THE CARIBBEAN ACADEMY OF SCIENCES (CAS)
REGIONAL EXECUTIVE
2024 GRADUATE STUDENT WEBINAR SERIES

🕓 **Date/Time:** Jun 7th, 2024, 2:00 PM America/Port_of_Spain.

🔗**Platform:** Zoom (Virtual Only)

🔗**Webinar Registration Link here:**
https://docs.google.com/forms/d/e/1FAIpQLSfg2edXMFEVpn_3aEPxExlwKm57PPxZ6p3pd9m-fMCgdqzBdg/viewform?usp=sharing

🔗**Zoom Credentials:**
https://sta-uwi-edu.zoom.us/j/96819455523?pwd=ZXNLN3IwQUhtVTVNWEd5OHpSUWgwUT09

🔗**Meeting ID:** 968 1945 5523

🔗**Passcode:** 892429

PROGRAMME

2:00 - 2:15 pm - Opening Remarks
Prof. Mark Wuddivira (President, CAS Regional Executive)

2:16 - 2:45 am - Graduate Student Presentation:
The Extraction of Secondary Metabolites to Reverse and Cure Type 2 Diabetes.
Mr. Timothy Allen
Institute of Sustainable Biotechnology (ISBiot), Inter-American University of Puerto Rico - Barranquitas Campus, Puerto Rico.

2:46 - 3:15 pm - Discussion / Question & Answer

3:16 - 3:30 pm - Closing Remarks

THE CARIBBEAN ACADEMY OF SCIENCES (CAS) REGIONAL EXECUTIVE

Graduate Student Webinar Series

The Extraction of Secondary Metabolites to Reverse and Cure Type 2 Diabetes.

TOPIC:
CAS GRADUATE STUDENT WEBINAR SERIES-
MR. TIMOTHY ALLEN.

DAY/TIME:
JUNE 7, 2024, 2:16 PM

HTTPS://STA-UWI-EDU.ZOOM.US/J/99007121279?PWD=EI9KBG9TVW1EDFPOS0PYSWDYT0ZQQT09

Presenter:
Timothy Allen

Institute of Sustainable Biotechnology (ISBiot), Inter-American University of Puerto Rico - Barranquitas Campus, Puerto Rico.

THE EXTRACTION OF SECONDARY METABOLITES TO REVERSE AND CURE TYPE 2 DIABETES.

MR. TIMOTHY ALLEN

INSTITUTE OF SUSTAINABLE BIOTECHNOLOGY (ISBIOT), INTER-AMERICAN UNIVERSITY OF PUERTO RICO - BARRANQUITAS CAMPUS, PUERTO RICO.

Abstract:
Insulin is an essential natural hormone that the pancreas synthesizes to allow the human body to utilize carbohydrates like glucose for energy. The metabolic disorder that severely affects the activity of this hormone is type 2 diabetes also known as type 2 diabetes mellitus. Type 2 diabetes (T2D) contributes to resistance in insulin activity by not properly regulating it, so abundant amounts of sugar end up circulating in the blood. This leads to hyperglycemia, chronic kidney disease and other health conditions due to this metabolic disorder. Overtime, there've been improvements in research for bioactive compounds extract from flora that hold potent medical properties to possibly cure this metabolic disorder. The secondary metabolites of interest would be focused on species in the family Hypoxidaceae or Rutaceae. These two families of plants are native to South Africa. An example of this is the species Aegle Marmelos commonly known as Indian Bael which has antidiabetic properties for reducing blood sugar. Therefore, proposed methodologies would be plant micropropagation to eventually obtain enough plants. For the separation of compounds procedure, Soxhlet distillation will be performed, using solvents like acetone-hexane through dissolving the mixture in a soluble solvent. Finally, a biochemistry profile for the bioactive compound of interest with bioassays. For further identification of the secondary metabolites, the bioassays being used would be thin-layered chromatography (TLC) and mass spectrometry. The secondary metabolites will be potentially tested on insulin resistant cells and nephron tissue to see if there's an increase in kidney activity. Discovery of new sources for medicine may lead to alleviating T2D, which will offer the development of accessible pharmaceutical drugs to assist with type 2 diabetics worldwide.
Keywords: Type 2 Diabetes, Metabolic Disorders, Secondary Metabolites, Hypoxidaceae, Rutaceae, Plant Micropropagation

Biography:

Mr. Timothy Allen

Mr. Timothy Allen's academic journey has been marked by a strong dedication to the field of biotechnology and a commitment to making meaningful contributions to scientific research. His background in Biology and Applied Biology (Translational Life Science Technology) which he pursued at the Community College of Baltimore and the University of Maryland, has provided him with a solid foundation in the life sciences, which he has further developed through his work in bacterial and cancer research. His interest in ethnobotany reflects his desire to explore the intersection of traditional knowledge and modern scientific advancements, seeking innovative solutions to complex biological challenges. With his current pursuit of a PhD in International Biotechnology at the Inter-American University of Puerto Rico, Mr Allen is poised to continue pushing the boundaries of scientific discovery and making a positive impact on global health and environmental sustainability.