THE CARIBBEAN ACADEMY OF SCIENCES

NEWSLETTER

MAY 2024 - VOLUME 7 ISSUE 1

NEW SMALL ISLAND DEVELOPING STATES (SIDS) LIAISON

CAS 23RD BIENNIAL CONFERENCE

INTERNATIONAL DAY OF WOMEN AND GIRLS IN SCIENCE

INTERNATIONAL UNION OF PURE AND APPLIED CHEMISTRY (IUPAC) GLOBAL WOMEN'S BREAKFAST (GWB)

MEMORIAM TRIBUTE



PHOTO: DANIEL TOROBEKOV

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THE CARIBBEAN ACADEMY OF SCIENCES

NEWSLETTER

MAY 2024: VOLUME 7 ISSUE 1

ADDRESS

Room 1 East, Block 13, Faculty of Engineering,
The University of the West Indies (UWI), St. Augustine, Trinidad and Tobago.

CONTACT INFORMATION

Email: casexecutive2023@gmail.com / caribbeanacademyofsciences.cas@gmail.com

PRESIDENT OF CAS REGIONAL EXECUTIVE

Prof. Mark Wuddivira

EDITOR

Dr. Roshnie A. Doon

CAS REGIONAL EXECUTIVE 2023-2025

- Prof. Mark Wuddivira (President)
- Dr. Roshnie A. Doon (Secretary)
- Dr. Jeffrey Smith (Treasurer)
- Dr. Marvadeen Singh-Wilmot (Public Relations Officer)
- Prof. Raymond Jagessar (Foreign Secretary)

CONTRIBUTORS

- Prof. Neela Badrie
- Prof. Raymond Jagessar
- Prof. Kit Fai Pun
- Prof. Mark Wuddivira
- Dr. Lilliam Margarita Alvarez Diaz
- Dr. Anika Brown
- Dr. Roshnie A. Doon
- Dr. Dawn Fox
- Dr. Albertha Joseph-Alexander
- Dr. Aurora Maria Perez Martinez
- Dr. Elizabeth Rodriguez Querts



PHOTO: DANIEL TOROBEKOV

LETTER FROM OUR **PRESIDENT**

Welcome from the President!

It is with great pleasure and honor that I extend a warm welcome to each of you to our latest newsletter issue. As we embark on this journey together, I am filled with a profound sense of optimism and excitement for the future of science in our region.

The Caribbean Academy of Sciences stands as a beacon of knowledge, innovation, and collaboration. Our collective dedication to advancing scientific research, education, and outreach underscores our commitment to addressing the critical challenges facing our communities.

In this issue, you will find a wealth of insightful articles, groundbreaking research, and inspiring stories from across the Caribbean scientific community. Our members continue to push the boundaries of knowledge and make meaningful contributions to society.

I would like to take this opportunity to express my heartfelt gratitude to each of you for your unwavering support and dedication to the mission of the Caribbean Academy of Sciences. Together, we have the power to drive positive change and shape a brighter future for generations to come.

I encourage you to explore the pages of this newsletter, engage with your fellow members, and share your own experiences and expertise. Together, we can harness the power of science to create a more prosperous, sustainable, equitable, and resilient Caribbean region.

Thank you for your commitment to excellence, and I look forward to our continued collaboration and success.

Warm regards,
Mark N. Wuddivira, Ph.D.
Professor of Agri-Environmental Soil Physics
President, Caribbean Academy of Sciences (CAS)
Regional Executive (2023-2025)

"...The Caribbean Academy of Sciences stands as a beacon of knowledge, innovation, and collaboration. Our collective dedication to advancing scientific research, education, and outreach underscores our commitment to addressing the critical challenges facing our communities..."

LETTER FROM OUR **EDITOR**

One of the key factors driving the growth of science in the Caribbean is the collaboration between local institutions, governments, and international partners.

In this issue of the Caribbean Academy of Sciences (CAS) Newsletter, we highlight our President Prof. Mark Wuddivira strengthening the ties between the Academies of Sciences in Latin America and the Caribbean (LAC) region at the Global Knowledge Dialogue for Latin America and the Caribbean organized by the International Science Council (ISC) while amplifying the needs of Small Island Developing States (SIDS) in response to problems such as dealing with the aftermath of Climate Change events and encouraging the creation of projects that enhance the sustainable development of SIDS.

Similarly, Dr. Ronald Roopnarine through his role as an expert on the scientific committee of the Integrated Research on Disaster Risk (IRDR) program seeks to improve the Disaster Risk Management and Climate Change Mechanism in SIDS in the Caribbean. The work of Attorney-at-law and microbiologist, Prof. Neela Badrie at the Biosecurity Meeting, in Trieste, Italy, also focused on how the use of Artificial Intelligence (AI) could impact not only biotechnology but also the international collaboration on the Convention of Biological and Toxic Weapons.

