partnership. The SC will review and guide research and training through the project and have final responsibility for all decisions including Curriculum development, Training, Supervision of projects, Seminars and publications. The SC will hold regular discussions through telephone conference calls (based on a prior arranged agenda), sub-groups and face-to-face meetings, take interim decisions and set milestones, in addition to the annual meeting where a major review of progress will be held. It has to be emphasized that the opinions of the project members and the IAB will be taken with due respect and diligence. Whenever possible, full consensus on key issues will be sought. Full minutes and decision reports of the SC will be produced with support of the CMO and circulated in the ACE following interim and annual meetings within 21 days.

An Annual Project Review Meeting will be held to review achievements and agree on prospective milestones. This annual meeting will be held with all researchers involved in the project or their representatives to assess the outcomes of the project.

## **4.2 Governance structures**

The management structure is as presented in the Figure 1 Prof. AJ Nok is the Centre Leader and, responsible for the management of the collaborating partners within and ABU Zaria.

Good governance at the core of the Centre's activities will be achieved through the CMO headed by the CL with respective departments in ABU, National partners, Regional partners and the private sector. The key members are listed in Prof Nok, the deputy leader Prof Mairo Inuwa, Unit leaders of the research cores in Cameroun, Ghana and Benin Republic.

To ensure the success of the programme, the center leader and deputy center leaders will comprehensively monitor partners/collaborators activities. They will receive progress reports from the project leaders from collaborating Institutions; review all planned activities and suggest adjustments, as necessary; monitor outputs and outcomes of ACECNTDFB research and training projects, and report to the IAB

In ABU, Departments of Biochemistry, Biological Sciences, veterinary Public health, shall be involved Mathematical and Computer Sciences and the Department of English and Language studies are all partnering for the success of the propose towards service delivery in teaching and research excellence. The department of French shall offer courses in French for preparatory students from francophone countries gratis

The **Centre's management office (CMO)** will be responsible for the overall coordination of the different project components (research and capacity building units) and will meet on a monthly basis. It has to ensure that the technical objectives of the project are accomplished within the constraints of budget and time schedule. The CMO will be comprised of the unit leaders representing the capacity building unit, which will be responsible for the development of new postgraduate courses, coordinating and monitoring the proposed postgraduate programs (quantum and quality of output, graduation rate, evaluation of courses and the research units working on the NTDs. Student representatives of the respective programs will participate in assessing the output of the programs. Each unit leader responsible for a NTD research program will chair a Work Package Team that is made up of representatives of each member institute participating in the research unit. The unit leaders will be responsible for the management of the technical, scientific and reporting aspects of their specific units. The leader will ensure efficient communication between members of the teams and that the milestones

are met. The leaders of the ACE's core facilities (depository, vaccine development and ICT support) will report directly to the CMO.

A **steering committee (SC)** composed of representatives to cover teaching, research and the private sector. From national regional and international partners. The SC shall meet twice a year for important strategic decisions and to maintain quality control. The unit and core facility leaders will report to the SC in due time on the timeline progress of the respective

An **international advisory board (IAB)**, comprised of external members representing well-known scientists familiar with the molecular aspects of the NTDs and clear expertise and interest in translational research, will support the SC and CMO in their work. The CL reports to the IAB once a year, before it will meet with the SC to discuss the progress and give advice. The IAB shall comprise of highly rated and distinguished scientists in the areas of Trypanosomiasis, Rabies Filariasis and Education.

#### **4.3 Incentive structures**

The ACE seeks to promote best practices and collaboration in NTD amongst other objectives, which hitherto had been lacking within the African sub-region. The Centre hopes to put in place programs that will be geared towards ensuring maximum potential for success. To achieve this, the Centre leader and staff is scientist that have not only showed leadership potentials in their various research activities, but have also excelled in their chosen fields. Therefore, an action for sustainable financing is the lifeline of the center to achieve continuous unmatched programs to maintain the lead in its national, regional and global vision.

The Centre shall support all conferences with full complements on outcomes that are linked to its mandates. This shall include payment for air fare, Joint publications, Payment for publication tariff and per diem.

The incentive will be a full complement support by the ACE. Partner's input are invaluable not only in curriculum development but implementation of the curriculum since they will serve as resource persons for the ACE. All forms of meetings and discussion are by consensus and the university (ABU) shall cover the cost of the meeting. Meetings are all types, face to face, skype and telephone. The partners will participate in visiting lectures, interns and joint publication. It is noteworthy that at the inauguration representatives from partner Institutions from Cameroun actively participated and had full complement of travel funds from the Counterpart funding by the University.

Since, sustainable financing is the life line of any institution to achieve continuous unmatched programs to maintain the lead in its national, regional and global vision, the ACE will require sustained funding to project the Centre to newer research and training

approaches while carrying on with routine trainings, linkages analysis for upholding the regional database. An action plan to ensure continued financing the Centre to carry on with these activities needed as well as steps to realize this action is being developed.

#### 4.4 Roles and responsibilities

All staff involved in the ACE shall be directly remunerated by the University as its complimentary contribution to the success of the Centre. Other collaborating partners are also bona-fide staff of their respective institutions. A nominal payroll of the staff of the Centre will be made for the purposes of re-imburement by the WB to the ACE.

The table below shows the roles and responsibilities of the core proponents

Name	Area of expertise	Roles
Professor Andrew J. Nok	Molecular Biotechnology, forensic science & Vaccine Development	Centre Leader; He shall be responsible for the overall oversight of the activities of the Centre. He shall amongst others head the Trypanosome Unit and be involved in Teaching and coordinating all research activities.
Professor JKP Kwaga	Forensic Science (DNA fingerprinting), molecular epidemiology and vaccine development	Head of the rabies group. He shall oversight student's examinations and monitor the key deliverables across all the programs. He shall also be part of the teaching and research for selected courses in molecular biology.
Professor YKE Ibrahim	Molecular epidemiology and vaccine development	Head of Capacity Building; He shall serve as the head of graduate programs. He is to oversight the progress of students, and organize seminar presentations for ACE students. He is to serve as link for regional students. Organize their hostel accommodation and retreat.
Prof. HM Inuwa	Molecular Biochemistry and vaccine development	Deputy Centre Leader: Her roles shall involve oversight on the delivery of the curriculum for the center as it applies to all graduate

		students. She is to track records of students' progress. She shall be involved in teaching of courses in molecular biology to graduate students
Professor IS Ndams	Molecular Parasitology	Head of the Filariasis group. He shall oversight the teaching and assessment of students in epidemiology
Dr J Kabir	Molecular Epidemiology	He shall oversight the ABU Centre for Biotechnology Research. He shall participate in organizing students seminar and keeping records of short term courses
Dr NM Useh	Vaccine Development and Pathology of infectious Diseases	He shall be involved in teaching and advisor to new students on the ACE program. He shall deploy his expertise in Bioinformatics in the training of students on development of recombinant vaccines.
Dr H Makun	Molecular Parasitology	Monitoring and Evaluation Officer (M&E) She is the Monitoring and Evaluation Officer of the center. Her roles will include oversight on all work packages in the proposal. She will also be involved in the teaching of vector biology to ACE students
Dr AA Dzikwi	Molecular Virology	She will handle the welfare of foreign students and also collaborators. She will also teach courses on virology and participate in students training
Professor Dan Achukwi (Visiting)	Veterinarian parasitologist and immunologist	He is director at IRAD and has extensive experience of rural extension and genetic characterization of trypanotolerance He shall be the link for all regional students in Cameroun. He shall oversight field schools in vector biology

Dr.Dede Ndjonka	Biochemistry of onchocerciasis	He shall oversight students on internship in Cameroun
Dr. Stella Smith	Molecular Diagnosis	She will oversight training for fresh students in the area of molecular biology at NIMR in Lagos.
Professor Dr.SørgeKelm (Visiting)	Molecular Biochemistry	International Expert Graduate Program  He shall be involved in quality assessment of all the programs ensuring the adherence to the curriculum. He shall oversight field training for students in Yankari, Birnin Gwari and Ngaundere games. He shall work towards international accreditation of our programs
Professor M. Mamman (Visiting)	Therapeutic targets against neglected tropical diseases, especially African animal trypanosomiasis	He is the Director of NITOR; he is to oversight students activities in the area of vector biology for Filariasis and Trypanosomes.
Dr. Peter Dede	Tsetse fly entomology	He shall oversight the training on the biology and mass rearing of tsetse flies
Prof Victor Weedn Chair Forensic George Washington University	Forensic Science	He shall be involved Developing the Forensic program. He is to also to partake in the development of MSc Forensic Science and International Accreditation.
Prof Sean Davison	Forensic Biotechnology	He shall be involved in the teaching program of Forensic Biotechnology. has long-standing experience in Forensic science, Polymorphisms and bioinformatician
Prof Yosig (Israel)	Forensic Science	He shall be involved in the teaching and development of Curriculum for MSc Forensic for accreditation

## **Support Staff and ToR**

**Project Manager:** Dr Oyekemi Nash is Nigerian with a high level of expertise at fostering close collaboration and the execution of projects. He is an adjunct Professor at the University of Ibadan and has organized several training programs for ICGEB as well as the World bank Step B. Dr Nash will monitor progress reports from all Units and collaborating Institutions. He will also review projected activities and suggest adjustments, as necessary to the CMO. He is to report to the CL who will advise and make recommendations to the CMO. Dr Nash will also prepare the annual meeting of the IAB, workshops and conferences to be organized by ACECNTDFB.

**Secretary:** Mr. Silas Yashim a tenured staff of ABU has been assigned as the secretary to the center. He shall be responsible in running the daily activities of the secretariat. He shall be responsible to the CL and also PM

**Accountant:** Mr. Ibrahim Salisu a staff of the Bursary Department has been assigned to ACECNTDFB as its accountant. He holds the requisite qualification of the Institute of Chartered Accountants of Nigeria (ICAN).

**Internal Auditor:** Mr. Ibrahim Umar from the Bursary Department ABU has been deployed to be auditor of the Center. He is a qualified Chartered reed Accountant. He shall be responsible to the CL.

**Procurement Officer:** Mr. Ishaya Nuhu from the Bursary Department is a qualified Chartered Accountant. He has previously served as Accountant and member of Procurement committee of the world Bank Step B. He has attended several courses organized by the World Bank in Procurement, Accountant and Management. He is expected to be a resource ensuring that WB rules are being maintained.

**Laboratory Technologist:** The Chief Laboratory Technologist Mr. JJ Elisha shall head the laboratory. He shall be assisted by Mr. Yakubu Ape. Both are professionally qualified graduates

**Animal House Manager:** Mrs. Okene a graduate of animal science shall be responsible of the animal house.

**Driver:** The project driver shall be drawn from the University pool. In essence the subsisting driver at CBRT shall be responsible towards the maintenance of the project vehicle. He shall be paid allowances on special services like filed trip.

**Webmaster/IT specialist:** Mr. Nasiru Koro, a young graduate with BSc Computer Science shall be employed as webmaster and IT specialist He will work part time for the maintenance and update of ACECNTDFB website. He shall be responsible to the PM

## **4.5 Environment safeguards**

Ahmadu Bello University has a Biosafety Committee which is being supervised by the Federal Ministry of Environment. The Committee is headed by Prof Ado Garki of the Institute of Agricultural Research. The membership also include: Prof Daniel Abah, Prof Andrew No, Dr Ado Yusuf, A representative of the Minister of Environment, and Representative of the Community. and Media.

The Centre for Biotechnology Research and Training, A.B.U, Zaria where the proposed ACE will be co-hosted, has a disposal policy for its waste products. This proposed ACE will anchor on this policy to ensure that toxic materials that will be handled and not negatively impact on the environment.

