

**Category**

Best Incubator, Accelerator, Equity

**Program/Fund Name**

Center for Integrated Global Biomedical Sciences

**Corporate Name**

University at Buffalo, State University of New York

**Date Of Creation**

2016-06-01

**Indications (if applicable)**

NA

**Therapeutic Categories (if applicable)**

NA

**History of the development of the fund / Incubators**

Background: The Center for Integrated Global Biomedical Sciences (CIGBS), at the University at Buffalo (UB), State University of New York (SUNY) was established in October 2015 with a mission to develop linkages with international collaborators to foster novel approaches that would bridge existing drug development and therapeutics research, and capacity building programs at the University at Buffalo and grow these efforts into more comprehensive partnerships. These new partnerships were, in turn, intended to successfully compete for funding sources and prioritize infrastructure and capacity building. The groundwork that we sought to build during Phase 1 of the Center for Integrated Global Biomedical Sciences program has been extraordinarily successful. The items below indicate the key developments that have occurred during this period and form the rationale for Phase 2 and continued growth of global health capacity building and research projects.

**Focus**

Since the launch of the Center for Integrated Global Biomedical Sciences, the focus and key milestones achieved include:

- Establishing the Center for Integrated Global Biomedical Sciences on the Buffalo Niagara Medical Campus and engaging numerous regional partners to seek external funding for Phase 1 projects.
- Led the development of the SUNY Global Health Institute, in collaboration with the SUNY Chancellor's office, and with an organization that includes co-directorship by the Center for Integrated Global Biomedical Sciences at the University at Buffalo and the Special Treatment and Research (STAR) Program at Downstate Health Sciences Center, SUNY.
- Fostered the participation of faculty from the SUNY Global Health Institute to participate in initiatives launched by the University of the West Indies (UWI)-SUNY Center for Leadership and Sustainable Development.
- Worked with the UWI Faculty of Medical Sciences, Mona Campus in Kingston, Jamaica, to create the

SUNY-UWI Health Research Consortium and create a task force that led the implementation of the UWI Global Health Institute with headquarters at the Western Jamaica Mona Campus to be a hub that includes all UWI medical campuses.

- With the UWI Sustainable Development Goals graduate program, create a multidisciplinary faculty that will be competitive for funding and create incubator activity in the intersecting areas of Climate Change, Alternative Energy, Agricultural Innovation and Global Health.
- UB Center for Integrated Global Biomedical Sciences has been identified as the lead international university partner with the University of Zimbabwe in the development of Health Galaxy Park.
- With the UWI and UZ Schools of Management, expand the academic-business collaborations that have led to the current SUNY-UWI and SUNY-UZ business leadership program and contribute to the sustainable development goals of the Caribbean.

### **How do you address your portfolio needs**

CIGBS portfolio needs and outcome metrics have been developed and reflect the tiered levels of training and capacity building that are used. Each of the programs required outcome metrics at the level of the individual that led up to programmatic outcomes as reflected by external funding, peer reviewed publication and regional acceptance. The primary impact/metrics that CIGBS utilizes to gauge success of its programs are outcomes that could only be evident if the intermediate capacity building efforts were not attained. Examples are provided below in key areas.

### **Impact / metrics to measure success**

CIGBS and The University of the West Indies

- SUNY implemented a collaboration agreement with the University of the West Indies leading to the SUNY-UWI Center for Leadership and Sustainable Development
  - o The SUNY Global Health Institute was selected to implement a co-chaired, SUNY-UWI Health Research Task Force to identify interested faculty and health research priorities. The chairs from SUNY (G. Morse) and UWI (J Lindo) have presented the progress of this task force at SUNY-UWI meetings, UB conferences and the Consortium for Universities in Global Health.
- The United Nations 2030 Sustainable Development Goals were released with an identified emphasis on the “Evidence-Policy” interface.
  - o For developing island nations, an emphasis on informatics networks has been suggested as a requirement for achieving the 2030 Sustainable Development Goals.
  - o The evidence-policy linkage creates a bridge from research outcomes to policy implementation that impacts economic development and workforce development.

CIGBS and the University of Zimbabwe

- The government transition in Zimbabwe has identified the creation of an innovation hub for health system development and biomedical research to be built in Harare, Zimbabwe.
- This project is now named the “Health Galaxy Park” innovation hub and Professor Maponga, the co-Project Director for the UB-UZ Fogarty International Center HIV Research Training Program.
- In March 2018, Harry Thomas, US Ambassador to Zimbabwe, formally identified the UB Center for Integrated Global Biomedical Sciences as a qualified implementation partner for USAID, CDC and PEPFAR programs in Zimbabwe.(letter attached)
- UB Center for Integrated Global Biomedical Sciences has been identified as the lead international university partner with the University of Zimbabwe in the development of Health Galaxy Park.
- UB Center for Integrated Global Biomedical Sciences and the UB Institute for Lasers, Photonics and Biophotonics with the University of Zimbabwe established the Zimbabwe International Nanotechnology Center.