The unique biodiversity and ecosystems found in the Caribbean have undoubtedly provided a rich environment for scientific research to take place, in the fields of Climate Change, Energy Models, Engineering, Sustainable Development, and Chronic health conditions in the Caribbean.

Scientists in the region like Prof. Raymond Jagessar, Ms. Verlyn Klass, Dr. Neal Alleyne, Mr. Andy Paul, and Prof. Alain Pietrus through seminars held by the CAS-TT Chapter, as well as the recently concluded CAS 23rd Biennial Conference during 24-25 November 2023, hosted by the CAS-TT Chapter, demonstrates that scientists in the Caribbean region are at the forefront of studying these issues and developing solutions to address them.

"... scientists in the Caribbean region are at the forefront of studying these issues and developing solutions to address them ..."

Women have made significant contributions to the field of science throughout history, yet their achievements have often been overlooked or undervalued. It is crucial to recognize and celebrate the accomplishments of women in science to inspire future generations of female scientists and ensure that their voices are heard and respected in the scientific community.

In this issue, we feature the activities undertaken by the CAS Chapters in Jamaica, and Guyana, as well as the Cuban Academy of Sciences through a series of seminars to celebrate UNESCO's International Day of Women and Girls in Science by highlighting not only the work of distinguished women in Science in the Caribbean region, but to also promote the equality, diversity, and inclusion of women in all STEM fields.

The importance of scientists in the Caribbean region's continued representation in STEM cannot be understated, as our unique perspectives and talents are essential for advancing our understanding of the world around us. Thank you to everyone who has contributed to this issue of the CAS Newsletter. I look forward to your continued support and assistance in the future.

Kind regards,
Dr. Roshnie A. Doon
Editor, Caribbean Academy of Sciences (CAS) Newsletter,
Secretary, Caribbean Academy of Sciences (CAS) Regional Executive (2023-2025)

"... it is crucial to recognize and celebrate the accomplishments of women in science to inspire future generations of female scientists and ensure that their voices are heard and respected in the scientific community ..."

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SPOTLIGHT

CAS-REGIONAL EXECUTIVE

THE NEW CAS REGIONAL EXECUTIVE (2023-2025)

DR. ROSHNIE A. DOON
SECRETARY, CAS REGIONAL EXECUTIVE.

PROF. MARK WUDDIVERA (PRESIDENT)



Professor Mark Wuddivira is the Dean of the Faculty of Food and Agriculture at The University of the West Indies, St. Augustine (UWI), and a Professor of Agri-Environmental Soil Physics.

He is an outstanding agri-environmental researcher and internationally sought-after expert. His research agenda on soil physical management and the sustainable use of humid tropical ecosystems has generated many publications in impactful international journals. He has delivered expert presentations across the globe including in Israel, Germany, Belgium, Mexico, the UK, Peru, Chile, China, the USA, Canada, and several regional territories.

He has made an outstanding contribution to a most comprehensive, excellent research program in a truly interdisciplinary area that combines aspects of plant and soil, providing a strong basis for advancement in agri-environmental research, innovation, and diffusion both nationally and internationally. He is a recipient of the Principal's Research Award 2023 as the Most Outstanding Faculty Researcher.

He holds a Ph.D. in Soil Science and a Graduate Certificate in University Teaching and Learning from The UWI. He also earned an International Graduate Certification in Crop Production from the Hebrew University of Jerusalem, Israel, and is certified in Theology from the Logos International School of Ministry, South Africa.

Professor Wuddivira is the member of the International Science Council's Small Island Developing States Liaison Committee, Fellow and the President of the Caribbean Academy of Sciences (CAS), the Editorial Board Chair of the Tropical Agriculture journal and an Associate Editor of the Journal of Plant Nutrition and Soil Science (Wiley).

He is a steering committee member of the Caribbean WaterNet/CAPNET UNDP, as well as a Director on the Boards of the Cocoa Research Centre, UWI, and the Caribbean Agricultural Research and Development Institute (CARDI).

DR. ROSHNIE A. DOON (SECRETARY)



Dr. Roshnie A. Doon is currently the Secretary of the Caribbean Academy of Science (CAS) Regional Executive. She holds a PhD. in Economic Development Policy, MSc. Economics, and BSc. Economics from the University of the West Indies St. Augustine, Trinidad. She has completed a PhD. Master Class in International Business from the Henley School of Business at the University of Reading, U.K.