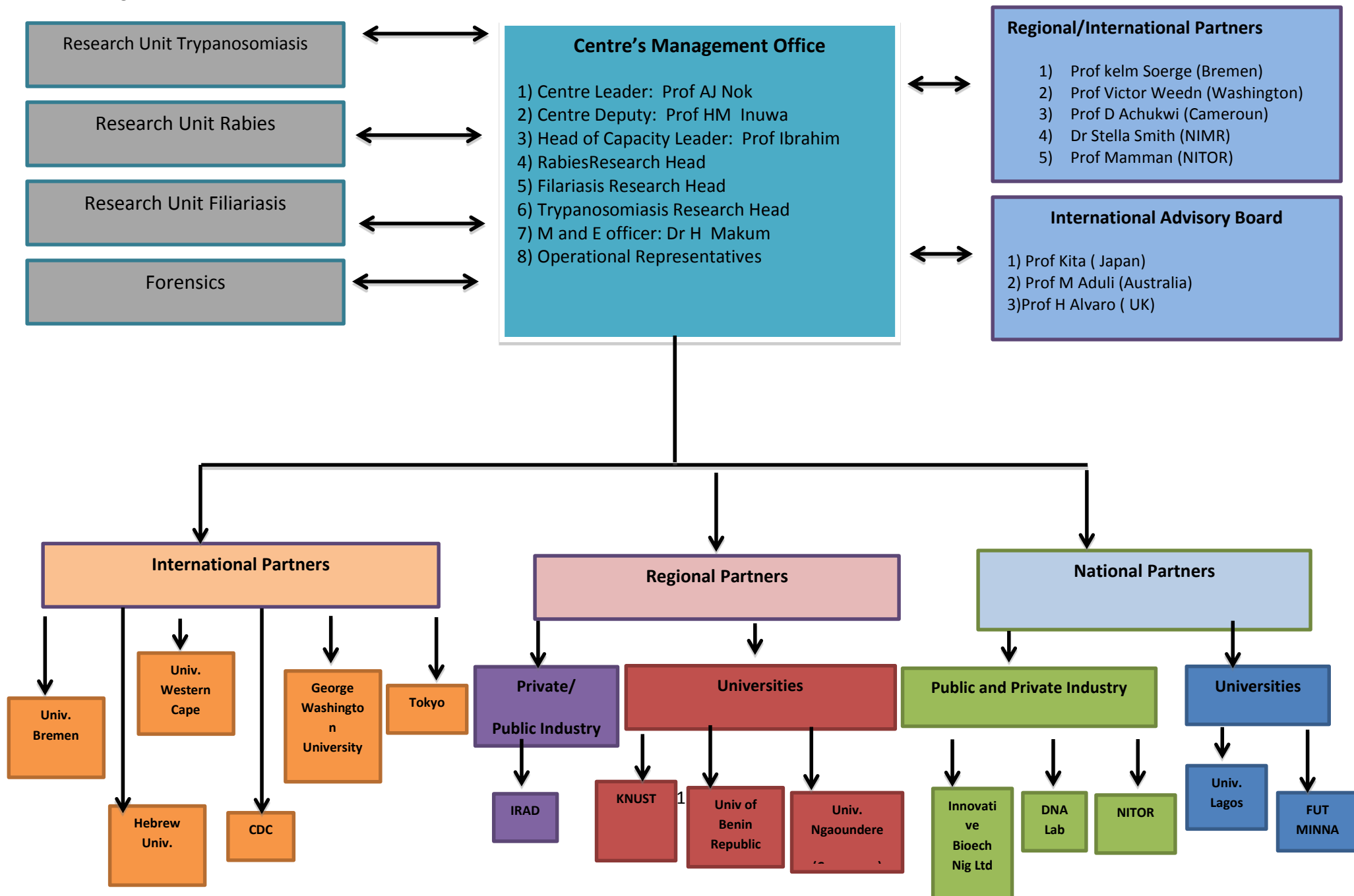
The committee has the full complement of oversight on all projects involving GMOs. Furthermore, their functions include assessment of containment facilities, Appropriation of facilities for GMOs

### **Animal Ethical Committee.**

The ABU Animal ethical committee is chaired by Prof Hassan Zoaka, a distinguished Veterinary Clinician. He is also the Dean of the School of Postgraduate Studies

The Ethical Committee t is independent and meets regularly to regulate the use of animal models for experiments. The committee collates all expression of interests to use animal models for experiments. Applicants are then expected to defend their proposals in tandem with International Best Practices as applicable to the humane use of animals. Such clearances if bridged can be terminated.

Figure 1



## 5. PERFORMANCE MONITORING

**Table 4: Disbursement Linked Indicators**

<b>Disbursement Linked Indicator</b>	<b>Action to be Completed</b>	<b>Amount (USD) of the Financing allocated Per DLI (expressed in Special Drawing Rights (SDR))</b>	<b>Amount (USD) Allocated per DLR for the Disbursement Calculation (expressed in SDR)</b>
<b>DLI 1:</b> Regional specialization endorsed and institutional readiness	<p><b>DLR 1.1:</b> CNTDFB Steering Committee endorsed a MoU promoting regional specialization through the ACEs (4No.)</p> <p><b>DLR 1.2:</b> Establishment of CNTDFB International Advisory Board Committee</p> <p><b>DLR 1.3:</b> Creation of CNTDFB designated account / endowment fund with rules of operation</p> <p><b>DLR 1.4:</b> Signing of funding and performance contract between the University and the Government</p> <p><b>DLR 1.5:</b> Signing of the partnership MOU</p> <p><b>DLR 1.6:</b> Approved Financial Management and procurement procedures and capacity</p>		\$800,000
<b>DLI 2:</b> Excellence in education and research capacity and development impact	<p><b>DLR 2.1</b> New Short-term Students: -489 National: 293 males &amp; 196 females -210 Regional: 126 males &amp; 84 females</p> <p><b>DLR 2.2</b> New Master students: -98 National: 68 males &amp; 30 females -42 Regional: 26 males &amp; 17 females</p> <p><b>DLR 2.3:</b></p>	<p>\$215,200 \$184,800</p> <p>\$211,000 \$189,000</p>	<p>\$400,000</p> <p>\$400,000</p>

	<p>New PhD Students:  - 18 National: 10 males &amp; 8 females  - 9 Regional: 5 males &amp; 4 females</p> <p><b>DLR 2.4:</b>  N# of outreach “periods” for faculty and students.  National: 200  Regional: 100</p> <p><b>DLR 2.5:</b>  International evaluation and accreditation of quality of education programs.  National Accreditations (up to 2)  International Accreditation (one)</p> <p><b>DLR 2.6:</b>  Published articles in internationally recognized and peer reviewed journals  10 papers co-authored regionally  34 national authored papers only</p> <p><b>DLR 2.7:</b>  Externally generated revenue  National revenue forecast  Regional revenue forecast</p> <p><b>DLR 2.8:</b>  Meeting milestones for improved learning and research environment specified in the Performance and Funding contracts  - What investments do we need?  Refurbishing, lab equipment, internet, computers, buildings, lab space, etc.?</p>	<p>\$200,000  \$200,000</p> <p>\$400,000  \$400,000</p> <p>\$200,000  \$600,000</p> <p>\$300,000  \$510,000</p> <p>\$600,000  \$600,000</p>	<p>\$400,000</p> <p>\$800,000</p> <p>\$800,000</p> <p>\$800,000</p> <p>\$1,200,000</p> <p>\$1,600,000</p>
<p><b>DLI 3:</b>  Timely, transparent and institutionally reviewed Financial Management</p>	<p><b>DLR 3.1:</b>  Timely withdrawal application supported by financial reporting for the ACE account for the period  - 25,000/year x 4 years</p> <p><b>DLR 3.2:</b>  Functioning Audit Committee under the university council  - 25,000/year x 4 years</p> <p><b>DLR 3.3:</b></p>	<p>\$100,000</p> <p>\$100,000</p>	<p>\$400,000</p>

	<p>Functioning internal audit unit for the university - 25,000/year x 4 years</p> <p><b>DLR 3.4:</b> Web Transparency on Financial management (web-access to audit reports, interim financial reports, budgets and annual work plan) - 25,000/year x 4 years</p>	<p>\$100,000</p> <p>\$100,000</p>	
<p><b>DLI 4:</b> Timely and audited Procurement</p>	<p><b>DLR 4.1:</b> Timely procurement audit - \$500,000/year x 4 years</p> <p><b>DLR 4.2:</b> Timely and satisfactory procurement progress - \$50,000/year x 4 years</p>	<p>\$200,000</p> <p>\$200,000</p>	<p>\$400,000</p>

## 6. DETAILED BUDGET

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

Expenditure Category	Estimated Costs in US\$					
	Year 1 (2014- 2015)	Year 2 (2015- 2016)	Year 3 (2016- 2017)	Year 4 (2017- 2018)	<i>Total</i>	<i>%of total</i>
<b>A: Budget by Activity Plan</b>						
Action Plan 1	558,700	501,550	319,250	315,550	1,695,050	21.2%
Action Plan 2	936,200	606,300	914,900	1,443,500	3,900,900	48.8%
Action Plan 3	167,800	417,600	473,000	511,500	1,569,900	19.6%
Action Plan 4	96,200	115,650	114,850	107,450	434,150	5.4%
Contingency	100,000	100,000	100,000	100,000	400,000	5.0%
<b>TOTAL</b>	<b>1,858,900</b>	<b>1,741,100</b>	<b>1,922,000</b>	<b>2,478,000</b>	<b>8,000,000</b>	<b>100.0%</b>
<b>%</b>	<b>23.2%</b>	<b>21.8%</b>	<b>24.0%</b>	<b>31.0%</b>	<b>100.0%</b>	
<b>B: Budget by partners</b>						
<i>U Abuja</i>	21,000	8,750	8,750	24,400	62,900	.8%
<i>FUT Minna</i>	21,000	8,750	8,750	24,400	62,900	.8%
<i>Nasarawa SU</i>	4,000	25,750	8,750	24,400	62,900	.8%
<i>NITOR</i>	18,000	5,350	5,350	18,000	46,700	.6%
<i>NIMR</i>	4,000	22,350	5,350	4,000	35,700	.4%
<i>DNA Labs</i>	2,000	6,750	6,750	5,400	20,900	.3%
<i>Vaccine Comp Keffi</i>	2,000	6,750	6,750	5,400	20,900	.3%
<i>U Ngaoundere</i>	21,000	13,500	10,100	24,400	69,000	.9%
<i>U Benin rep.</i>	4,000	27,100	13,500	27,800	72,400	.9%
<i>KNUST</i>	4,000	10,100	27,100	7,400	48,600	.6%
<i>IRAD</i>	4,000	27,100	10,100	7,400	48,600	.6%
<i>U Western Cape</i>	1,000	6,000	7,000	0	14,000	.2%
<i>U Bremen</i>	93,000	101,400	143,400	153,000	490,800	6.1%
<i>U Tokyo</i>	0	0	18,000	18,000	36,000	.5%

<i>Hebrew U</i>	1,500	6,000	7,500	0	15,000	.2%
<i>George Washington U</i>	2,000	6,000	26,000	18,000	52,000	.7%
<i>CDC Atlanta</i>	0	18,000	9,000	18,000	45,000	.6%
TOTAL	202,500	299,650	322,150	380,000	1,204,300	15.1%

## 7. DETAILED ACTIVITY SHEETS

### Action Plan 1: ACE Action Plan to Achieve Teaching and Learning Excellence

**Timeframe:** Year 1 February 2014-May 2014

#### Activity 1.1: Development of regular teaching modules (MSc and PhD courses)

RESULT	New teaching modules developed and available for use by faculty						
ACTIVITY	Development of new teaching modules biotechnology courses						
OUTPUT	New curriculum for biotechnology master's program, New curriculum for biotechnology PhD program. Approval for the two new curriculum.						
OUTPUT INDICATOR				SOURCE OF VERIFICATION			
<ul style="list-style-type: none"> <li>Completed teaching modules developed</li> <li>No of teaching modules developed</li> </ul>				<ul style="list-style-type: none"> <li>Copy of the teaching modules</li> </ul>			
IMPLEMENTATION MILESTONES	February 2014: Curriculum development started May 2014: Curriculum approved						
PROCUREMENT	n/a						
RESPONSIBILITY FOR IMPLEMENTATION	Deputy Center Leader – Prof. H.M. Inuwa Head of Department of Biochemistry – Prof. I.A. Umar						
DURATION: 4 months	Commencement: February 2014			Completion: May 2014			
PRIMARY CONSTITUENTS:				PARTICIPANTS:			
<ul style="list-style-type: none"> <li>NTDFS Faculty</li> <li>NTDFS Leadership</li> <li>Biochemistry department faculty</li> <li>Center for biotechnology and training faculty</li> <li>Students (current &amp; prospective)</li> <li>Post-graduate School</li> <li>ABU Senate</li> </ul>				<ul style="list-style-type: none"> <li>Deputy Center Leader – Prof. H.M. Inuwa</li> <li>Head of Department of Biochemistry – Prof. I.A. Umar</li> <li>NTDFS Center Faculty</li> <li>University of Bremen – Prof. Kelm Soerge</li> </ul>			
ASSUMPTIONS	Agreement of the university to have new curriculum and new degree programs						
FINANCIAL IMPLICATIONS	NTDFS 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 Workshop for module design	1,000			1,000			2,000

2	Trial runs (personnel)	1,400			1,400			2,800
3	Consumables	1,500			1,500			3,000
4	Course materials and administration	300			300			600
5	Travel expenses	3,000			3,000			6,000
6	Accommodation for external resource person	2,800			2,800			5,600
<b>TOTALS</b>		<b>10,000</b>	<b>0</b>	<b>0</b>	<b>10,000</b>	<b>0</b>	<b>0</b>	<b>20,000</b>

