



**Caribbean Academy of Sciences 2025  
Bridging Science, Technology and Society:  
Advancing the SDGs through Research, Innovation, and Action**

**Venue: School for Graduate Studies and Research, UWI Cave Hill Campus**

**Thursday November 27**

**8: 30 am – 9:00 am**

**Registration**

**9:00 am – 2:00 pm**

**CAS Executive Retreat**

**2:30 – 4:00**

**Registration**

**4:00 pm – 6:00 pm**

**CAS Biennial General Meeting**

**7:00 – 9:00 pm**

**Opening Ceremony and Welcome Reception**

## POSTER PRESENTATIONS

Please note there are **two (2)** sessions for **all** poster presenters

Friday November 28: 3:10 – 3:40

Saturday November 29: 11:00 – 11:30

CAS25 083 **Linton Arneaud, Martin Weekes**

Assessment of Barbados' Endemic Biota: Status, Threats, and Priorities

CAS25 029 **Andrea Goldson-Barnaby**

Hypoglycin A content and proximate analysis of *Blighia sapida* pods

CAS25 046 **Albertha Joseph-Alexander, Celeste Chariandy**

Closing the Gap: Science Communication for the SDGs

CAS25 057 **De-Mar Browne, Tamaira Rowe, Nandi Yard, Nikolai Holder**

Anaerobic Digestion Technology: The Key to a Sustainable Caribbean

CAS25 065 **Hugh Atherley, Grahame Niles**

Remote Sensing for Analysis of Land Use Changes and Sustainable Development in Small Island Developing States

CAS25 070 **Kanzi Scott, Hugh Atherley**

Urban Heat and Humidity: Exploring the Urban Heat Island Effect through Relative Humidity Patterns in Rural and Urban Areas in Barbados

CAS25 063 **Anthony Chadee, Kit Fai Pun**

Water Utility Management Using Artificial Intelligence for Small Island Developing States (SIDS)

CAS25 020 **Jevon Yearwood, Isabelle Gouirand**

Identifying the spatial temporal variability of rivers in Jamaica

CAS25 048 **Joel Persaud**

Investigation of Antimicrobial Properties, Phytochemical Composition, Preliminary Spectroscopic Characterisation and Toxicity of Bulletwood (*Manilkara bidentata*) and Awara (*Astrocaryum vulgare*) Plant Extracts

CAS25 042 **Reshan Ramjattan**

Hierarchical Clustering of Gravitationally Lensed Quasars

# Caribbean Academy of Sciences Biennial Conference 2025

## PROGRAMME SCHEDULE

### DAY 1 SESSIONS Friday November 28

#### Registration

8:30 – 9:00

#### Morning Plenary – Professor Raymond Jagessar (introduced by Prof. Angela Alleyne)

Antimicrobial activity of *Apium graveolens* and *L. sativa* against selective pathogens: towards antibiotic resistance

9:00 – 9:30

Lecture Theatre

#### Afternoon Plenary – Professor Dudley Shallcross (introduced by Dr. Sonia Peter)

Digital Innovation for Education

1:15 – 1:45

Lecture Theatre

#### Poster Session

3:10 – 3:40

#### Rooms

GRLT - Graduate Lecture Theatre

GR1

GR2

GR4

GR5

**Oral Presentations – 20 minutes including Q&A**

**Innovative Research for Sustainable and Resilient Futures Sessions**

**9:40 - 10:40**

**Session 1A - GRLT Chair: Prof. Angela Alleyne**

**CAS25 004 – Che John**

From Waste to Value: Development of Edible Films from Chenet Shell (*Melicoccus bijugatus*) Pectin

**CAS25 006 – Akeem Mohammed**

Calcium Alginate Bioplastics from *Sargassum* for a Sustainable Future: Advancing Circular Economy Solutions in the Caribbean

**CAS25 007 – Gomathinayagam Subramanian**

Studies on biocontrol potential of *Trichoderma harzianum* against *Ralstonia solanacearum*

**Oral Presentations – 20 minutes including Q&A**

**Innovative Research for Sustainable and Resilient Futures Sessions**

**9:40 - 10:40**

**Session 1B - GR1 Chair: Dr. Cilla Pemberton**

**CAS25 009 – Usha Dalloo**

Microplastic Pollution in Tilapia (*Oreochromis mossambicus*), Water, and Sediments from a Fish farm and Trench at No. 19 Road, Guyana.