She is currently a research affiliate of the Global Labor Organization (GLO), Essen Germany, and an executive committee member of the Caribbean Academy of Sciences Trinidad and Tobago Chapter (CAS-TT). Her academic interests are focused heavily on Applied and Empirical Economics, in the areas of Labour, Gender, and Education Economics. Here she has published on a wide range of areas, which includes Higher Education Instruction, Economic and Social Implications of COVID-19, Migration, Returns to Schooling, Educational Mismatch, STEM Education, Wage Inequality, Gender Wage Gaps, and Economic Development Policy.

Apart from being an academic editor, she has published her research in a wide array of journal and book publications, while sharing her research work through guest lectures, and conference presentations domestically, regionally, and internationally.

DR. JEFFREY SMITH (TREASURER)



Dr. Jeffrey V. Smith has been a member of the Caribbean Academy of Sciences Trinidad and Tobago Chapter (CAS-TT) since 2016 and is the current treasurer of the CAS regional executive. He is a Lecturer in the Department of Chemical Engineering at The University of the West Indies (UWI).

He completed his BSc and MSc degrees in Chemical Engineering at The UWI and the University of Toronto respectively and his PhD in Chemical Engineering at The UWI. His current areas of teaching include Chemical Process Principles, Computer-Aided Engineering and Chemical Reaction Engineering, but he has previously taught in the areas of Separation Processes, Transport Phenomena, Chemical Engineering Thermodynamics, Particle Technology and Biochemical Engineering.

His research interests include Polymer Recycling and Waste Valorisation, both from a Caribbean perspective, as well as Carbon Capture, Utilization, and Storage (CCUS) and the hydrogen economy. He is a Registered Engineer (Board of Engineering, Trinidad and Tobago), a Fellow of The Association of Professional Engineers of Trinidad and Tobago, and also has membership in The Institution of Chemical Engineers.

He has recently developed a passion for hiking, road-running and learning French. His passion for French was developed after he started collaborative research with colleagues from l'Université des Antilles (UA), Guadeloupe. This collaboration started after a meeting at a CAS Biennial General Meeting and Conference.

DR. MARVADEEN SINGH-WILMOT (PUBLIC RELATIONS OFFICER-PRO)



Dr. Marvadeen Singh-Wilmot is Senior Lecturer in Inorganic Chemistry and Associate Dean for Student Experience in the Faculty of Science and Technology at the University of the West Indies, Mona, Jamaica. She leads an active research group in the areas of lanthanide chemistry and metal-organic framework materials.

Singh-Wilmot has a passion for science and is committed to the promotion of science as a tool for development. She uses science to enlighten and delight young people, from preschoolers to postgraduates, and she serves in various capacities as an advocate for science in her country.

PROF. RAYMOND JAGESSAR (FOREIGN SECRETARY)



Prof. Raymond Jagessar obtained his BSc (Distinction) in Chemistry/Biology from the University of Guyana (1992) and his PhD from the UK (1995). He was an Assistant Lecturer at the University of Guyana, from 1991-1992. He held three Post Doctoral Research Fellowships (PDF) at the University of South Carolina, Columbia (USA), Wichita State University, Kansas (USA), and the University of the West Indies during the period, 1996-1999.

He is also accredited with a distinction in DiPEd (higher education) at the University of Guyana in 2022. He has several international awards, amongst them Chartered Chemist, CChem, Fellow of the Royal Society of Chemistry, FRSC, UK, member of the American Chemical Society, Research Grants, etc. He is also a Fellow of the Caribbean Academy of Sciences.

His research interests are broad, covering the spectrum of Pure and Applied Chemistry, Chemical Biology, and Pharmaceutical Chemistry. He has published over one hundred (100) research articles, five book chapters, one book, and three e-books and presented at over 100 conferences locally, regionally, and internationally.

He has given keynote presentations at several conferences and is a member of several editorial boards and a reviewer of several journals. He is currently a Professor of Chemistry at the University of Guyana (South America), former President of the Caribbean Academy of Sciences (2020-2023), and is currently, Foreign Secretary of the Caribbean Academy of Sciences.

GLOBAL KNOWLEDGE DIALOGUE FOR LATIN AMERICA AND THE CARIBBEAN (GKD-LAC) ORGANIZED BY THE INTERNATIONAL SCIENCE COUNCIL. APRIL 9-11, 2024, IN SANTIAGO DE CHILE, CAS KEYNOTE

PROF. MARK WUDDIVIRA
PRESIDENT, CAS REGIONAL EXECUTIVE.

Professor Mark Wuddivira, Dean of the Faculty of Food and Agriculture (FFA), The University of the West Indies, St. Augustine (UWI), and the President of the Caribbean Academy of Sciences (CAS) was a keynote speaker at the Global Knowledge Dialogue for Latin America and the Caribbean (GKD LAC). Held from April 9-11, 2024, in Santiago de Chile, the event organized by the ISC brought together prominent scholars, policymakers, and scientific leaders on a Global Knowledge Dialogue seeking to secure a powerful voice for science in LAC.