## Action Plan 1: ACE Action Plan to Achieve Teaching and Learning Excellence

**Timeframe:** Year 1

### Activity 1.2: Development of mobile modules (new short courses)

RESULT	New short courses available to students, regional students/faculty, public and private sector specifically in scientific methods, forensic theory, and post graduate diploma in forensic biotechnology	
ACTIVITY	Curriculum development and approval of new short courses	
OUTPUT	New short courses designed and approved	
<b>OUTPUT INDICATOR</b> <ul style="list-style-type: none"> <li>New short course curriculum for post graduate diploma in forensic biotechnology</li> <li>New short courses in forensic theory</li> <li>New short courses in scientific methods</li> </ul>		<b>SOURCE OF VERIFICATION</b> <ul style="list-style-type: none"> <li>ABU senate</li> <li>NTDFT – Project manger</li> </ul>
IMPLEMENTATION MILESTONES	February 2014: curriculum designed for PGD Forensic Biotechnology (FB) Mary 2014: Curriculum for short courses designed and PGD FB approved July 2014: First short course running October 2014: First class of students start Courses to run ongoing	
PROCUREMENT	n/a	
RESPONSIBILITY FOR IMPLEMENTATION	<ul style="list-style-type: none"> <li>Deputy Center Leader – Prof. H.M. Inuwa</li> <li>Head of Department of Biochemistry – Prof. I.A. Umar</li> <li>Center Leader – Prof Andrew Nok</li> <li>University of Bremen - Kelm Soerge</li> <li>Head of Capacity Building Unit – Y.K.E. Ibrahim</li> <li>NTDFB Faculty Member - Dr. T. Gbem</li> <li>Project Manager – To be determined</li> </ul>	
DURATION: 1 Year	Commencement: February 2014	Completion: June 2015 (on-going)
<b>PRIMARY CONSTITUENTS:</b> <ul style="list-style-type: none"> <li>NTDFS Faculty</li> <li>NTDFS Leadership</li> <li>Biochemistry department faculty</li> <li>Center for biotechnology and training faculty</li> <li>Students (current &amp; prospective)</li> <li>Post-graduate School</li> <li>ABU Senate</li> <li>Police</li> <li>National Forensics lab</li> </ul>		<b>PARTICIPANTS:</b> <ul style="list-style-type: none"> <li>Deputy Center Leader – Prof. H.M. Inuwa</li> <li>Head of Department of Biochemistry – Prof. I.A. Umar</li> <li>NTDFB Center Faculty</li> <li>University of Bremen – Prof. Kelm Soerge</li> <li>Center for Biotechnology Research and training</li> <li>Hebrew University – Sean Davidson</li> </ul>

• Armed forces								
ASSUMPTIONS		Agreement of the university to have new curriculum for short courses						
FINANCIAL IMPLICATIONS		NTDFB 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	Workshop for module design			1,000			1,000	2,000
2	Trial runs (personnel)			1,400			1,400	2,800
3	Consumables			1,500			1,500	3,000
4	Course materials and administration			300			300	600
5	Travel expenses			3,000			3,000	6,000
6	Accommodation			2,800			2,800	5,600
7	Equipment			10,000				10,000
8	Evaluation process							0
TOTALS		0	0	20,000	0	0	10,000	30,000

## Action Plan 1: ACE Action Plan to Achieve Teaching and Learning Excellence

**Timeframe:** Year 1

### Activity 1.3: Development of tutoring and mentoring programs

RESULT	New tutoring courses available stakeholders to faculty, public and private sector specifically in scientific methods in the general area of biotechnology	
ACTIVITY	Mentoring course development and approval	
OUTPUT	New tutoring courses designed and approved	
<b>OUTPUT INDICATOR</b> <ul style="list-style-type: none"> <li>New mentoring course curricula in biotechnology</li> <li>New short courses in scientific methods</li> </ul>		<b>SOURCE OF VERIFICATION</b> <ul style="list-style-type: none"> <li>ABU senate</li> <li>NTDFT – Project manger</li> </ul>
IMPLEMENTATION MILESTONES	February 2014: curriculum designed for PGD Forensic Biotechnology (FB) Mary 2014: Curriculum for short courses designed and PGD FB approved July 2014: First short course running October 2014: First class of students start Courses to run ongoing	
PROCUREMENT	n/a	
RESPONSIBILITY FOR IMPLEMENTATION	<ul style="list-style-type: none"> <li>Deputy Center Leader – Prof. H.M. Inuwa</li> <li>Head of Department of Biochemistry – Prof. I.A. Umar</li> <li>Center Leader – Prof Andrew Nok</li> <li>University of Bremen - Kelm Soerge</li> <li>Head of Capacity Building Unit – Y.K.E. Ibrahim</li> <li>NTDFB Faculty Member - Dr. T. Gbem</li> <li>Project Manager – Mr. Nash</li> </ul>	
DURATION: 1 Year	Commencement: February 2014	Completion: June 2015 (on-going)
<b>PRIMARY CONSTITUENTS:</b> <ul style="list-style-type: none"> <li>NTDFS Faculty</li> <li>NTDFS Leadership</li> <li>Biochemistry department faculty</li> <li>Center for biotechnology and training faculty</li> <li>Students (current &amp; prospective)</li> <li>Post-graduate School</li> <li>ABU Senate</li> <li>Police</li> <li>National Forensics lab</li> <li>Armed forces</li> </ul>		<b>PARTICIPANTS:</b> <ul style="list-style-type: none"> <li>Deputy Center Leader – Prof. H.M. Inuwa</li> <li>Head of Department of Biochemistry – Prof. I.A. Umar</li> <li>NTDFB Center Faculty</li> <li>University of Bremen – Prof. Kelm Soerge</li> <li>Center for Biotechnology Research and training</li> <li>Hebrew University – Sean Davidson</li> </ul>
ASSUMPTIONS	Agreement of the university to have new curriculum for short courses	

FINANCIAL IMPLICATIONS		NTDFB 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	Workshop for program design	500			500			1,000
2	Course materials and administration	300			300			600
3	Evaluation process							300
<b>TOTALS</b>		<b>800</b>			<b>800</b>			<b>1,600</b>

## Action Plan 1: ACE Action Plan to Achieve Teaching and Learning Excellence

**Timeframe:** Year 1

### Activity 1.4: Development of curricula and approval of new post graduate programs

RESULT	Curricula for the new graduate programs (MSc and PhD Biotechnology, MSc Forensic Science, MSc in Epidemiology) developed and approved	
ACTIVITY	Development of Postgraduate programs (MSc and PhD Biotechnology, MSc Forensic Science and MSc Epidemiology and their approval.	
OUTPUT	Curricula for the MSc and PhD Biotechnology, MSc Forensic Science and MSc Epidemiology	
<b>OUTPUT INDICATOR</b> <ul style="list-style-type: none"> <li>Completed MSc curriculum in biotechnology</li> <li>Completed PhD curriculum in biotechnology</li> <li>Completed MSc curriculum for Forensic Science</li> <li>Completed MSc curriculum for Epidemiology</li> <li>Approval from ABU senate</li> </ul>		<b>SOURCE OF VERIFICATION</b> <ul style="list-style-type: none"> <li>Copy of the approval letter from the ABU Senate</li> </ul>
IMPLEMENTATION MILESTONES	February 2014: Curriculum development for MSc and PhD Biotechnology started May 2014: Curricula for MSc and PhD Biotechnology approved 2015 : Curriculum for MSc Forensic Science and MSc Epidemiology commences 2015: Approval of MSc Forensic Biotechnology and MSc Epidemiology	
PROCUREMENT	n/a	
RESPONSIBILITY FOR IMPLEMENTATION	Deputy Center Leader – Prof. H.M. Inuwa Head of Department of Biochemistry – Prof. I.A. Umar	
DURATION: 4 months	Commencement: February 2014	Completion: May 2014
<b>PRIMARY CONSTITUENTS:</b> <ul style="list-style-type: none"> <li>NTDFS Faculty</li> <li>NTDFS Leadership</li> <li>Biochemistry department faculty</li> <li>Center for biotechnology and training faculty</li> <li>Students (current &amp; prospective)</li> <li>Post-graduate School</li> <li>ABU Senate</li> </ul>		<b>PARTICIPANTS:</b> <ul style="list-style-type: none"> <li>Deputy Center Leader – Prof. H.M. Inuwa</li> <li>Head of Department of Biochemistry – Prof. I.A. Umar</li> <li>NTDFS Center Faculty</li> <li>University of Bremen – Prof. Kelm Soerge</li> </ul>
ASSUMPTIONS	Agreement of the university to have new curriculum and new degree programs	

FINANCIAL IMPLICATIONS		NTDFS 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	Workshop for curriculum design of MSc and PhD Biotechnology	1,000						2,000
2	Workshop for curriculum design of MSc Forensic Science		1,000					2,800
3	Workshop for curriculum design of MSc Epidemiology							3,000
4	Programme materials and administration	300	300					600
5	Travel expenses	3,000	4,500					6,000
6	Accommodation for external resource person	1,200	1,200					5,600
	Evaluation process							0
TOTALS		6,500	7,000	0	0			13,5000

## Action Plan 1: ACE Action Plan to Achieve Teaching and Learning Excellence

**Timeframe:**Year 1

### Activity 1.5: Running of graduate and short course programs

RESULT	Students enrolled in new biotechnology graduate (MSc & PhD Biotechnology, MSc Forensic Science, MSc Epidemiology) and short courses including Post graduate diploma (PGD) in Forensic Biotechnology							
ACTIVITY	Enroll and run the new postgraduate programs and short courses							
OUTPUT	Students enrolled in new biotechnology MSc, PhD, PGD and Short course programs							
OUTPUT INDICATOR <ul style="list-style-type: none"><li>Number of PhD students enrolled in Biotechnology</li></ul>					SOURCE OF VERIFICATION Post-graduate school: Prof. Hassan Zoaka			
IMPLEMENTATION MILESTONES	July 2014: Advertisement for the PhD program September 2014: Enrol the PhD students October 2014: Classes for new PhD program start Students on-going							
PROCUREMENT	n/a							
RESPONSIBILITY FOR IMPLEMENTATION	<ul style="list-style-type: none"><li>Post-Graduate School: Prof. Hassan Zoaka</li><li>Head of Department of Biochemistry: Prof. I.A. Umar</li><li>Biochemistry Post-Graduate selection committee: Dr. Balarabe</li></ul>							
DURATION: 1 Year		Commencement: July 2014			Completion: June 2015 (on-going)			
PRIMARY CONSTITUENTS: <ul style="list-style-type: none"><li>Biochemistry Faculty</li><li>Biotechnology Research and Technology Center Faculty</li><li>NTDFB Leadership</li><li>Students (Current &amp; Prospective)</li></ul>				PARTICIPANTS: <ul style="list-style-type: none"><li>Post-Graduate School: Prof. Hassan Zoaka</li><li>Head of Department of Biochemistry: Prof. I.A. Umar</li><li>Biochemistry Post-Graduate selection committee: Dr. Balarabe</li><li>Biochemistry Faculty</li><li>Biotechnology Research and Technology Center Faculty</li></ul>				
ASSUMPTIONS	Students will want to pursue PhD degree in biotechnology							
FINANCIAL IMPLICATIONS	NTDFB 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	Course materials	200	200	200	200			800

2	Consumables	2,000	2,000	2,000	2,000			8,000
3	Travel by external teachers	6,000	6,000	6,000	6,000			24,000
4	Accommodation for external teachers	5,600	5,600	5,600	5,600			22,400
5	Additional support personnel							0
6	Administration	200	200	200	200			800
<b>TOTALS</b>		<b>14,000</b>	<b>14,000</b>	<b>14,000</b>	<b>14,000</b>			<b>56,000</b>

## Action Plan 1: ACE Action Plan to Achieve Teaching and Learning Excellence

**Timeframe:** Year 1

### Activity 1.6: Establishment and Maintenance of Library

RESULT	Online library resources available for use by students and faculty						
ACTIVITY	Purchasing of online library resources						
OUTPUT	Online library resources purchased						
OUTPUT INDICATOR <ul style="list-style-type: none"> <li>What resources were purchased (online texts, journal access)</li> </ul>					SOURCE OF VERIFICATION <ul style="list-style-type: none"> <li>Procurement: Mr. Anya</li> <li>Accountant</li> <li>Auditor</li> </ul>		
IMPLEMENTATION MILESTONES	September 2014: Initiate procurement December 2014: Access available						
PROCUREMENT	Purchase of online resources						
RESPONSIBILITY FOR IMPLEMENTATION	Center Management Office Procurement Officer – Mr. Anya						
DURATION: 4 Months	Commencement: September 2014			Completion: December 2014			
PRIMARY CONSTITUENTS: <ul style="list-style-type: none"> <li>NTDFS Faculty</li> <li>NTDFS Leadership</li> <li>Biochemistry department faculty</li> <li>Center for biotechnology and training faculty</li> <li>Students (current &amp; prospective) masters &amp; PhD, short course</li> <li>Post-graduate School</li> <li>ABU Senate</li> <li>Police</li> <li>National Forensics lab</li> <li>Armed forces</li> </ul>					PARTICIPANTS: <ul style="list-style-type: none"> <li>Center Management Office</li> <li>Procurement</li> <li>Accountant</li> </ul>		
ASSUMPTIONS	Faculty and students have sufficient internet access at start to access these resources						
FINANCIAL IMPLICATIONS	NTDFB 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	Procurement of terminal computers		5,000					5,000
2	Subscription of journals, and purchase of articles		1,500	1,500	1,500			4,500
3	Software for literature management,		2,000					2,000
4	Service of IT structure and data backup			300	300			600
5	Textbooks	1,0000		1,000				2,000
<b>TOTALS</b>		<b>1,000</b>	<b>6,500</b>	<b>2,800</b>	<b>1,800</b>			<b>14,100</b>