**CAS25 019 – David Couvin**

Strengthening health resilience, monitoring, and FAIR management of biological data in Guadeloupe

**CAS25 022 – Bissessar Persaud**

Molecular Insights into Salinity Tolerance in Rice Genotypes (*Oryza sativa* L.): A Comprehensive Review with a Focus on Guyana's Role in Developing Salt-Tolerant Varieties

**Session 1C GR2 Chair: Prof. Edwin Ekwue**

**CAS25 026 – Sarah Balkissoon**

Energy Forecasting and Energy Poverty using Machine Learning Techniques for regions within the Caribbean

CAS25 027 – **Sonia Peter**

Orbital Trap Mass Spectrometry Combined with Molecular Modelling as a Fast Track for Drug Discovery within the Caribbean Hotspot of Molecular Endemism

CAS25 044 - **Priscilla Sahadeo**

Thin-layer modelling of greenhouse drying for cocoa beans

**Session 1D GR4 Chair: Dr. Andrea Sealy**

CAS25 028 – **Loïc Louison, Abdennebi Omrane**

A Mathematical Model for Tropical Forest Dynamics Under Demographic Pressure

CAS25 032 – **Zaffir Mohammed**

Expansive Soil Hazards and Sustainable Development: A Framework for Infrastructure Resilience

CAS25 033 – **Hanna-May Malahel**

From Land to Reef: Detecting Nutrient Pollution Caged using Macroalgae in Guadeloupe (Lesser Antilles)

**Session 1E GR5 Chair: Dr. Jeffrey Smith**

CAS25 035- **Lisa Benjamin**

Antibiotic resistance patterns of *E. coli* isolated from run-off water in a small island state impacted by increased intense rainfall events over 3 years

CAS25 061 – **Desiree Koonj Beharry**

Synthesis of Activated Carbon from Cocoa Plantation Waste

**10:40 – 10:55**

**BREAK**

**Oral Presentations – 20 minutes including Q&A**

**Innovative Research for Sustainable and Resilient Futures Sessions**

**11:00 – 12:00**

**Session 1F GR1 Chair: Dr. Cilla Pemberton**

CAS 041 – **Sasha Ramkhelawan**

Associations between clinical variables and cardiovascular disease in Trinidad and Tobago

CAS 053 – **Sushmita Kalika-Singh**

Optimising fungicide application strategies for managing *Rhizotonia solani* on sugar beet in Red River Valley

**Session 1G GR2 Chair: Prof. Edwin Ekwue**

CAS25 054 – **Leroy Quildon**

A Study of Cluster Initiatives on SME Competitiveness in the Export of Maritime Services: Some Findings in the Caribbean

CAS25 056 – **Quincy A. Edwards**

Emerging Contaminants in Surface Water and Wastewater in Barbados, West Indies

CAS25 081 – **Prashant Birbal**

The Performance of a Physical Scaled Model of a Low-Head Seawater Pumped Hydro Storage System

**Session 1H GR4 Chair: Dr. Sonia Peter**

CAS25 059 – **Leila Nouville**

From agro-waste to catalysis: transforming cassava by products into functional materials for environmental remediation

CAS25 079 - **Srinivasa Popuri**

Developing a Circular Economy Model for the Utilization of *Sargassum* Seaweed in the Caribbean

**Oral Presentations – 20 minutes including Q&A**

**Science, Policy and Social Impact**

**11:00 – 12:00**

**Session 2A GR5 Chair: Dr. Jeffrey Smith**

CAS23 034 – **Diandre Stephen**

Production and Characterization of Biochar from Broiler Poultry Litter by Slow Pyrolysis

CAS25 051 – **Reynold Stone**

Is Trinidad and Tobago Warming at Two and a Half Times the Global Average?