As the President of CAS, Professor Wuddivira brought a wealth of expertise and insight to his keynote address, titled "The Question of Autonomy: The Critical Relationships between Academies, Disciplinary Bodies, Unions, and International Scientific Organizations, and the State."



His presentation delved into key issues surrounding autonomy within scientific communities, shedding light on the roles of science and research in improving quality of life and creating a sustainable future for generations to come, the relationship between scientific communities and the state, and the challenges affecting the autonomy of scientists in conducting research.

Professor Wuddivira's address was marked by its depth of analysis and its emphasis on the vital role of autonomy in fostering innovation, intellectual freedom, and scientific progress. He underscored the importance of preserving the independence of scientific communities while recognizing the need for collaboration and engagement with governmental and regulatory bodies.



Throughout his keynote, Professor Wuddivira addressed crucial questions, including the role of scientific communities in shaping public policy, the impact of external influences on research autonomy, and strategies to strengthen the effectiveness of autonomy within scientific endeavors. He urged that autonomy remains a cornerstone of scientific inquiry and discovery.

The audience at the ISC GKD LAC was inspired by Professor Wuddivira's thought-provoking insights and visionary perspectives. His address sparked lively discussions in a panel discussion that followed and prompted participants to consider the necessary steps to safeguard and promote autonomy within scientific communities.



National and regional academies, such as the CAS, play a crucial role in offering independent expert advice to governments, public interest organizations, and the general public. As such, Caribbean governments should recognize and embrace CAS as a prominent authority in academia and scientific leadership.

We must remain committed to upholding the principles of autonomy and intellectual freedom, advancing the frontiers of knowledge, and driving constructive change. By actively shaping policies and promoting evidence-based decision-making, we can make a significant impact in addressing the unique challenges faced by the vulnerable Caribbean region.

PROF. MARK WUDDIVIRA JOINS THE INTERNATIONAL SCIENCE COUNCIL (ISC) COMMITTEE AS A SIDS LIAISON

PROF. MARK WUDDIVIRA
PRESIDENT, CAS REGIONAL EXECUTIVE.

The Dean of the Faculty of Food and Agriculture at the UWI, St. Augustine campus, Prof. Mark Wuddivira, has been appointed to the International Science (ISC) Committee as the ISC's Small Island Developing States (SIDS) Liaison. Amidst the distinct challenges faced by small island nations across the globe, the International Science Council (ISC) is forging a path toward resilience and sustainability.



The SIDS Liaison Committee which comprises scientists from SIDS around the world serves as a crucial platform for SIDS to come together, share knowledge and best practices, and advocate for their specific needs on the global stage. By working collectively, these island nations can amplify their voices and leverage resources to tackle common issues such as climate change, sustainable development, and economic resilience.

Through the committee's efforts, SIDS can access technical assistance, capacity-building programs, and funding opportunities that may otherwise be out of reach.

By fostering partnerships with governments, international organizations, and civil society groups, the committee can drive positive change and create a more sustainable future for all SIDS, particularly to encourage collaboration within SIDS for the UN Decade of Ocean Science.

Professor Wuddivira's expertise and insights on building resilience in the face of climate change, economic challenges, and other threats will help guide discussions and inform policy recommendations. His representation at the 4th International Conference on Small Island Developing States (SIDS4) on "Charting the Course Toward Resilient Prosperity," from 27th to 30th May 2024 in Antigua and Barbuda, will showcase not only his commitment but also his leadership when advancing science, technology, and innovations in SIDS in the Caribbean region.

To read more about the upcoming 4th International Conference on Small Island Developing States (SIDS4), please see the following link:
https://sdgs.un.org/conferences/sids2024

WORKSHOP ATTENDANCE
UNIVERSITY OF GUYANA, TURKEYEN CAMPUS.

PROF. RAYMOND JAGESSAR
FOREIGN SECRETARY, CAS REGIONAL EXECUTIVE.

- Workshop on Statistics and Society, January 22-23, 2024, Education Lecture Theatre, University of Guyana, Turkeyen Campus.

- Workshop on Climate Change, Land and Energy models, January 15-19, 2024, Faculty of Natural Sciences. University of Guyana.



Prof. Raymond Jagessar

SPOTLIGHT
CAS-TRINIDAD & TOBAGO (CAS-TT) CHAPTER



THE 2024 E-SEMINAR SERIES HOSTED BY THE CAS TRINIDAD AND TOBAGO CHAPTER (CAS-TT)

PROF. KIT FAI PUN
PRESIDENT, CAS TRINIDAD AND TOBAGO CHAPTER (CAS-TT)

1. Introduction

This e-seminar series was hosted by the Caribbean Academy of Sciences Trinidad and Tobago Chapter (CAS-TT), in collaboration with the Industrial Engineering Office of the University of the West Indies (UWI) and supported by the Society of Caribbean Industrial Engineers (SCIE) and the IEEE Trinidad and Tobago Section (via its TEMS and EdS Chapters). It is composed of three individual webinars held in April-May 2024. The goal of hosting the series is to facilitate a nationwide awareness of recent issues and best practice approaches that would foster benefits of information and knowledge sharing and promote understanding, betterment, and quality of life in Trinidad and Tobago (T&T) and in a wider regional context.