## Action Plan 1: ACE Action Plan to Achieve Teaching and Learning Excellence

Time frame: Year 1

### Activity 1.7: Implementation of Field Study Course Work

RESULT	Students and faculty with improved skills in field sample collection							
ACTIVITY	Field Study course work in sample collection and methods							
OUTPUT	Field study trips completed by students and faculty							
OUTPUT INDICATOR <ul style="list-style-type: none"><li>• Number of Students attending field study trips</li><li>• Number of faculty attending field study trips</li></ul>					SOURCE OF VERIFICATION Project Manager			
IMPLEMENTATION MILESTONES		July 2014: Field study (Rainy Season) in progress January 2015: plan field study trips (Dry Season) February 2015 and on: field study trips commence (Dry Season)						
PROCUREMENT		Field study supplies (traps, nets), GPS etc						
RESPONSIBILITY FOR IMPLEMENTATION		Research Unit Heads <ul style="list-style-type: none"><li>• Trypanosomiasis</li><li>• Filariasis</li><li>• Rabies</li></ul> Procurement Officer						
DURATION: 1 year		Commencement: July 2014			Completion: June 2015			
PRIMARY CONSTITUENTS: <ul style="list-style-type: none"><li>• Masters in biotechnology students</li><li>• PhD biotechnology students</li><li>• CBRT Faculty</li><li>• Biochemistry Faculty</li></ul>		PARTICIPANTS: <ul style="list-style-type: none"><li>• Research unit heads</li><li>• Masters in biotechnology students</li><li>• PhD biotechnology students</li><li>• CBRT Faculty</li><li>• Biochemistry Faculty</li></ul>						
ASSUMPTIONS		Students and faculty want to go to the field						
FINANCIAL IMPLICATIONS		NTDFB 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	4WD Vehicle for field work	50,000						50,000
2	Minibus for transport of students							0
3	Fuel and vehicle maintenance	900	900	900	900			3,600
4	Driver (2nos)	900	900	900	900			3,600
5	Materials (traps, boots, nets, etc)							
6	Fees			500	500			1,000
	Accommodation and food for 15 persons for 7 days			12,600	12,600			25,200
<b>TOTALS</b>		<b>51,800</b>	<b>1,800</b>	<b>14,900</b>	<b>14,900</b>			<b>83,400</b>

## Action Plan 1: ACE Action Plan to Achieve Teaching and Learning Excellence

**Timeframe:** Year 1

### Activity 1.8: Reliable General Infrastructure (Procurement and installation of learning equipment in refurbished laboratories and classrooms)

RESULT	Modern classroom and laboratory learning facilities available for student and faculty use	
ACTIVITY	Procurement and installation of learning equipment in refurbished laboratories and classrooms	
OUTPUT	Laboratories and classrooms equipped with new learning features	
OUTPUT INDICATOR <ul style="list-style-type: none"> <li>• Procurement of new laboratory and classroom learning equipment</li> <li>• Installation and commission of new equipment into learning environment</li> </ul>		SOURCE OF VERIFICATION <ul style="list-style-type: none"> <li>• Procurement Officer: Mr Ishaya Nuhu</li> <li>• Accountant, Mr Ibrahim Salisu</li> <li>• Auditor, Mr Umar</li> </ul>
IMPLEMENTATION MILESTONES	November 2014: Initiate procurement process July 2015: Equipment installed	
PROCUREMENT	Learning environment equipment (projectors, computers, smart boards etc)	
RESPONSIBILITY FOR IMPLEMENTATION	Center Management Office Operational Representatives (Procurement, Accountant)	
DURATION: 8 Months	Commencement: November 2014	Completion: July 2015
PRIMARY CONSTITUENTS: <ul style="list-style-type: none"> <li>• NTDFS Faculty</li> <li>• NTDFS Leadership</li> <li>• Biochemistry department faculty</li> <li>• Center for biotechnology and training faculty</li> <li>• Students (current &amp; prospective) masters &amp; PhD, short course</li> <li>• Post-graduate School</li> <li>• ABU Senate</li> <li>• Police</li> <li>• National Forensics lab</li> <li>• Armed forces</li> </ul>		PARTICIPANTS: <ul style="list-style-type: none"> <li>• Center Management Office</li> <li>• Operational Representatives (Procurement, Accountant)</li> </ul>
ASSUMPTIONS	IP approved and funds disbursed	
FINANCIAL IMPLICATIONS	NTDFB 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	Inverters and batteries	5,000		5,000				10,000
2	Fuel for 250KVA Generator	4,500	4,500	4,500	4,500			18,000
3	Maintenance of installation	5,000	5,000	5,000	5,000			20,000
4	Upgrading and maintenance of water supplies	10,000	1,000	1,000	1,000			13,000
5	Customization of computer network installation	1,500	10,000	1,500	1,500			14,500
6	Liquid Nitrogen	1,200	1,200	1,200	1,200			4,800
<b>TOTALS</b>		<b>27,200</b>	<b>21,700</b>	<b>18,200</b>	<b>13,200</b>			<b>80,300</b>

## Action Plan 1: ACE Action Plan to Achieve Teaching and Learning Excellence

**Time frame:** Year 1

### Activity 1.9: Customization of Teaching Rooms (Refurbishment of existing classrooms)

RESULT	Improved learning environment for all students and faculty of the center							
ACTIVITY	Refurbishment of existing classroom space in Biotechnology building							
OUTPUT	Refurbished classroom space in the biotechnology building							
OUTPUT INDICATOR <ul style="list-style-type: none"> <li>• Number of classrooms refurbished</li> <li>• Number of students taking classes in newly refurbished classrooms</li> </ul>				SOURCE OF VERIFICATION <ul style="list-style-type: none"> <li>• Project manager</li> <li>• Procurement officer: Mr. Anya</li> <li>• Accountant -</li> </ul>				
IMPLEMENTATION MILESTONES	September 2014: Design/plans for refurbishment October 2014: initiate procurement process December 2014: initiate refurbishing process June 2015: complete refurbishment							
PROCUREMENT	Contractor for construction and materials							
RESPONSIBILITY FOR IMPLEMENTATION	Center Management Officer Operational Representatives (Procurement, Accountant, Auditor)							
DURATION: 10 months	Commencement: September 2014			Completion: June 2015				
PRIMARY CONSTITUENTS: <ul style="list-style-type: none"> <li>• School of Post Graduate Students</li> <li>• Biochemistry Faculty</li> <li>• Center for Biotechnology Research and Technology Faculty</li> <li>• NTDFB Faculty</li> <li>• NTDFB Leadership</li> <li>• Students (current &amp; prospective)</li> </ul>				PARTICIPANTS: <ul style="list-style-type: none"> <li>• Center Management Officer</li> <li>• Operational Representatives (Procurement, Accountant, Auditor)</li> </ul>				
ASSUMPTIONS	IP approved and funds dispersed							
FINANCIAL IMPLICATIONS	NTDFB 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	Refurbishing of rooms (advertisement of	50,000	100	100	100			50,300

	contract, contract award and construction works)							
2	Procurement and Projectors	5,000						5,000
3	Installation of WLAN		2,500					2,500
<b>TOTALS</b>		<b>55,000</b>	<b>2,500</b>	<b>100</b>	<b>100</b>			<b>57,800</b>

## Action Plan 1: ACE Action Plan to Achieve Teaching and Learning Excellence

**Timeframe:** Year 1

**Activity 1.10: Customization of Teaching Laboratories** (Procurement and installation of learning equipment in refurbished laboratories)

RESULT	Modern classroom and laboratory learning facilities available for student and faculty use	
ACTIVITY	Procurement and installation of learning equipment in refurbished laboratories and classrooms	
OUTPUT	Laboratories and classrooms equipped with new learning features	
OUTPUT INDICATOR <ul style="list-style-type: none"> <li>• Procurement of new laboratory and classroom learning equipment</li> <li>• Installation and commission of new equipment into learning environment</li> </ul>		SOURCE OF VERIFICATION <ul style="list-style-type: none"> <li>• Procurement Officer: Mr. Ishaya Nuhu</li> <li>• Accountant, Mr Ibrahim Salisu</li> <li>• Auditor, Mr Umar</li> </ul>
IMPLEMENTATION MILESTONES	November 2014: Initiate procurement process July 2015: Equipment installed	
PROCUREMENT	Learning environment equipment (projectors, computers, smart boards etc)	
RESPONSIBILITY FOR IMPLEMENTATION	Center Management Office Operational Representatives (Procurement, Accountant)	
DURATION: 8 Months	Commencement: November 2014	Completion: July 2015
PRIMARY CONSTITUENTS: <ul style="list-style-type: none"> <li>• NTDFS Faculty</li> <li>• NTDFS Leadership</li> <li>• Biochemistry department faculty</li> <li>• Center for biotechnology and training faculty</li> <li>• Students (current &amp; prospective) masters &amp; PhD, short course</li> <li>• Post-graduate School</li> <li>• ABU Senate</li> <li>• Police</li> <li>• National Forensics lab</li> <li>• Armed forces</li> </ul>		PARTICIPANTS: <ul style="list-style-type: none"> <li>• Center Management Office</li> <li>• Operational Representatives (Procurement, Accountant)</li> </ul>
ASSUMPTIONS	IP approved and funds disbursed	
FINANCIAL IMPLICATIONS	NTDFB 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	Customization of Labs		30,000	30,000	30,000			90,000
2	Laboratory Maintenance	500	500	500	500			2,000
3	Supplement Equipment			50,000	50,000			100,000
4	Equipment Maintenance and repairs	1,500	1,500	1,500	1,500			6,000
<b>TOTALS</b>		<b>2,000</b>	<b>32,000</b>	<b>82,000</b>	<b>82,000</b>			<b>198,000</b>

## Action Plan 1: ACE Action Plan to Achieve Teaching and Learning Excellence

**Time frame:** Year 1

### Activity 1.11: Development of Faculty Teaching Expertise

RESULT	Faculty use modern teaching techniques to impart knowledge to students	
ACTIVITY	Improving teaching capabilities of faculty	
OUTPUT	Improved teaching delivery expertise	
OUTPUT INDICATOR <ul style="list-style-type: none"> <li>• Application of modern teaching techniques</li> <li>• Training workshops organized by external teachers</li> <li>• e-learning platforms mounted</li> </ul>		SOURCE OF VERIFICATION <ul style="list-style-type: none"> <li>• Project manager</li> </ul>
IMPLEMENTATION MILESTONES	October 2014: May 2015:	
PROCUREMENT	n/a	
RESPONSIBILITY FOR IMPLEMENTATION	<ul style="list-style-type: none"> <li>• Project Manger</li> <li>• Center Management Office</li> <li>• Procurement officer</li> <li>• Accountant</li> <li>• Auditor</li> </ul>	
DURATION: 9 Months	Commencement: October 2014	Completion: on going
PRIMARY CONSTITUENTS: <ul style="list-style-type: none"> <li>• NTDFS Faculty</li> <li>• NTDFS Leadership</li> <li>• Biochemistry department faculty</li> <li>• Center for biotechnology and training faculty</li> <li>• Students (current &amp; prospective) masters &amp; PhD, short course</li> <li>• Post-graduate School</li> <li>• ABU Senate</li> <li>• Police</li> <li>• National Forensics lab</li> <li>• Armed forces</li> </ul>		PARTICIPANTS: <ul style="list-style-type: none"> <li>• Project Manger</li> <li>• Center Management Office</li> <li>• Accountant</li> <li>• Auditor</li> </ul>
ASSUMPTIONS	IP approved and funds disbursed	
FINANCIAL IMPLICATIONS	NTDFB 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	Seminar on modern teaching techniques			200		200		400
2	Travel by external teachers			3,000		3,000		6,000
3	Accommodation for external teachers			2,800		2,800		5,600
4	Travel for oversea training				1,500		1,500	3,000
5	Accommodation for overseas training				3,000		3,000	6,000
6	Bench fees				4,500		4,500	9,000
<b>TOTALS</b>		<b>0</b>	<b>0</b>	<b>6,000</b>	<b>9,000</b>	<b>6,000</b>	<b>9,000</b>	<b>30,000</b>

## Action Plan 2: ACE Action Plan to Achieve Excellence in Applied Research

**Time frame:** Year 1

### Activity 2.01: Design of new animal facility

RESULT	Design for new animal facility for research animal living and work							
ACTIVITY	Design of new animal facility							
OUTPUT	Design of new animal facility							
OUTPUT INDICATOR <ul style="list-style-type: none"> <li>Completed design for new animal facility</li> </ul>					SOURCE OF VERIFICATION <ul style="list-style-type: none"> <li>Project Manager</li> </ul>			
IMPLEMENTATION MILESTONES	May 2015: Initiate design of animal facility June 2015: finalize design for animal facility							
PROCUREMENT	n/a							
RESPONSIBILITY FOR IMPLEMENTATION	Center Management Officer							
DURATION: 2 months	Commencement: Sept. 2014			Completion: June 2015				
PRIMARY CONSTITUENTS: <ul style="list-style-type: none"> <li>NTDFS Faculty</li> <li>NTDFS Leadership</li> <li>Biochemistry department faculty</li> <li>Center for biotechnology and training faculty</li> <li>Students (current &amp; prospective) masters &amp; PhD, short course</li> </ul>				PARTICIPANTS: <ul style="list-style-type: none"> <li>Center Management Office</li> </ul>				
ASSUMPTIONS	Space available, IP approved and funds available							
FINANCIAL IMPLICATIONS	NTDFB 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	Refurbish animal facility at CBRT	30,000	20,000					50,000
2	Construct grazing area		50,000					50,000