CAS25 060 – **Brandon Murphy**

Linking Livelihood Resilience and Climate-Smart Agriculture Adoption: Evidence from Farmers in Trinidad and Tobago

**12:00 – 1:00**

**LUNCH**

**Oral Presentations – 20 minutes including Q&A**

**Youth, Education and Scientific Empowerment**

**1:50 - 2:50**

**Session 3A GRLT Chair: Dr. Sonia Peter**

CAS25 011 – **Dudley Shallcross**

Solving the Maths Problem in Science – Insights using Smart Worksheets in the UK and South Africa

CAS25 024 – **Nayanti Rambarran**

Pedagogical Challenges in Implementing Place-Based Environmental Education in Trinidad and Tobago: Mangrove Ecosystem Conservation and Sustainable Development Goals.

CAS25 039 – **Manuel Lollia**

Scientific Communication

**Session 3B GR1 Chair: Dr. Andrea Sealy**

CAS25 043 – **Kim Whitehall**

Towards integrating climate science empowerment into college and university science Courses

CAS25 072 – **Lisa Benjamin**

Building Scientific Capacity for Sustainable Aquaculture in Caribbean Tertiary Institutions

**Session 3C GR2 Chair: Dr. Leah Garner O'Neale**

CAS25 064 – **Maria Butcher**

Redesigning Chemistry Laboratories for Meaningful Learning at the Tertiary Level: A Barbadian Intervention

CAS25 047 – **Colin Depradine**

Expanding Accessibility for Computer Programming

**Oral Presentations – 20 minutes including Q&A**

**Regional Solutions to Global Challenges**

**1:50 – 2:50**

**Session 4A GR4 Chair: Prof. David Yawson**

CAS25 001 – **Tariq Jagnarine**

The Role of Recency Testing and Linkage to Care in Enhancing Viral Suppression in Guyana

CAS25 003 – **Thomas Plocoste**

CARIAN: Building a Caribbean Atmospheric Network to Advance SDG-Driven Research, Innovation, and Action

CAS25 008 – **Lee Leon**

From Waste to Pavement: Runoff Contamination Risks

**Session 4B GR5 Chair: Dr. Kimberley King**

CAS25 012 – **Brij Bhushan Tewari**

Profiling the Pharmacological Properties of *Prunus dulcis*

CAS25 014 – **Marco-Dean Brown**

Co-occurrence of Six Alien Terrestrial Flatworms in an Urban-Academic Ecosystem in Jamaica: Ecological, Economic and Public Health Implications

**2:50 – 3:05**

**BREAK**

**Oral Presentations – 20 minutes including Q&A**

**Regional Solutions to Global Challenges**

**3:45 – 4:55**

**Session 4C GRLT Chair: Dr. Sonia Peter**

CAS25 016 – **Raymond Jagessar**

Climate Smart Agriculture Practices in Guyana

CAS25 018 – **Alain Pietrus**

Obesity and complications

CAS25 021 – **Nicole Herbert**

The Caribaea Initiative – Building Capacity in the field of Biodiversity Conservation

**Session 4D GR1 Chair: Dr. Andrea Sealy**

**CAS25 076 – Adria Leben**

The Feasibility of a Smoke Forecast Model in the Caribbean: A Focus on Barbados

**CAS25 077 – Nathan Collymore**

An Investigation into the Relationship Between Saharan Dust and Weather Elements

**CAS25 036 – Shanice Martin**

Resilient Communities, Resilient Heritage: Museums, Climate Change and Social Sustainability in a Changing World

**Session 4E GR2 Chair: Dr. Leah Garner O’Neale**

**CAS25 049 – Josiah Morean**

Investigating the prevalence, attitudes, knowledge, and impact of AI tools among physicians in Trinidad and Tobago: A pilot study of physicians’ perspectives

**CAS25 050 – Shivanie Betty Ramcharitar**

Getting the Community Ready for Climate Change: A Scenario Planning Framework for Climate Change Education for Resilient Coastal Communities

**Oral Presentations – 20 minutes including Q&A**

**Regional Solutions to Global Challenges**

**3:45 – 4:55**

**Session 4F GR4 Chair: Prof. David Yawson**

**CAS25 058 – Bhanumattee Ramdhanie**

The Extraction of Cellulose from *Bambusa vulgaris* (Bamboo) Biowaste for the Synthesis of Useful Products for Environmental Purposes