2. Highlights of e-Seminar 1 held on 6th April 2024

In 2015, Guyana drilled its first successful oil exploration well in deep water 100 kilometers off the Guyana coast. This was followed by a series of discoveries that have established oil reserves of 11 billion barrels. Such developments in Guyana, being a nation now on track to becoming a powerhouse as the 10th oil discovery made. Oil exploration has become a hot and timely topic not only for Guyana but also for the region.

The First Seminar of the series was made on 6th April 2024, with the topic theme focused on 'meeting the need for Petroleum Engineers and Technicians as a result of successful petroleum exploration in Guyana'. Two guest speakers were Ms. Verlyn Klass, Dean of the Faculty of Engineering and Technology, University of Guyana, and Dr. Neal Alleyne, Assistant Professor of the University of Trinidad and Tobago. The program included a specially invited presentation made by guest speakers, followed by an open discussion forum.

The two speakers shared what and how the universities and education/training providers work with Guyana's Government and the industry sectors to build the human capital and capacities via the provision and training of Petroleum Engineers, Technicians, and associated professionals, and meet the needs facing the petroleum exploration in Guyana. The focal areas of the presentation are summarized, as follows:

- The phenomenal exploration success has presented Guyana with the challenge of finding and developing engineering professionals to support the development of Guyana's petroleum sector.
- The University of Guyana (UG) accepted this challenge and in 2019 launched an Associate in Science programme in petroleum engineering to create graduates who can either fill jobs in the petroleum industry as technicians or matriculate into a programme to pursue a bachelor's degree and fill positions as petroleum engineers.

• Being experienced in delivering engineering programmes but new to the petroleum engineering field, UG collaborated with the University of Trinidad and Tobago (UTT) to deliver its petroleum programmes.
• The speakers discussed the efforts and approach in developing the petroleum engineering human resource for Guyana's petroleum sector.

The seminar was attended by 22 participants including invited speakers, guests, CAS members, academics, students, and delegates from industry. Many participants were actively engaged in the discussion and exchanged their views and suggestions in the experience-sharing open forum session. They commented that the presenters were very knowledgeable about their areas of expertise and the presentations were informative. Feedback from participants was overwhelmingly good, for instance:

- It was great to have two (2) presenters. The amount of time for questions and interaction was good.
- The panelists responded frankly and fully to questions. The time and day were very convenient.
- Very informative especially about the Guyana Oil story.
- The opportunity for questions before and during the webinar was extensive.
- The presenters answered the difficult questions well.
- Comments by the former Minister Mr. Enill added value.
- Interaction and proposed collaborative effort of UoG, UWI, and UTT.
- Practical evidence-based data.



Ms. Verlyn Klass,
e-Seminar 1 Guest Speaker,
Dean, Faculty of Engineering and Technology,
University of Guyana
Greater Georgetown, Guyana.



Dr. Neal Alleyne,
e-Seminar 1 Guest Speaker,
Assistant Professor
(Energy Systems Eng Unit)
University of Trinidad and Tobago, Trinidad.

3. Highlights of the Two e-Seminars

The two Webinars of the series that have been organized and delivered, include:

e-Seminar 2: "Sandwatch: An Educational Tool for Sustainable Development."

by Andy Paul, Principal of Mayaro Government Primary School in Trinidad and Tobago

Took place on: 25th April 2024, Thursday at 1:00 pm (T&T Time via Zoom).



Mr. Andy Paul,
e-Seminar 2 Guest Speaker,
Principal, Mayaro Government Primary School
Trinidad and Tobago.

Sandwatch is a comprehensive initiative that engages school children and their communities in the monitoring and conservation of coastal environments, with a primary focus on the understanding of the dynamic nature of our beaches. The primary goal of Sandwatch is to modify the lifestyle and habits of children, youth, and adults on a community-wide basis to foster environmental awareness of the fragile nature of the marine and coastal environment. Consequently, empowering them to become stewards of their coastal environments.