CIGBS and the University of the Western Cape, Cape Town, South Africa

- The Center for Integrated Global Biomedical Sciences is the primary mentor for a grantee who has received a 5-year Emerging Global Health Leader from the NIH Fogarty International Center.
- This award was received by a former University of Zimbabwe Fogarty fellow and the mentoring team includes faculty from three South African universities including the University of Cape Town, Stellenbosch University and the University of the Western Cape.
- The scholar and the mentoring team are developing research applications that will include UB's Center for Integrated Global Biomedical Center.

CIGBS and Global Diabetes Implementation Project

- UB Center for Integrated Global Biomedical Sciences has established research collaborations with the Peter Sheehan Diabetes Care Foundation and the Buffalo Niagara Diabetes Alliance [both 501(c)(3)]
- A diabetes project is underway at the Kingston City Hospital in Jamaica that includes Buffalo businesses BAK USA and Frontier Science Technology and Research Foundation.
- A pilot project of diabetic patients on traditional Chinese medicine use was completed in Chinatown in New York City in collaboration with Beth Israel Mount Sinai hospital, the Peter Sheehan Diabetes care Foundation and the Chinatown Business Investment District leadership.
- A recent unrestricted education grant was received by Well Cell Global to support CIGBS programs in community diabetes centers with our international partners.

CIGBS Introduces a Global Cannabinoid Sciences Program

- Unrestricted donations from three medical marijuana companies to develop population-based, implementation paradigms to evaluate efficacy, tolerance, pharmacokinetics and drug interactions with medicinal cannabinoids.
- Development plans for a New York State Cannabinoid Safety and Pharmacology Program that will create a network of patients, providers and dispensaries with a patient-centered data collection infrastructure linked to the Center for Computational Research at UB.
- Global Network for Development of Cannabinoids and Complimentary Medicines in Nanomedicine Formulations

### **Why your model is innovative, and/or how it will improve the human condition?**

CIGBS employs a highly innovative model that addresses the challenges of linking innovative research with strategies for sustainable development. This approach provides a realistic approach to attain the UN Sustainable Development Goals as outlined on the website (<https://sdgs.un.org/goals>). This innovative approach is now providing a foundation for two important global health projects. In Harare, Zimbabwe, CIGBS programs are creating new business opportunities in Health Galaxy Park, a 40-hectare complex that will become a health care innovation and biomedical research hub. A recent ribbon cutting ceremony introduced the Health Infrastructure Technology and Skills Coordination Center, an incubator for the interaction of academic capacity building and business development on the designated Health Economic Development Zone.

A second innovation example is the implementation of the State University of New York (SUNY) – University of the West Indies (UWI) Health Research Consortium. Working with the UWI Faculty of Medical Sciences, Mona Campus in Kingston, Jamaica, the SUNY-UWI Health Research Consortium was created and subsequently task force to lead the implementation of the UWI Global Health Institute with headquarters at the Western Jamaica Mona Campus to be a hub that includes all UWI medical campuses in the Caribbean region.

### **Please provide appropriate references (Examples / Case Study)**

Maponga CC, Mhazo AT, Morse GD. A framework for sustainable capacity-building for collaborative

North-South translational health research and training in a resource-constrained setting. *Health Res Policy Syst.* 2023 Mar 27;21(1):24. doi: 10.1186/s12961-023-00972-0. PMID: 36973698

Mazambara F, Chagwena D, Mudzviti T, Sithole S, Monera-Penduka T, Maponga CC, Morse GD. Utility of HIV support groups in advancing implementation research in resource-limited settings: experiences from an urban-setting HIV support group in Zimbabwe. *AIDS Res Ther.* 2022 Feb 14;19(1):7. doi: 10.1186/s12981-022-00431-w. PMID: 35164769.

Maponga CC, Monera-Penduka TG, Mtisi TJ, DiFrancesco R, Makita-Chingombe F, Mazambara F, Tooley K, Mudzviti T, Morse GD. Two decades (1998 to 2018) of collaborative human immunodeficiency virus clinical pharmacology capacity building in a resource constrained setting. *Cost Eff Resour Alloc.* 2021 Nov 10;19(1):73. doi: 10.1186/s12962-021-00327-y. PMID: 34758831.

Zhou DT, Maponga CC, Madhombiro M, Dube A, Mano R, Nyamhunga A, Machingura I, Manasa J, Hakim J, Chirenje ZM, Mudzviti T, Nhachi C, Ma Q, DiFrancesco R, Masanganise R, Morse GD. Mentored postdoctoral training in Zimbabwe: A report on a successful collaborative effort. *J Public Health Afr.* 2020 Mar 20;10(2):1081. doi: 10.4081/jphia.2019.1081. eCollection 2019 Dec 31. PMID: 32257079