**CAS25 069 – Cilla Pemberton**

A Framework for Assessing Household Innovation in Selected Regions

**Session 4G GR5 Chair: Dr. Kimberley King**

**CAS25 074 – Nathaniel Cassim**

Sustainable Roof Installation: Modelling the Effects of Recyclable Materials on Energy Efficiency and Comfort

**CAS25 075 – Shem Robinson**

Convective Organization in the Tropical Atlantic using Two Precipitation Datasets

## **PROGRAMME SCHEDULE**

### **DAY 2 SESSIONS Saturday November 29**

#### **Morning Plenary – Professor Angela Alleyne (introduced by Dr. Leah Garner O’Neale)**

Stress Tolerant Genes in a Traditional Sweet Potato Variety C104 from Barbados

9:00 – 9:30

Lecture Theatre

#### **Poster Session**

11:00 – 11:30

#### **Oral Presentations – 20 minutes including Q&A**

#### **Innovative Research for Sustainable and Resilient Futures Sessions**

**9:40 - 10:40**

#### **Session 1J GRLT Chair: Dr. Leah Garner O’Neale**

**CAS25 023 – Farrah Mathura**

Waterproof Cutin Chitosan Composite Coated Paper Packaging from Leaf Biomass

**CAS25 038 – Ariel Coolman**

Field Based Crop modelling of Sweet Potato (*Ipomoea batatas* Lam.) under Three Water Regimes and Projected Climate Scenarios in New Zealand

**CAS25 062 – Carol Lue**

Empowering Women in the Caribbean’s Energy Transition: Designing a Cooperative Model for Female Renewable Energy Entrepreneurs

#### **Session 1K GR1 Chair: Dr. Lisa Benjamin**

**CAS 025 071 - Kent Thomas**

Two Islands, Two Futures: Contrasting LS Factor-Based Erosion Susceptibility in the Eastern Caribbean Region

**CAS25 082 – Albertha Joseph-Alexander**

Comparative Assessment of Yield, Pod and Seed Quality Characteristics in Selected Dwarf Vegetable Pigeonpea (*Cajanus Cajan* (L.) Millsp.)

**CAS 088 - Nicole Ramlachan**

Strengthening Healthcare Technology Policy & Procedure in the English-Speaking Caribbean SIDS: Advancing Climate-Resilient Health Outcomes through the SDGs

**Oral Presentations – 20 minutes including Q&A**  
**Regional Solutions to Global Challenges**  
**9:40 – 11:00**

**Session 4H GR2 Chair: Dr. Kimberley King**

**CAS25 030 – Tracy Marshall**

Assessing Risk Perception, Safety Behaviours and Types of Knowledge in a Small Island  
Developing State in the Caribbean: Contributing Factors to Household Actions and Inaction

**CAS25 080 – Brandon Murphy**

A Stakeholder Driven Framework for Prioritizing Farm Climate Adaptation Practices in Trinidad  
and Tobago

**CAS25 087 – Shanice Whitehall**

The Role of Ocean Modelling in the Analysis of Hydrometeorological Hazards in  
the Eastern Caribbean

**10:40 – 11:15**

**BREAK**

**Industry-Academia-Government Partnerships for Innovation**  
**Oral Presentations and Panel Discussion**

**Oral Presentations – 15 minutes including Q&A**  
**11:15 – 12:15**

**Session 5 GRLT Chair: Prof. David Yawson**

**CAS25 002 – Fradian Murray**

Fast-Tracking Climate-Smart Cassava Research through Multi-Stakeholder Partnerships:  
Insights from Project Grow in Jamaica

**CAS25 052 – Reynold Stone**

Strengthening the Use of Statistics in Guyanese Rice Research

**CAS25 055 – Aisha Trimmingham**

Management of Waste Cooking Oil in the Kingston Metropolitan Area, Jamaica:  
Steps towards creating a Circular Economy

**Industry-Academia-Government Panel Discussion (Moderator: Prof. David Yawson)**

**12:15 – 1:00**

Invited Panelists from Industry, Academia and Government will provide feedback on the relevance of the session to the three sectors and how these relationships can be strengthened. The audience will also be invited to field questions.

**1:00 – 2:30        LUNCH**

**2:30 – 3:30 CLOSING CEREMONY**