The programme employs a multidisciplinary approach, combining scientific inquiry, community engagement, and education to address the challenges posed by coastal erosion, climate change, and human activities. Mr. Paul shared his experience of promoting and developing Sandwatch in the Caribbean and abroad. He described the methodology of the Sandwatch initiative and discussed the factors affecting the success of the initiative and its impact on the communities with reference to the protection of coastal ecosystems and the education of future generations.

e-Seminar 3: "Diabetes, Obesity, and Associated Diseases: Problems of Health in the Caribbean "

by Professor Alain Pietrus; Faculty of Exact and Natural Sciences, Universit´e des Antilles (UA), Guadeloupe, and President of the CAS Guadeloupe Chapter (DFA)

Took place on: 11th May 2024, Saturday at 9:00 am (T&T Time via Zoom)

In the Caribbean obesity is a real problem, 25% of the people are obese and 60% are overweight. The root cause of obesity and overweight is an energy imbalance between calories consumed and calories expended. Changes in diet and physical activity may be related to environmental and social changes associated with development and lack of supportive policies in sectors such as health, agriculture, transportation, urban planning, environment, food processing, distribution, marketing, and education. Overweight and obesity can be prevented.

There is a relationship between obesity and type 2 diabetes. The likelihood and severity of type 2 diabetes are related to body mass index (BMI). The risk of diabetes is seven times higher in obese people than in those with a healthy weight, and the risk triples in overweight people. Cancer is also a health problem that causes many deaths every year.

The relationship between cancer and obesity has been observed in several experimental studies. Moreover, the International Agency for Research on Cancer (IARC) reported sufficiently linking cancer-obesity evidence for colorectal cancer, breast cancer in postmenopausal women, endometrium cancer, renal cancer, and esophagus cancer. An interesting way to understand these diseases and their links is to use compartmental models.

During this discussion, some models on diabetes, obesity, and others that represent their links with other diseases. Some recommendations are made to the authorities to reduce the effects of these diseases.



Professor Alain Pietrus,
e-Seminar 3 Guest Speaker,
Professor,
Faculty of Exact and Natural Sciences,
Universit´e des Antilles (UA),
Guadeloupe.

4. Closing

On behalf of the e-Seminar Organizing Committee, we would like to thank all our guest speakers, the co-host (UWI - Industrial Engineering Office) and supporting organizations (SCIE and IEEE), as well as the CAS TT Chapter, the Executive Committee members and other persons who helped and dedicated their time and efforts in planning and organizing the series.

About the Author:

Professor Kit Fai Pun is the Chair of the Industrial Engineering and Management (IEM) and the Coordinator of IEM Research Group at the UWI, St Augustine, Trinidad and Tobago. He is a Chartered Engineer and Chartered Marketer in the United Kingdom, as well as Registered Professional Engineer in Australia, Europe, Hong Kong, and The Republic of Trinidad and Tobago.

Professor Pun is presently the Chair of the Technology and Engineering Management Society Chapter of the IEEE Trinidad and Tobago Section and the President of the Caribbean Academy of Sciences – Trinidad and Tobago Chapter. His research activities include industrial and systems engineering, engineering management, quality management, and performance measurement.

DR. RONALD ROOPNARINE ASSUMES HIS EXPERT ROLE ON THE SCIENTIFIC COMMITTEE OF THE ISC-IRDR PROGRAMME

PROF. KIT FAI PUN (PRESIDENT, CAS-TT) &
DR. ALBERTHA JOSEPH-ALEXANDER (ACTING PRESIDENT & PRO, CAS-TT)

Dr. Ronald Roopnarine is a researcher and academic with a thorough background in Disaster Risk Resilience and Sustainable Land and Water Resource Management. Presently, Dr. Roopnarine is a Lecturer in the Faculty of Food and Agriculture (FFA), the University of the West Indies (UWI), St. Augustine Campus, responsible for teaching and developing courses related to Agri-environmental Disaster Risk and Climate Resilience.
He is the Network Manager of Caribbean WaterNet (Caribbean arm of CapNet UNDP) and an international consultant for various UN agencies (Roopnarine, 2024). Dr. Ronald Roopnarine is also an active member of the Caribbean Academy of Sciences – Trinidad and Tobago Chapter (CAS-TT).



Dr. Ronald Roopnarine will assume his new role as an expert on the Scientific Committee of the Integrated Research on Disaster Risk (IRDR) programme, and his tenure spans for three years May 1, 2024, to April 30, 2027. He was selected as an expert on the committee by the International Science Council (ISC), following his nomination from the Caribbean Academy of Sciences. The IRDR programme has been jointly sponsored by the ISC and the United Nations Office for Disaster Risk Reduction (UNDRR), recognising disaster risk management as an indispensable component of the UN's 2030 Agreements and national development strategies (UWI, 2023).

Dr. Roopnarine has a thorough background in Disaster Risk Resilience and Sustainable Land and Water Resource Management and has amassed significant experience in Integrated Water Resources Management and Climate Change Adaptations, with a specific focus on Caribbean Small Island Developing States (Roopnarine, 2024). His expertise plus progressive thinking was the genesis for the development of the new Major in Disaster Risk Resilience in Agriculture and the Environment.