3	Construct gated area in hallway	20,000						20,000
4	Furnish room with shelves and cages		5,000		10,000			15,000
5	Maintenance of facility			500	500			1,000
	Personnel to man the facility			300	300			
7	Veterinary support			300	300			600
<b>TOTALS</b>		<b>50,000</b>	<b>75,000</b>	<b>1,100</b>	<b>1,100</b>			<b>127,200</b>

## Action Plan 2: ACE Action Plan to Achieve Excellence in Applied Research

**Time frame:** Year 1

### Activity 2.02: Implementation of cold room facility

RESULT	Functional cold room facility available for student and faculty applied research activities	
ACTIVITY	Refurbishing and equipping cold room facility with necessary	
OUTPUT	Cold room refurbished and ready for use	
OUTPUT INDICATOR <ul style="list-style-type: none"> <li>• Refurbishment completed</li> <li>• Cold facility support resources installed.</li> </ul>		SOURCE OF VERIFICATION <ul style="list-style-type: none"> <li>• Project Manager, Dr Oyekemi Nash</li> <li>• Center Leader: Prof Nok</li> <li>• Procurement Officer: Mr. Ishaya Nuhu</li> </ul>
IMPLEMENTATION MILESTONES		
PROCUREMENT	Contractor	
RESPONSIBILITY FOR IMPLEMENTATION	Center Management Officer Operational representatives	
DURATION:	Commencement:	Completion:
PRIMARY CONSTITUENTS: <ul style="list-style-type: none"> <li>• NTDFS Faculty</li> <li>• NTDFS Leadership</li> <li>• Biochemistry department faculty</li> <li>• Center for biotechnology and training faculty</li> <li>• Students (current &amp; prospective) masters &amp; PhD, short course</li> <li>• Post-graduate School</li> <li>• ABU Senate</li> <li>• Police</li> <li>• National Forensics lab</li> <li>• Armed forces</li> </ul>		PARTICIPANTS: <ul style="list-style-type: none"> <li>• Center Management Officer</li> <li>• Operational representatives</li> </ul>
ASSUMPTIONS	IP approved and funds disbursed	
FINANCIAL IMPLICATIONS	NTDFB 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	Refurbish existing cold room			10,000				10,000
2	Install AC and forced air system for precooling			10,000				10,000
3	UPS systems with batteries extensions procured and installed				5,000			5,000
4	Ice machine procured and installed				15,000			15,000
<b>TOTALS</b>		<b>0</b>	<b>0</b>	<b>20,000</b>	<b>20,000</b>			<b>40,000</b>

## Action Plan 2: ACE Action Plan to Achieve Excellence in Applied Research

**Time frame:** Year 1

### Activity 2.03: Implementation of Central laboratory support

RESULT	Process to obtain upgraded central research facility for students and faculty research work							
ACTIVITY	Initiation, procurement and installation of central laboratory equipment							
OUTPUT	Central lab equipped with resources and available for use							
OUTPUT INDICATOR <ul style="list-style-type: none"> <li>Central lab refurbished</li> <li>Equipment procured</li> <li>Equipment installed</li> </ul>				SOURCE OF VERIFICATION <ul style="list-style-type: none"> <li>Procurement Officer: Mr. Ishaya Nuhu</li> <li>Accountant, Ibrahim salisu</li> <li>Auditor, Mr Umar</li> <li>Laboratory technician</li> </ul>				
IMPLEMENTATION MILESTONES	December, 2014: initiate procurement							
PROCUREMENT	Central Research Equipment (PCR,							
RESPONSIBILITY FOR IMPLEMENTATION	Center Management Officer Research Unit Heads							
DURATION: 3 months	Commencement: April 2015			Completion: June 2015				
PRIMARY CONSTITUENTS: <ul style="list-style-type: none"> <li>NTDFS Faculty</li> <li>NTDFS Leadership</li> <li>Biochemistry department faculty</li> <li>Center for biotechnology and training faculty</li> <li>Students (current &amp; prospective) masters &amp; PhD, short course</li> </ul>				PARTICIPANTS: <ul style="list-style-type: none"> <li>Center Management Officer</li> <li>Research Unit Heads</li> </ul>				
ASSUMPTIONS	IP approved and Funds disbursed							
FINANCIAL IMPLICATIONS	NTDFB 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	Refurbishing of room	0	0	0	15,000			15,000

2	Improve and maintain existing equipment	0	0	0	0			0
3	Maintenance of equipment	0	0	0	0			0
4	Procure and install centrifuge	0	0	0	40,000			40,000
5	Procure and install ultracentrifuge	0	0	0	0			0
<b>TOTALS</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>55,000</b>			<b>55,000</b>

## Action Plan 2: ACE Action Plan to Achieve Excellence in Applied Research

**Time frame:** Year 1

### Activity 2.04: Implementation of chemical and supplies stores

RESULT	Laboratory operational for student and faculty applied research as part of degree study	
ACTIVITY	Consumable costs for core laboratory	
OUTPUT	Consumables purchased for operations of the laboratory	
OUTPUT INDICATOR	SOURCE OF VERIFICATION	
<ul style="list-style-type: none"> <li>Chemical stores refurbished</li> <li>Consumables purchased</li> </ul>	<ul style="list-style-type: none"> <li>Project manager</li> <li>Procurement officers</li> <li>Laboratory manager</li> </ul>	
IMPLEMENTATION MILESTONES	September 2014: Initiate procurement January 2015: Consumables in place for use by faculty and staff Ongoing re-stocking/maintaining supply levels	
PROCUREMENT	Consumable equipment	
RESPONSIBILITY FOR IMPLEMENTATION	<ul style="list-style-type: none"> <li>Research unit heads</li> <li>Course directors</li> <li>Laboratory technician</li> <li>Procurement officer</li> <li>Account</li> <li>Auditor</li> </ul>	
DURATION: 9 months	Commencement: November, 2014	Completion: Feb, 2015
PRIMARY CONSTITUENTS: NTDFS Faculty NTDFS Leadership Biochemistry department faculty Center for biotechnology and training faculty Students (current & prospective) masters & PhD	PARTICIPANTS: Research unit heads Course directors Laboratory technician Laboratory Manager Procurement officer Account Auditor	
ASSUMPTIONS	IP approved and funding dispersed	
FINANCIAL IMPLICATIONS	NTDFB 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	Refurbish rooms				10,000			10,000
2	Procurement and installation of fume hoods				20,000			20,000
3	Reagents Procurement of fridge and freezers for the store rooms							0
4	Maintenance of store and facilities							0
<b>TOTALS</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>30,000</b>			<b>30,000</b>

## Action Plan 2: ACE Action Plan to Achieve Excellence in Applied Research

**Time frame:** Year 1

### Activity 2.05: Implementation of analysis and central research laboratories

RESULT	Initiated refurbishment of the research laboratories in Department of biochemistry building and CBRT for improved student and faculty applied research experience	
ACTIVITY	Design and initiation of refurbishment of existing Biochemistry Building	
OUTPUT	Design for refurbishment complete and refurbishment process initiated for the biochemistry building	
OUTPUT INDICATOR <ul style="list-style-type: none"> <li>• Refurbishment of the research labs completed</li> <li>• Supplement equipment in the labs installed</li> </ul>		SOURCE OF VERIFICATION <ul style="list-style-type: none"> <li>• Project Manager</li> <li>• Center Leader: Prof Nok</li> <li>• Procurement Officer: Mr. Anya</li> </ul>
IMPLEMENTATION MILESTONES		
PROCUREMENT	Contractor	
RESPONSIBILITY FOR IMPLEMENTATION	<ul style="list-style-type: none"> <li>• Center Management Officer</li> <li>• Operational representatives</li> </ul>	
DURATION:	Commencement: November, 2014	March, 2016
<div> <div> <b>PRIMARY CONSTITUENTS:</b> <ul style="list-style-type: none"> <li>• NTDFS Faculty</li> <li>• NTDFS Leadership</li> <li>• Biochemistry department faculty</li> <li>• Center for biotechnology and training faculty</li> <li>• Students (current &amp; prospective) masters &amp; PhD, short course</li> <li>• Post-graduate School</li> <li>• ABU Senate</li> <li>• Police</li> <li>• National Forensics lab</li> <li>• Armed forces</li> </ul> </div> <div> <b>PARTICIPANTS:</b> <ul style="list-style-type: none"> <li>• Center Management Officer</li> <li>• Operational representatives</li> </ul> </div> </div>		
ASSUMPTIONS	IP approved and funds disbursed	
FINANCIAL IMPLICATIONS	NTDFB 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	Customization of research labs							0
2	Procurement and installation of supplement equipment				50,000			50,000
3	Lab maintenance	500	500	500	500			2,000
4	Equipment maintenance and repair	1,500	1,500	1,500	1,500			6,000
<b>TOTALS</b>		<b>2,000</b>	<b>2,000</b>	<b>2,000</b>	<b>52,000</b>			<b>58,000</b>

## Action Plan 2: ACE Action Plan to Achieve Excellence in Applied Research

Time frame: Year 1

### Activity 2.06: Implementation of Bio-bank facility

RESULT	Bio-bank facility established for student and faculty applied research activities						
ACTIVITY	Establishment of bio-bank in CBRT						
OUTPUT	Bio-bank facility available for use						
OUTPUT INDICATOR <ul style="list-style-type: none"> <li>Bio-bank established</li> <li>Databank set up</li> </ul>				SOURCE OF VERIFICATION <ul style="list-style-type: none"> <li>Project Manager: Dr Oyekemi Nash</li> <li>Center Leader: Prof Nok</li> <li>Procurement Officer: Mr. Ishaya Nuhu</li> </ul>			
IMPLEMENTATION MILESTONES							
PROCUREMENT	Contractor						
RESPONSIBILITY FOR IMPLEMENTATION	<ul style="list-style-type: none"> <li>Center Management Officer</li> <li>Operational representatives</li> </ul>						
DURATION:	Commencement: November, 2014				On going		
PRIMARY CONSTITUENTS: <ul style="list-style-type: none"> <li>NTDFS Faculty</li> <li>NTDFS Leadership</li> <li>Biochemistry department faculty</li> <li>Center for biotechnology and training faculty</li> <li>Students (current &amp; prospective) masters &amp; PhD, short course</li> <li>Post-graduate School</li> <li>ABU Senate</li> <li>Police</li> <li>National Forensics lab</li> <li>Armed forces</li> </ul>				PARTICIPANTS: <ul style="list-style-type: none"> <li>Center Management Officer</li> <li>Operational representatives</li> </ul>			
ASSUMPTIONS	IP approved and funds disbursed						
FINANCIAL IMPLICATIONS	NTDFB 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	Procurement and installation of -80°C freezers with and without CO <sub>2</sub>				30,000			30,000
2	Establishment of databank							0
3	Personnel databank maintenance							0
4	Maintenance of bio-bank equipment, CO <sub>2</sub> procurement				500			500
5	Databank Software licensing							
<b>TOTALS</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>30,500</b>			<b>30,500</b>

## Action Plan 2: ACE Action Plan to Achieve Excellence in Applied Research

**Timeframe:** Year 1

### Activity 2.07: Implementation of vaccination development facility

RESULT	Vaccination facility developed for student and faculty applied research activities	
ACTIVITY	Initiating and developing a vaccination facility in CBRT	
OUTPUT	Vaccination facility equipped and available for use	
OUTPUT INDICATOR <ul style="list-style-type: none"> <li>• Vaccination facility equipped.</li> <li>• Vaccination facility stocked with animals.</li> </ul>		SOURCE OF VERIFICATION <ul style="list-style-type: none"> <li>• Project Manager, Dr Oyekemi Nash</li> <li>• Center Leader: Prof Nok</li> <li>• Procurement Officer: Mr. Ishaya Nuhu</li> </ul>
IMPLEMENTATION MILESTONES		
PROCUREMENT	Contractor	
RESPONSIBILITY FOR IMPLEMENTATION	<ul style="list-style-type: none"> <li>• Center Management Officer</li> <li>• Operational representatives</li> </ul>	
DURATION:	Commencement: September, 2014	March, 2016
PRIMARY CONSTITUENTS: <ul style="list-style-type: none"> <li>• NTDFS Faculty</li> <li>• NTDFS Leadership</li> <li>• Biochemistry department faculty</li> <li>• Center for biotechnology and training faculty</li> <li>• Students (current &amp; prospective) masters &amp; PhD, short course</li> <li>• Post-graduate School</li> <li>• ABU Senate</li> <li>• Police</li> <li>• National Forensics lab</li> <li>• Armed forces</li> </ul>		PARTICIPANTS: <ul style="list-style-type: none"> <li>• Center Management Officer</li> <li>• Operational representatives</li> </ul>
ASSUMPTIONS	IP approved and funds disbursed	
FINANCIAL IMPLICATIONS	NTDFB 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	Equipment procurement and installation		40,000		80,000			40,000
2	Maintenance of equipment	500	500	500	500			2,000
3	Purchase and maintenance of animals	1,500	1,500	1,500	1,500			6,000
<b>TOTALS</b>		<b>2,000</b>	<b>42,000</b>	<b>2,000</b>	<b>82,000</b>			<b>128,000</b>

