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Research Grant Writing: Model for Revenue Generation through sustained research and product delivery.

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The African Center of Excellence for Genomic of Infectious Diseases (ACEGID), a World Bank funded center of excellence, was established to develop capacity in the field of Genomics in young African scientists. It is well established that research drives education and as such, the main goal of ACEGID is to develop a critical mass of well-trained African scientists to undertake tractable genomics researches for infectious diseases control and elimination in Africa.

In order to achieve this feat, there is a need **to develop a sustainable training strategy, through revenue generation.** The revenue generation strategy of ACEGID has been through attraction of research grants, and royalties from products developed from translational research, service deliveries and short-term trainings.

We have attracted grants from major funding agencies including: The USA National Institutes of Health (NIH), The Bill and Melinda Gates Foundation, The US Department of defense, Alexander Von Humboldt, and others. We also developed novel infectious disease diagnostics technologies that are being commercialized by partners, while ACEGID receives Royalties.

Our revenue generations through service deliveries consist of making reagents for molecular biology and genomics research as well as performing samples and data analysis for individual researchers, institutions or companies.

We are also generating resources through paid short-term trainings and payments of bench fees.

Overview

Research grant has been the major source of revenue generation for ACEGID, basically because the field of genomics is still relatively new to Africa. Thus to carry out any research,

training, workshops etc **in the field of genomics there is a need for huge sum of funds to purchase equipment, reagents and consumables.**

Research grants: Lessons learned

Strategy and Organization

An attractive cause (infectious diseases)
Finding means adjusted to objectives
Market analysis based strategy (need of an African genomics platform)
Targeting adequate Grant Funds
Planning ahead series of grants to ensure regular resources and to mitigate risks

Building up Trust

Intellectual quality of grant applications
Quality of grant budget assessment
Grant track record and grant management system
Account statement and expenditure reports
Delivery (a rapid diagnostic kit, publications, financial and project reports)

At ACEGID, we have put together proposals to the NIH through the H3Africa initiative and NIAID. The revenue generated is currently being used to support our research components. The total funds received from the H3Africa and NIAID is over \$1.5 million. In addition to the H3Africa Initiative grant, ACEGID also generated funds from the Walter Reed Army Institute of Research (WRAIR), United States through the joint West African Research group (JWARG). The JWARG research grant is able to generate over \$750,000 annually in cash, while we have some other kind donations in the form of equipment and vehicles to enhance monitoring and evaluation. Both grants have been able **to support the upgrading of the laboratories** in terms of equipment for the

various genomics research activities and training at the center. The research carried out in the center **has led to the development of product such as rapid diagnostic kits (RDTs) for diagnosis of Lassa virus and Ebola virus.** This was done in collaboration with Corgenix, USA. The kits developed will generate lifelong royalty both to the center and university as long as the kit is being sold. Although at the moment the permit received from the WHO and US FDA for the RDTs is for emergency use, therefore the royalty generated is limited, it is however hoped to increase greatly once it is licensed for routine test. Grant support also came in the form of kind and donations. ACEGID received kind donation of project vehicle to facilitate the research activities especially as the research involves field trips etc. In addition some agencies have volunteered to build laboratories to enhance the research activities.

Preparation phase

The leadership of ACEGID has a good track record in grant attraction and is a beneficiary of several grants before the ACE project. Knowing that the major goal of the World Bank for the ACEs is for developing capacity in three thematic areas; Health, Agriculture and STEM, it was obvious that we needed more funds to sustain the center for the research goal.

The track record of the leadership of ACEGID in infectious diseases and the involvement of ACEGID in the early diagnosis and containment of Ebola virus disease as well as the infrastructure on ground were the major attractions for Walter Reed Army Institute and Research (WRAIR), USA to the center, and that interaction led to the birth of JWARG project. **Thus, track record, innovation, infrastructure and grant management system of the parties involved in the proposal among other factors are key to successful grant applications.**

The revenue generation strategy through services was born out of the fact that **that there were no facilities available in most West African countries for production of molecular Biology and genomics reagents and analysis of samples.** Most African Scientists procured reagents outside Africa or sent their samples outside Africa for analysis. These observations formed the basis of our strategy and we used the opportunity to invest

in acquiring equipment for reagents production and samples analysis.

“Commercial” phase

The vision and the drive **to tackle the challenges of infectious diseases** are the major driving force for putting up a proposal to support research on infectious diseases using the cutting edge genomics tools. Generating revenue through grant proposal does not require any commercial activities but rather **intellectual capability to put information together in response to specific request for applications** with a specific focus or theme.

We used resources from the World Bank, NIH and NIAID projects to acquire equipment for products development and samples analysis.

Running the revenue generation activity

The revenue generated through research grants have contributed a great deal to the research focus of ACEGID. Since our revenue generation activities are mainly through research grants, we strived to publish some major research articles that have become reference papers in the field of infectious diseases. This is because **funders track the grant achievements through publications and good grant management system,** which is present in our university system. We also **regularly produce our technical, financial reports, account statement and expenditures, which has continued to be satisfactory to the funders.** Some disappointment and delays have been experienced especially due to budget cut thus making us cut down on some of the research activities but since we have make the grant writing our model for sustainability of the center, other funds were generated to help cover such areas.

We have had delays in delivery of equipment and reagents. We also have additional issues about payments after delivery of services.

Business aspects

Our **budget for grants** are often based on various activities proposed in the application. A number of factors considered are cost of equipment, reagents and consumables, cost for publications, travel costs to attend conferences, facility and administration, salaries etc.

Conclusion

Research grants attraction, product development and service deliveries are ways of generating revenues for sustainability. However there is a need **to plan ahead by having ideas that can be developed once there is a request for application**. In addition it important **to have established good infrastructure upon which one leverages**.

Delivering on goals of grants is very important to the success, as they facilitate more grants access and opportunities.

The major risk in grant writing is that one does not get funded all the time, and thus it is very important **to often submit multiple applications**. It is also advisable to **diversify revenue generation** activities