Dr. Ronald Roopnarine is facilitating one of the sessions at the National Drought Risk Management Workshop in Antigua and Barbuda 2019 (Global Water Partnership Caribbean, 2019).



Dr. Ronald Roopnarine at the evening reception of the CAS 23rd Biennial Conference hosted by CAS/UWI in Trinidad and Tobago in November 2023 (CAS-TT, 2023).

At the UWI- Faculty of Food and Agriculture, Dr. Roopnarine has been instrumental in acquiring projects and grant funding amounting to over 8 million USD in the last 3 years. Recently, he coordinated efforts that led to the UWI-FFA, being selected as the operational partner for two major Regional Fisheries projects co-funded by the Food and Agriculture Organisation (FAO) and the Global Environmental Facility (GEF), and an FAO-funded, innovative insect farming project to be implemented at the University Field Station.

Our current President of the Caribbean Academy of Sciences (CAS) and the Dean of the Faculty of Food and Agriculture of the UWI, Professor Mark Wuddivira, notes that "this remarkable recognition not only highlights Dr. Roopnarine's expertise and contributions but also spotlights the exceptional caliber of our faculty members, as well as FFA's cutting edge research and global collaboration. This achievement resonates deeply within our academic community and positions us as a hub of innovation and expertise in the field of water resources," (UWI, 2023).

In his new capacity as an expert on the Scientific Committee of the IRDR programme, Dr. Roopnarine will collaborate with a cadre of distinguished scientists worldwide to advance both the ISC's and CAS's objectives, focusing on the critical mission of disaster risk reduction and resilience-building.

The CAS Trinidad and Tobago Chapter, extends warm congratulations to Dr. Roopnarine on his appointment, recognizing his invaluable contributions to the field of disaster risk reduction and his commitment to global scientific collaboration.

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About the Authors:

Professor Kit Fai Pun is the President and Dr. Albertha Joseph-Alexander is the Acting President and PRO of the Caribbean Academy of Sciences – Trinidad and Tobago (CAS-TT) Chapter. Professor Pun is a CAS Fellow and a Professor of Industrial Engineering & Management at UWI St. Augustine, Trinidad and Tobago.

BIOSECURITY MEETING ON 27-28 FEBRUARY 2024, TRIESTE, ITALY

PROF. NEELA BADRIE

Professor Neela Badrie attended the Biosecurity meeting- "Proof-Of-Concept for a Scientific Advisory Body within the Biological Weapons Convention on the topic Possible Benefits and Risks of Artificial Intelligence (AI) for Global Biosecurity in the BWC Context", Trieste, Italy. This meeting was organized by The InterAcademy Partnership (IAP) together with the National Academies of Sciences, Engineering and Medicine and the U.S. Department of State's Office of Weapons of Mass Destruction Terrorism.

It was held at the Abdus Salam International Centre for Theoretical Physics (ICTP), which is governed by the International Atomic Energy (IAEA), Italy, and the United Nations Educational, Scientific and Cultural Organisation (UNESCO) in the beautiful northeastern seaport of Trieste, Italy.





The Biological and Toxin Weapons Convention (BWC) prohibits the development, production, stockpiling, acquisition, retention, or transfer of biological weapons.

The BWC's objective is to ensure that the life sciences and biotechnology are not used for hostile purposes while allowing for peaceful activities.

The convergence risks derived from Artificial Intelligence (AI) technology and biotechnology have the potential and are likely to cause physical harm and disruption to society just as much as a society can benefit from this innovation.

The risks posed by the convergence of AI with the biological sciences are many and varied, ranging from AI-assisted identification of virulence factors to in silico design of novel pathogens, which could increase the probability of a global catastrophic biological risk event if accidentally, carelessly, or deliberately released.

At this meeting, Professor Neela Badrie served as an expert and vice chair for several sessions such as how AI could either negatively or positively affect biotechnology and international cooperation in the BWC context and on the general discussion of the text for proof-of-concept note for a Scientific Advisory Body within the BWC. She is an attorney-at-law and microbiologist who has worked on biosecurity and terrorism issues.

It was a very successful meeting which included 38 participants from 32 countries and all five United Nations regional groups, in addition to 15-20 online observers. The outcome of the meeting will be presented at the BWC, Geneva, Switzerland.

Professor Badrie has served on both the biosecurity and human security working groups of IAP. She has participated in the development of the Tianjin Biosecurity Guidelines and most recently on the proposed IAP concept statement on human security. She is an elected fellow of The World Academy of Sciences (TWAS) and the Caribbean Academy of Sciences (CAS).