## Action Plan 2: ACE Action Plan to Achieve Excellence in Applied Research

**Timeframe:** Year 1

### Activity 2.08: Implementation of ICT Facility

RESULT	ICT facility upgraded for improved teaching and research and bioinformatics services	
ACTIVITY	Upgrading the ICT facility at CBRT	
OUTPUT	Students and faculty have unfettered access to information and internet services	
OUTPUT INDICATOR <ul style="list-style-type: none"> <li>• ICT facility completed</li> <li>• Bio-informatics software installed</li> </ul>		SOURCE OF VERIFICATION <ul style="list-style-type: none"> <li>• Project Manager: Dr Oyekemi Nash</li> <li>• Center Leader: Prof Nok</li> <li>• Procurement Officer: Mr. Ishaya Nuhu</li> </ul>
IMPLEMENTATION MILESTONES		
PROCUREMENT	Contractor	
RESPONSIBILITY FOR IMPLEMENTATION	Center Management Officer Operational representatives	
DURATION: 4 years (project life)	Commencement: June,2014	On going
PRIMARY CONSTITUENTS: <ul style="list-style-type: none"> <li>• NTDFS Faculty</li> <li>• NTDFS Leadership</li> <li>• Biochemistry department faculty</li> <li>• Center for biotechnology and training faculty</li> <li>• Students (current &amp; prospective) masters &amp; PhD, short course</li> <li>• Post-graduate School</li> <li>• ABU Senate</li> <li>• Police</li> <li>• National Forensics lab</li> <li>• Armed forces</li> </ul>		PARTICIPANTS: <ul style="list-style-type: none"> <li>• Center Management Officer</li> <li>• Operational representatives</li> </ul>
ASSUMPTIONS	IP approved and funds disbursed	
FINANCIAL IMPLICATIONS	NTDFB 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	Customization of ICT room			10,000				10,000
2	Procurement of server and its installation				5,000			5,000
3	Procurement of software for bioinformatics							0
4	Procurement and installation of terminal computers							0
5	Website installation and maintenance	5,000	500	500	500			6,500
<b>TOTALS</b>		<b>5,000</b>	<b>500</b>	<b>10,500</b>	<b>5,500</b>			<b>21,500</b>

## Action Plan 2: ACE Action Plan to Achieve Excellence in Applied Research

**Timeframe:** Year 1

### Activity 2.09: Research Project funding scheme

RESULT	Funds available for research project works							
ACTIVITY	Support research activities of students and faculty							
OUTPUT	Students had access to research funds							
OUTPUT INDICATOR <ul style="list-style-type: none"> <li>Number of students granted research funds</li> <li>Amount of research grant disbursed</li> </ul>					SOURCE OF VERIFICATION <ul style="list-style-type: none"> <li>Project management</li> </ul>			
IMPLEMENTATION MILESTONES								
PROCUREMENT	n/a							
RESPONSIBILITY FOR IMPLEMENTATION	<ul style="list-style-type: none"> <li>Workshop leader(s)</li> <li>International facilitators</li> <li>Project Manager</li> </ul>							
DURATION: 4 years (project life)	Commencement: December, 2014				On-going			
PRIMARY CONSTITUENTS: <ul style="list-style-type: none"> <li>Biochemistry Faculty</li> <li>CBRT Faculty</li> <li>CMO</li> <li>Students</li> </ul>				PARTICIPANTS: <ul style="list-style-type: none"> <li>International Facilitators</li> <li>NTDFB Faculty</li> <li>Biochemistry Faculty</li> <li>CBRT Faculty</li> <li>CMO</li> </ul>				
ASSUMPTIONS	Faculty will want to participate in this workshop							
FINANCIAL IMPLICATIONS	NTDFB 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	MSc projects				110,000			110,000
2	PhD projects				200,000			200,000
<b>TOTALS</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>310,000</b>			<b>310,000</b>

## Action Plan 2: ACE Action Plan to Achieve Excellence in Applied Research

**Timeframe:** Year 1

### Activity 2.10: Dissemination of research output

RESULT	Funds available for publication of research work results							
ACTIVITY	Support publications of research work outputs by students							
OUTPUT	Research publications made by students and faculty							
OUTPUT INDICATOR <ul style="list-style-type: none"> <li>• Number of publications in journals</li> <li>• Papers presented in Conferences</li> </ul>					SOURCE OF VERIFICATION <ul style="list-style-type: none"> <li>• Project management</li> </ul>			
IMPLEMENTATION MILESTONES								
PROCUREMENT	n/a							
RESPONSIBILITY FOR IMPLEMENTATION	<ul style="list-style-type: none"> <li>• Workshop leader(s)</li> <li>• International facilitators</li> <li>• Project Manager</li> </ul>							
DURATION: four years (project life)	Commencement: December, 2014			On-going				
PRIMARY CONSTITUENTS: <ul style="list-style-type: none"> <li>• Biochemistry Faculty</li> <li>• CBRT Faculty</li> <li>• CMO</li> <li>• Students</li> </ul>				PARTICIPANTS: <ul style="list-style-type: none"> <li>• International Facilitators</li> <li>• NTDFB Faculty</li> <li>• Biochemistry Faculty</li> <li>• CBRT Faculty</li> <li>• CMO</li> </ul>				
ASSUMPTIONS	Faculty will want to participate in this workshop							
FINANCIAL IMPLICATIONS	NTDFB 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	International conferences			9,000	9,000			18,000
2	Journal publications							0
<b>TOTALS</b>		<b>0</b>	<b>0</b>	<b>9,000</b>	<b>9,000</b>			<b>18,000</b>

## Action Plan 2: ACE Action Plan to Achieve Excellence in Applied Research

**Timeframe:** Year 1

**Activity 2.11: Exchange program for faculty and students**

RESULT	Faculty and students acquired improved teaching and research expertise							
ACTIVITY	Promoting regional and international academic exchanges among research institutions for better research quality outputs.							
OUTPUT	Research publications made by students and faculty							
OUTPUT INDICATOR <ul style="list-style-type: none"> <li>• Number of faculty and student exchanges</li> <li>• Research works carried out</li> <li>• No of Joint authored publications</li> </ul>					SOURCE OF VERIFICATION <ul style="list-style-type: none"> <li>• Project management</li> </ul>			
IMPLEMENTATION MILESTONES								
PROCUREMENT	n/a							
RESPONSIBILITY FOR IMPLEMENTATION	<ul style="list-style-type: none"> <li>• Workshop leader(s)</li> <li>• International facilitators</li> <li>• Project Manager</li> </ul>							
DURATION: four years (project life)	Commencement: Feb, 2014, 2014				On-going			
PRIMARY CONSTITUENTS: <ul style="list-style-type: none"> <li>• Biochemistry Faculty</li> <li>• CBRT Faculty</li> <li>• CMO</li> <li>• Students</li> </ul>				PARTICIPANTS: <ul style="list-style-type: none"> <li>• International Facilitators</li> <li>• NTDFB Faculty</li> <li>• Biochemistry Faculty</li> <li>• CBRT Faculty</li> <li>• CMO</li> </ul>				
ASSUMPTIONS	Faculty will want to participate in this workshop							
FINANCIAL IMPLICATIONS	NTDFB 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	Research visit to University of Bremen	27,000	27,000	27,000	27,000			108,000
2	Research visit to Western Cape University							

	Research visit to Washington University							
	Research visit to Hebrew University							
	Research visit to CDC, Atlanta							
	Research visit to Tokyo University							
TOTALS		27,000	27,000	27,000	27,000			108,000

### Action Plan 3: ACE Action Plan to Achieve Outreach to students and faculty

**Time frame:** Year 1

#### Activity 3.01: Regional partnership development

RESULT	Expanded partnership network for teaching, applied research and collaboration for NTD and forensic biotechnology							
ACTIVITY	Regional partnership development							
OUTPUT	New regional partners engaged							
OUTPUT INDICATOR <ul style="list-style-type: none"> <li>Regional partners signing MOUs with the NTDFB center</li> </ul>				SOURCE OF VERIFICATION <ul style="list-style-type: none"> <li>Project manger</li> <li>University Registrar Office</li> </ul>				
IMPLEMENTATION MILESTONES	August 2014: regional contacts explored							
PROCUREMENT	n/a							
RESPONSIBILITY FOR IMPLEMENTATION	Center Management Office							
DURATION: 1 Year		Commencement: August 2014			Completion: June 2015			
PRIMARY CONSTITUENTS: <ul style="list-style-type: none"> <li>All NTDFB faculty</li> <li>Regional faculty relevant to NTDs and Forensics</li> <li>National and Regional Students (current &amp; future)</li> </ul>				PARTICIPANTS: <ul style="list-style-type: none"> <li>Center Management Office</li> <li>Regional partner leadership</li> </ul>				
ASSUMPTIONS	Regional universities will want to partner with the center							
FINANCIAL IMPLICATIONS	NTDFB 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	Visiting existing and potential partner institutions (air far, accommodations, subsistence)		10,000	11,000		30,000		51,000
2	Workshop for joint training projects							0

3	Workshop for joint research projects							0
<b>TOTALS</b>		<b>0</b>	<b>10,000</b>	<b>11,000</b>	<b>30,000</b>	<b>0</b>		<b>51,000</b>

### Action Plan 3: ACE Action Plan to Achieve Outreach to students and faculty

**Time frame:** Year 1

#### Activity 3.02: Industry partner development

RESULT	Industry relationships created for faculty and student outreach experiences, understanding of the health technology market and job linkage for graduating students						
ACTIVITY	Industry partner development						
OUTPUT	Industry partnership secured						
OUTPUT INDICATOR	<ul style="list-style-type: none"> <li>Number of industry partners</li> </ul>						SOURCE OF VERIFICATION Project manger University registrar
IMPLEMENTATION MILESTONES	September 2014: contact potential partners in industry						
PROCUREMENT	n/a						
RESPONSIBILITY FOR IMPLEMENTATION	<ul style="list-style-type: none"> <li>Capacity building unit leader</li> <li>Center Leader</li> <li>Deputy Center Leader</li> </ul>						
DURATION:	Commencement:		Completion:				
PRIMARY CONSTITUENTS:	<ul style="list-style-type: none"> <li>NTDFB Faculty</li> <li>Students (Current &amp; Prospective)</li> <li>Industry employers</li> </ul>			PARTICIPANTS:			
				<ul style="list-style-type: none"> <li>NTDFB Faculty</li> <li>Students (Current &amp; Prospective)</li> <li>Industry employers</li> </ul>			
ASSUMPTIONS	Industry desires relationships with academic and university programs						
FINANCIAL IMPLICATIONS	NTDFB 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 Visiting potential industry partners	0	0	2,000	0	2,000	0	4,000
2 Workshop for joint training projects	0	0	0	0	0	15,000	15,000
3 Workshop for joint research projects	0	0	0	0	0	0	0

TOTALS	0	0	2,000	0	2,000	15,000	19,000
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### Action Plan 3: ACE Action Plan to Achieve Outreach to students and faculty

**Time frame:** Year 1

#### Activity 3.03: Implementation of PR Website

RESULT	Center website to disseminate center information, host content, publicize events and programs for all national and regional faculty and students	
ACTIVITY	Website development	
OUTPUT	Center website developed and publically accessible	
OUTPUT INDICATOR <ul style="list-style-type: none"> <li>• Website developed</li> <li>• Website online</li> </ul>		SOURCE OF VERIFICATION Director of ICICT: Prof. Junaid Sahalu Project manager
IMPLEMENTATION MILESTONES	September 2014: Design website and content October 2014: website posted publically	
PROCUREMENT	n/a	
RESPONSIBILITY FOR IMPLEMENTATION	<ul style="list-style-type: none"> <li>• Project Manager</li> <li>• Research Units</li> <li>• Deputy Center Leader</li> </ul>	
DURATION: 2 months	Commencement: September 2014	Completion: October 2014
<div> <div> <b>PRIMARY CONSTITUENTS:</b> <ul style="list-style-type: none"> <li>• NTDFS Faculty</li> <li>• NTDFS Leadership</li> <li>• Biochemistry department faculty</li> <li>• Center for biotechnology and training faculty</li> <li>• Students (current &amp; prospective: masters &amp; PhD, short course)</li> <li>• Post-graduate School</li> <li>• ABU Senate</li> <li>• Police</li> <li>• National Forensics lab</li> <li>• Armed forces</li> </ul> </div> <div> <b>PARTICIPANTS:</b> <ul style="list-style-type: none"> <li>• Project Manager</li> <li>• Research Units</li> <li>• Deputy Center Leader</li> </ul> </div> </div>		
ASSUMPTIONS	Sufficient university web capabilities exist	
FINANCIAL IMPLICATIONS	NTDFB Budget and ABU hosts the domain	

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	Setting up of the website (development of software, integration of website into the University's website, etc.)	5,000	0	0	0			5,000
2	Maintenance of website	0	900	900	900			2,700
<b>TOTALS</b>		<b>5,000</b>	<b>900</b>	<b>900</b>	<b>900</b>			<b>7,700</b>

**Action Plan 3:** ACE Action Plan to Achieve National and Regional outreach to students and faculty

**Time frame:** Year 1

**Activity 3.04:** Organization of Workshops

RESULT	Skills and knowledge provided to stakeholders and communities on emergent epidemic tropical and regional diseases and infections at the ACE Centre						
ACTIVITY	Initiation and running of workshops on emergent infectious diseases outbreaks.						
OUTPUT	Communities and target stakeholders in the region trained to understand, control and prevent infection outbreaks						
OUTPUT INDICATOR <ul style="list-style-type: none"> <li>No of workshops organized</li> <li>Number of stakeholders ad communities</li> <li>Number of national and regional participants</li> </ul>					SOURCE OF VERIFICATION <ul style="list-style-type: none"> <li>Project manager</li> <li>M &amp; E Officer</li> </ul>		
IMPLEMENTATION MILESTONES	July 2014: partnerships for international and specialized skill training in place November 2014: commencement of training trips Ongoing throughout the year						
PROCUREMENT	n/a						
RESPONSIBILITY FOR IMPLEMENTATION	Capacity building unit head						
DURATION: Two weeks	Commencement: April, 2014			Completion: May,2015			
PRIMARY CONSTITUENTS: <ul style="list-style-type: none"> <li>NTDFS Faculty</li> <li>NTDFS Leadership</li> <li>Center for biotechnology and training faculty</li> <li>Non-Governmental Organizations (NGO)</li> <li>Government agencies /departments</li> </ul>				PARTICIPANTS: <ul style="list-style-type: none"> <li>NTDFS Faculty</li> <li>NTDFS Leadership</li> <li>Center for biotechnology and training faculty</li> <li>NGO</li> <li>Government agencies /departments</li> </ul>			
ASSUMPTIONS	International training experiences exist and willingness to host foreign trainees, no travel restriction for any reason out of or into Nigeria/the region.						
FINANCIAL IMPLICATIONS	NTDFB 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	Workshop running cost (4d duration per 25 participants)				5,000			5,000
2	Program materials and administration				1,000			1,000
3	Travel expenses for external resource persons institutions				5,000			5,000
4	Accommodation for resource persons				10,000			10,000
<b>TOTALS</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>21,000</b>	<b>0</b>	<b>0</b>	<b>21,000</b>

**Action Plan 3:** ACE Action Plan to Achieve National and Regional outreach to students and faculty

**Time frame:** Year 1

**Activity 3.05:** Support Faculty Grant Writing

RESULT	Faculty trained in the art of writing proposals for grants							
ACTIVITY	Grant proposal writing workshops for national and regional faculty							
OUTPUT	Faculty trained in successful grant proposal research techniques							
OUTPUT INDICATOR <ul style="list-style-type: none"> <li>• Number of grant proposals submitted</li> <li>• No of successful grants obtained</li> <li>• Amount of grants secured.</li> </ul>					SOURCE OF VERIFICATION <ul style="list-style-type: none"> <li>• Project manager</li> <li>• M &amp; E Officer</li> </ul>			
IMPLEMENTATION MILESTONES	July 2015: Successful grant proposals							
PROCUREMENT	n/a							
RESPONSIBILITY FOR IMPLEMENTATION	Capacity building unit head							
DURATION: one week		Commencement: February, 2015			Completion: March, 2015			
PRIMARY CONSTITUENTS: <ul style="list-style-type: none"> <li>• NTDFS Faculty</li> <li>• NTDFS Leadership</li> <li>• Biochemistry department faculty</li> <li>• Center for biotechnology and training faculty</li> <li>• Students (current &amp; prospective) masters &amp; PhD,</li> </ul>				PARTICIPANTS: <ul style="list-style-type: none"> <li>• NTDFS Faculty</li> <li>• NTDFS Leadership</li> <li>• Biochemistry department faculty</li> <li>• Center for biotechnology and training faculty</li> <li>• Students (current &amp; prospective) masters &amp; PhD</li> </ul>				
ASSUMPTIONS	International training experiences exist and willingness to host foreign trainees, no travel restriction for any reason out of Nigeria/the region.							
FINANCIAL IMPLICATIONS	NTDFB 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	Course, for 4 /10 participants			3,000				3,000
2	Program materials and administration			600				600

3	Travels expenses (inclusive of external resource persons			2,000				2,000
4	Accommodation for external resource persons			1,500				1,500
<b>TOTALS</b>				<b>7,100</b>				<b>7,100</b>

**Action Plan 3:** ACE Action Plan to Achieve National and Regional outreach to students and faculty

**Time frame:** Year 1

**Activity 3.06:** Specialized research technique training for national and regional faculty and students

RESULT	Faculty and students trained in advanced research techniques and skills not currently available at ABU to return to ABU to increased capacity and train in those newly acquired skills						
ACTIVITY	Specialized Research Technique training for national and regional faculty and students						
OUTPUT	Faculty and students trained in advanced research techniques and skills not currently available at ABU						
OUTPUT INDICATOR <ul style="list-style-type: none"> <li>• Number of national students and faculty trained</li> <li>• Number of regional students and faculty trained</li> </ul>					SOURCE OF VERIFICATION <ul style="list-style-type: none"> <li>• Project manager</li> <li>• M &amp; E Officer</li> </ul>		
IMPLEMENTATION MILESTONES	July 2014: partnerships for international and specialized skill training in place November 2014: commencement of training trips Ongoing throughout the year						
PROCUREMENT	n/a						
RESPONSIBILITY FOR IMPLEMENTATION	Capacity building unit head						
DURATION: 1 year		Commencement: July 2014			Completion: June 2015		
PRIMARY CONSTITUENTS: <ul style="list-style-type: none"> <li>• NTDFS Faculty</li> <li>• NTDFS Leadership</li> <li>• Biochemistry department faculty</li> <li>• Center for biotechnology and training faculty</li> <li>• Students (current &amp; prospective) masters &amp; PhD,</li> </ul>				PARTICIPANTS: <ul style="list-style-type: none"> <li>• NTDFS Faculty</li> <li>• NTDFS Leadership</li> <li>• Biochemistry department faculty</li> <li>• Center for biotechnology and training faculty</li> <li>• Students (current &amp; prospective) masters &amp; PhD</li> </ul>			
ASSUMPTIONS	International training experiences exist and willingness to host foreign trainees, no travel restriction for any reason out of Nigeria/the region.						
FINANCIAL IMPLICATIONS	NTDFB 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	Customized training programs at ACE			14,000				14,000
2	Customized training programs at partner institutions	14,000	17,000		34,000			65,000
3	Workshop for training design at partners institutions							0
<b>TOTALS</b>		<b>14,000</b>	<b>17,000</b>	<b>0</b>	<b>34,00</b>	<b>0</b>	<b>0</b>	<b>65,000</b>

### Action Plan 3: ACE Action Plan to Achieve Outreach to students and faculty

**Time frame:** Year 1

#### Activity 3.07: Regional Faculty Exchange

RESULT	Faculty from the center exchanging to regional partner sites and regional partner faculty coming to the center						
ACTIVITY	Regional faculty exchange						
OUTPUT	Exchange occurring between faculty members throughout the region						
OUTPUT INDICATOR <ul style="list-style-type: none"> <li>• Number of faculty exchanged to regional sites</li> <li>• Number regional faculty coming to the center</li> </ul>				SOURCE OF VERIFICATION <ul style="list-style-type: none"> <li>• Project manager</li> <li>• ABU Registrar</li> </ul>			
IMPLEMENTATION MILESTONES	Commence requests for exchange support Ongoing throughout the year						
PROCUREMENT	n/a						
RESPONSIBILITY FOR IMPLEMENTATION	<ul style="list-style-type: none"> <li>• Capacity building unit</li> <li>• Project manager</li> <li>• Administrative assistant</li> </ul>						
DURATION:	Commencement:		Completion:				
PRIMARY CONSTITUENTS: <ul style="list-style-type: none"> <li>• All NTDFB faculty</li> <li>• Regional faculty relevant to NTDs and Forensics</li> <li>• National and Regional Students (current &amp; future)</li> </ul>			PARTICIPANTS: <ul style="list-style-type: none"> <li>• Center Management Officer</li> <li>• All NTDFB faculty</li> <li>• Regional faculty relevant to NTDs and Forensics</li> <li>• National and Regional Students (current &amp; future)</li> </ul>				
ASSUMPTIONS	Faculty will want to exchange into the center and the region.						
FINANCIAL IMPLICATIONS	NTDFB						
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	Preparative seminars						0
2	Advanced teaching seminars						0
3	Travel expenses						0

4	Accommodation							0
5	Bench fees							0
6	Research visits to Bremen				13,500			13,500
<b>TOTALS</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>13,500</b>	<b>0</b>	<b>0</b>	<b>13,500</b>

### Action Plan 3: ACE Action Plan to Achieve Outreach to students and faculty

**Time frame:** Year 1

#### Activity 3.08: Regional student exchange

RESULT	Students from the center exchanging to regional partner sites and regional partner Students coming to the center							
ACTIVITY	Regional student exchange							
OUTPUT	Exchange occurring between student members throughout the region							
OUTPUT INDICATOR <ul style="list-style-type: none"> <li>• Number of students exchanged to regional sites</li> <li>• Number students coming to the center</li> </ul>					SOURCE OF VERIFICATION <ul style="list-style-type: none"> <li>• Project manager</li> <li>• ABU Registrar</li> </ul>			
IMPLEMENTATION MILESTONES	Commencement of Student exchanges Student exchanges ongoing through end of year 1							
PROCUREMENT	n/a							
RESPONSIBILITY FOR IMPLEMENTATION	<ul style="list-style-type: none"> <li>• Capacity building unit</li> <li>• Project manager</li> <li>• Administrative assistant</li> </ul>							
DURATION:	Commencement:		Completion:					
PRIMARY CONSTITUENTS: <ul style="list-style-type: none"> <li>• All NTDFB faculty</li> <li>• Regional faculty relevant to NTDs and Forensics</li> <li>• National and Regional Students (current &amp; future)</li> </ul>			PARTICIPANTS: <ul style="list-style-type: none"> <li>• Capacity building unit</li> <li>• Project manager</li> <li>• Administrative assistant</li> <li>• National and Regional Students (current &amp; future)</li> </ul>					
ASSUMPTIONS	Students from the university and region will want to exchange							
FINANCIAL IMPLICATIONS	NTDFB 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	Preparative seminars	0	0	0	0	0	0	0
2	Travel expenses	0	0	0	0	0	0	0

3	Accommodation	0	0	0	0	0	0	0
4	Bench fees	0	0	0	0	0	0	0
5	Research visit to University of Bremen	0	0	0	0	0	0	0
6	Research visit to CDC, Atlanta	0	0	0	0	0	0	0
7	Research visit to University of Tokyo	0	0	0	0	0	0	0
<b>TOTALS</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

### Action Plan 3: ACE Action Plan to Achieve Outreach to students and faculty

**Time frame:** Year 1

#### Activity 3.09: Recruitment events for women and other underserved populations

RESULT	Improved access to populations at risk to being excluded from health sciences education, particularly women and underserved populations							
ACTIVITY	Recruitment events for women and other underserved populations							
OUTPUT	Increased recruitment of women and underserved populations							
OUTPUT INDICATOR <ul style="list-style-type: none"> <li>• Number of events reaching women</li> <li>• Number of science events reaching bachelors and high school</li> </ul>					SOURCE OF VERIFICATION <ul style="list-style-type: none"> <li>• Project manager</li> <li>• Administrative assistant</li> </ul>			
IMPLEMENTATION MILESTONES	March 2015: start outreach event planning June 2015: Hold at least one outreach event							
PROCUREMENT	n/a							
RESPONSIBILITY FOR IMPLEMENTATION	Project manger CMO							
DURATION: 4 months	Commencement: March 2015			Completion: June 2015 (on-going)				
PRIMARY CONSTITUENTS: <ul style="list-style-type: none"> <li>• NTDFB Faculty</li> <li>• Students (Current &amp; prospective)</li> <li>• Citizens of Nigeria</li> </ul>				PARTICIPANTS: <ul style="list-style-type: none"> <li>• NTDFB Faculty</li> <li>• Students Current &amp; prospective</li> </ul>				
ASSUMPTIONS	People like science.							
FINANCIAL IMPLICATIONS	NTDFB 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	Advertising and addressing under-deserved population	1,000	1,000	1,000	1,000			4,000
2	Stipends for under-deserved populations							0
3	Mentoring programs			1,000	1,000			2,000

4	Training for job applications							0
5	Career fairs							0
<b>TOTALS</b>		<b>1,000</b>	<b>1,000</b>	<b>2,000</b>	<b>2,000</b>			<b>6,000</b>

### Action Plan 3: ACE Action Plan to Achieve Outreach to students and faculty

**Time frame:** Year 1

#### Activity 3.10: Language Support for faculty and students

RESULT	Increased English language proficiency and access to the center by non-English speaking regional faculty and students							
ACTIVITY	Language Support for faculty and students							
OUTPUT	English language translation and learning provided to students and faculty in need							
OUTPUT INDICATOR <ul style="list-style-type: none"> <li>• Number of students receiving language support</li> <li>• Number of Faculty receiving language support</li> </ul>					SOURCE OF VERIFICATION <ul style="list-style-type: none"> <li>• English Language department</li> </ul>			
IMPLEMENTATION MILESTONES	September 2014: discuss language support and courses with language department Commence providing language support to students and faculty							
PROCUREMENT	n/a							
RESPONSIBILITY FOR IMPLEMENTATION	Project manager CMO							
DURATION: 1 year	Commencement: September 2014			Completion:				
PRIMARY CONSTITUENTS: <ul style="list-style-type: none"> <li>• NTDFB faculty</li> <li>• Regional faculty</li> <li>• Regional students</li> <li>• Francophone students</li> </ul>				PARTICIPANTS: <ul style="list-style-type: none"> <li>• Regional faculty</li> <li>• Regional students</li> </ul>				
ASSUMPTIONS	Students and faculty willing and capable of r learning English							
FINANCIAL IMPLICATIONS	NTDFB							
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	Stipends for language Course for French speaking students			5,000				5,000
2	Expenses for customized language courses			5,000				5,000

TOTALS	0	0	10,000	0	0	0	10,000
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**Action Plan 4:** ACE Action Plan to Achieve Excellence in laboratory and degree program operations  
**Timeframe:** Year 1

**Activity 4.01:** General Project Management/Center Operations

RESULT	Flexible and agile center that runs efficiently and is able to accomplish all center initiatives						
ACTIVITY	Project Management/Center Operations						
OUTPUT	Functional center with routine operations to complete all center initiatives						
OUTPUT INDICATOR <ul style="list-style-type: none"> <li>• Weekly CMO meetings</li> <li>• Monthly steering committee meeting</li> <li>• Annual International advisory board meetings</li> </ul>					SOURCE OF VERIFICATION <ul style="list-style-type: none"> <li>• Project manager</li> </ul>		
IMPLEMENTATION MILESTONES	First CMO meeting - then bi-weekly or weekly First Steering committee meeting - twice annually First international advisory board meeting						
PROCUREMENT	Office supplies, copier, SUV(s)						
RESPONSIBILITY FOR IMPLEMENTATION	<ul style="list-style-type: none"> <li>• CMO</li> <li>• Operational representatives</li> <li>• Procurement</li> <li>• Accountant</li> <li>• Auditor</li> </ul>						
DURATION: 4 years (project life)	Commencement: June 2014			Completion: June 2018 (on-going)			
PRIMARY CONSTITUENTS: <ul style="list-style-type: none"> <li>• All center Faculty and Students</li> <li>• Regional partner faculty and students</li> </ul>				PARTICIPANTS: <ul style="list-style-type: none"> <li>• CMO</li> <li>• Operational representatives</li> <li>• Procurement</li> <li>• Accountant</li> <li>• Auditor</li> </ul>			
ASSUMPTIONS	IP approved and funds dispersed						
FINANCIAL IMPLICATIONS	NTDFB 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	Secretariat support of CMO meetings (consumables)	300	300	300	300			1,200
2	Steering committee (SC) and IAB meeting expenses			1,500				1,500
3	Travel expenses for SC and IAB meetings			15,200				15,200
4	Accommodation expenses for SC and IAB meetings			4,800				4,800
5	Communication	300	300	300	300			1,200
	Information dissemination	200	200	200	200			800
	Office equipment (copiers, printers, cabinets, etc.)		5,000					5,000
	ACE program meetings of World Bank	6,000	2,000	6,000	2,000			12,400
<b>TOTALS</b>		<b>6,800</b>	<b>7,800</b>	<b>28,300</b>	<b>2,800</b>			<b>45,700</b>

**Action Plan 4:** ACE Action Plan to Achieve Excellence in laboratory and degree program operations  
**Timeframe:** Year 1

**Activity 4.02:** General Project Management/Center Operations

RESULT	Centre faculty adept at seminar presentation							
ACTIVITY	Mounting of seminars for faculty							
OUTPUT	Faculty able to efficiently present seminars							
OUTPUT INDICATOR <ul style="list-style-type: none"> <li>No of workshops/seminars</li> </ul>					SOURCE OF VERIFICATION <ul style="list-style-type: none"> <li>Project manager</li> </ul>			
IMPLEMENTATION MILESTONES								
PROCUREMENT	n/a							
RESPONSIBILITY FOR IMPLEMENTATION	<ul style="list-style-type: none"> <li>CMO</li> <li>Operational representatives</li> <li>Accountant</li> <li>Auditor</li> </ul>							
DURATION: 4 years (project life)	Commencement: June 2014			Completion: June 2018 (on-going)				
PRIMARY CONSTITUENTS: <ul style="list-style-type: none"> <li>All center Faculty and Students</li> <li>Regional partner faculty and students</li> </ul>				PARTICIPANTS: <ul style="list-style-type: none"> <li>CMO</li> <li>Operational representatives</li> <li>Accountant</li> <li>Auditor</li> </ul>				
ASSUMPTIONS	IP approved and funds dispersed							
FINANCIAL IMPLICATIONS	NTDFB 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	Support staff training seminars, etc.	300	300	300	300			1,200
<b>TOTALS</b>		<b>300</b>	<b>300</b>	<b>300</b>	<b>300</b>			<b>1,200</b>

**Action Plan 4:** ACE Action Plan to Achieve Excellence in laboratory and degree program operations

**Timeframe:** Year 1

**Activity 4.03: Implementation of research project funding scheme**

RESULT	Effective and efficient funding of research project works							
ACTIVITY	Management of research fund disbursement							
OUTPUT	Improved quality research work and output							
OUTPUT INDICATOR <ul style="list-style-type: none"> <li>• Weekly CMO meetings</li> <li>• Monthly steering committee meeting</li> <li>• Annual International advisory board meetings</li> </ul>						SOURCE OF VERIFICATION Project manager		
IMPLEMENTATION MILESTONES								
PROCUREMENT	n/a							
RESPONSIBILITY FOR IMPLEMENTATION	<ul style="list-style-type: none"> <li>• CMO</li> <li>• Operational representatives</li> <li>• Accountant</li> <li>• Auditor</li> </ul>							
DURATION: 4 years (project life)	Commencement: June 2014			Completion: June 2018 (on-going)				
PRIMARY CONSTITUENTS: <ul style="list-style-type: none"> <li>• All center Faculty and Students</li> <li>• Regional partner faculty and students</li> </ul>				PARTICIPANTS: <ul style="list-style-type: none"> <li>• CMO</li> <li>• Operational representatives</li> <li>• Accountant</li> <li>• Auditor</li> </ul>				
ASSUMPTIONS	IP approved and funds dispersed							
FINANCIAL IMPLICATIONS	NTDFB 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	External review of proposals	0	300	300	300			900
2	Administration of fund	0	100	100	100			300

<b>TOTALS</b>	<b>0</b>	<b>400</b>	<b>400</b>	<b>400</b>			<b>1,200</b>
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**Action Plan 4:** ACE Action Plan to Achieve Excellence in laboratory and degree program operations

**Timeframe:** Year 1

**Activity 4.04:** Hiring of Staff (Project manager

RESULT	Skilled project manager hired who runs day to day operations of the center keeping all streams of work moving forward efficiently							
ACTIVITY	Hiring of project manager							
OUTPUT	Project manager hired							
OUTPUT INDICATOR	<ul style="list-style-type: none"> <li>Project manager hired</li> </ul>					SOURCE OF VERIFICATION		
						<ul style="list-style-type: none"> <li>Employment letter</li> </ul>		
IMPLEMENTATION MILESTONES	September 2014: Advertise and recruit Fill position as soon as qualified candidate identified							
PROCUREMENT	Public hiring advertisement							
RESPONSIBILITY FOR IMPLEMENTATION	CMO							
DURATION: 1-4 months	Commencement: September 2014			Completion: December 2014				
PRIMARY CONSTITUENTS: <ul style="list-style-type: none"> <li>NTDFB center faculty</li> <li>Students (current &amp; prospective)</li> <li>University community</li> <li>Science faculty in general</li> <li>Regional faculty/students</li> <li>Regional partners</li> </ul>				PARTICIPANTS: <ul style="list-style-type: none"> <li>CMO</li> </ul>				
ASSUMPTIONS	A qualified candidate who is available and willing							
FINANCIAL IMPLICATIONS	NTDFB 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	Employment of Project Manager (\$28,000/year)	0	0	7,000	7,000	7,000	7,000	28,000
<b>Total</b>		<b>0</b>	<b>0</b>	<b>7,000</b>	<b>7,000</b>	<b>7,000</b>	<b>7,000</b>	<b>28,000</b>

**Action Plan 4:** ACE Action Plan to Achieve Excellence in laboratory and degree program operations

**Timeframe:** Year 1

**Activity 4.05:** Student and faculty evaluation and feedback on programs

RESULT	Students and faculty have the opportunity to provide feedback for the improvement in courses, research and center operations							
ACTIVITY	Student and faculty evaluation and feedback on programs							
OUTPUT	Students and faculty submit feedback on courses and the center							
OUTPUT INDICATOR <ul style="list-style-type: none"> <li>Percentage of students completing structured evaluation</li> <li>Percentage of faculty completing structured evaluation</li> </ul>					SOURCE OF VERIFICATION <ul style="list-style-type: none"> <li>M &amp; E officer</li> <li>Project manager</li> <li>Web/ICICT representation</li> </ul>			
IMPLEMENTATION MILESTONES	February 2015: design evaluation forms March-April 2015: web/ICICT person makes web available May-June 2015: first evaluation period							
PROCUREMENT	n/a							
RESPONSIBILITY FOR IMPLEMENTATION	<ul style="list-style-type: none"> <li>M &amp; E officer</li> <li>Project Manager</li> <li>CMO</li> </ul>							
DURATION: 6 months	Commencement: March 2015			Completion: June 2015				
PRIMARY CONSTITUENTS: <ul style="list-style-type: none"> <li>NTDFB faculty</li> <li>Students (current and prospective) masters, PhD and short course</li> </ul>				PARTICIPANTS: M & E officer <ul style="list-style-type: none"> <li>Project Manager</li> </ul> CMO PARTICIPANTS: <ul style="list-style-type: none"> <li>NTDFB faculty</li> <li>Students (current and prospective) masters, PhD and short course</li> </ul>				
ASSUMPTIONS	Constituents are willing to give honest feedback							
FINANCIAL IMPLICATIONS	NTDFB 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	Mounting of online evaluation process			1,000	1,000			2,000

2	Administering and maintenance of the online evaluation program							0
3	Evaluation material							0
4	Information dissemination			100	100			200
<b>TOTALS</b>		<b>0</b>	<b>0</b>	<b>1,100</b>	<b>1,100</b>			<b>2,200</b>

**Action Plan 4:** ACE Action Plan to Achieve Excellence in laboratory and degree program operations

**Timeframe:** Year 1

**Activity 4.06:** Accreditation of Teaching Programs

RESULT	Nationally and internationally accredited MSc and PhD programs promoting the skill and expertise of the center							
ACTIVITY	National and International accreditation							
OUTPUT	Accreditation of programs by national and international bodies							
OUTPUT INDICATOR <ul style="list-style-type: none"> <li>• Number of national accreditations</li> <li>• Number of international accreditations</li> </ul>					SOURCE OF VERIFICATION <ul style="list-style-type: none"> <li>• Accreditation agencies</li> </ul>			
IMPLEMENTATION MILESTONES								
PROCUREMENT	n/a							
RESPONSIBILITY FOR IMPLEMENTATION	CMO							
DURATION:	Commencement:		Completion:					
PRIMARY CONSTITUENTS:			PARTICIPANTS:					
ASSUMPTIONS	Meet quality standards as a center for accreditation							
FINANCIAL IMPLICATIONS	NTDFB Budget and University 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	Preparation and other workshops		1,000		1,000			2,000
2	Travel expenses	3,000	3,000	3,000				9,000
3	Accommodation for accreditors	1,200	4,500	1,200				6,900
4	Consultancy fees							0

5	Preparation of application							0
6	Application fees							0
<b>TOTALS</b>		<b>0</b>	<b>5,200</b>	<b>4,500</b>	<b>1,200</b>			<b>17,900</b>

## Action Plan 5: Contingency

**Timeframe:** Year 1

### Activity 5.01: Contingency

RESULT	Effective management of Centre for the realization of planned activities.							
ACTIVITY								
OUTPUT	Execution of unforeseen emergencies/activities							
OUTPUT INDICATOR Expenditures outside budgets						SOURCE OF VERIFICATION Project Manager		
IMPLEMENTATION MILESTONES								
PROCUREMENT	n/a							
RESPONSIBILITY FOR IMPLEMENTATION	CMO							
DURATION: 1 year (project life)1-4 months	Commencement: January, 2014			Completion: June, 2015				
PRIMARY CONSTITUENTS: NTDFB center faculty Students (current & prospective) University community Science faculty in general Regional faculty/students Regional partners				PARTICIPANTS: CMO				
ASSUMPTIONS	A qualified candidate who is available and willing							
FINANCIAL IMPLICATIONS	NTDFB 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	Contingency ACE CL	15,000	15,000	15,000	15,000			30,000
1	Contingency ACE Partners	10,000	10,000	10,000	10,000			28,000
<b>Total</b>		<b>25,000</b>	<b>25,000</b>	<b>25,000</b>	<b>25,000</b>			<b>28,000</b>