About the Author:

Professor Neela Badrie is a fellow of the Caribbean Academy of Sciences (CAS) and has been on the executive as treasurer and public relations officer. She has served other scientific organizations in various ways such as The World Academy of Sciences (TWAS, Italy), the Institute of Food Technologists (IFT, Chicago), the Inter-Academy of Partnership (IAP, Italy), Caribbean Agro-Economics Society (CAEES), the Inter-American Network of Academy of Sciences (IANAS, Argentina), the International Association of Food Protection (IAFP, Iowa). Her scientific disciplines are microbiology, biosecurity, food safety, food quality, epidemiology and food-borne diseases, and international agri-food legislation. She is a registered attorney-at-law in Trinidad and Tobago and practices in various fields of law such as family, property, family, civil and environmental. Professor Badrie is a Fulbright scholar and has been the recipient of other international fellowships/awards.

THE CAS 23RD BIENNIAL CONFERENCE 2023, HOSTED BY CAS-TT CHAPTER, AT THE UWI, ST AUGUSTINE CAMPUS, TRINIDAD & TOBAGO, 24-25 NOVEMBER 2023. #CASCONF23

DR. ROSHNIE A. DOON
SECRETARY, CAS REGIONAL EXECUTIVE.

The Caribbean Academy of Sciences (CAS) held its 23rd Biennial Conference and General Meeting from November 24-25, 2023, at the University of the West Indies (UWI) campus in Trinidad and Tobago.

Hosted by the CAS-TT Chapter, under the theme, "The Sustainability and Development Initiatives of the Caribbean," the conference sought to revive, establish, and sustain knowledge production, sharing, and collaboration around sustainability and development in the Caribbean region and beyond.

The theme of the conference was observed to be strongly linked to the Sustainable Development Goals (SDGs), in particular SDGs 2 to 17, i.e., Zero Hunger, Good Health and Well-being, Quality Education, Gender Equality, Clean Water and Sanitation, Affordable and Clean Energy, Decent Work and Economic Growth, Industry, Innovation and Infrastructure, Reduced Inequality, Sustainable Cities and Communities, Responsible Consumption and Production, Climate Action, Life Below Water, Life on Land, Peace, Justice and Strong Institutions, Partnerships for the Goals.





The conference featured parallel paper presentation sessions, poster presentations, round-table conversations, and networking opportunities for scientists, academics, researchers, experts, and practitioners.

The conference incorporated the views of many industry leaders and academic scholars throughout the Caribbean as featured speakers, who spoke on a wide range of topics such as environmental management, biodiversity, sustainable development initiatives in the water and sanitation sector, and the Caribbean as a whole, Engineering Education and Convergence, Innovation, Chronic Ailments, Soil Degradation in the Caribbean, Forecasting and Monitoring of Saharan Dust in the Caribbean, Digital Twins, Quality Assurance, and Caribbean Women in Science.







The first day of the conference saw many presentations that explored a variety of topics in areas such as Innovation, Tourism, Caribbean Women in Science, Climate Change Risk and Resilience, Global Warming, Dark Chocolate Formulations, and Robotics in the Health Sector. While on the second day of the conference featured discussions on topics such as Digital Twins, Misinformation, Crop Resilience, Operational Performance, Firm Engagements in Innovation, Gender Pay Gap in Tech, Value Management, and Climate Change Adaptation.

The conference also afforded presenters the opportunity to be recommended to be published in several journals, i.e., Tropical Agriculture, The West Indian Journey of Engineering, and the Industrial Engineering and Management Journal, as well as an edited book on Transitioning to Climate Action edited by Dr. R.A. Doon and published by MDPI, Basel, Switzerland.

The conference also attracted the submission of several posters by various academic scholars at different levels of their careers throughout the Caribbean.

These posters highlighted many different areas such as Nano liquid-based Cooling Systems, Botanical Identification of Honey in Trinidad and Tobago, Ventilation and Health Assessment models, Radioactive Tracers, Intertidal Snails, Cicadellidae, STE (Science, Technology and Engineering) education, the Spaying and Neutering of Cats and Dogs, Consequences and Challenges of Going Green, Water Quality, and pectin extraction.

The poster done by Yolène Duchaudé, and colleagues from Fouillole, University of French West Indies, Institute Pasteur de la Guadeloupe, on the Potential of Caribbean Sargassum to control Aedes aegypti Mosquitoes, won the the best poster competition at the conference.

The Caribbean Academy of Sciences (CAS) Trinidad and Tobago Chapter's Biennial Conference was supported by the Faculty of Engineering at the UWI St. Augustine campus, the Society of Caribbean Industrial Engineers, and the International Science Council. The conference attracted the support of many corporate sponsors including Massy Wood, Anna McAl Chemicals Ltd., IEEE, First Citizens, Powergen, The Institution of Engineering and Technology, National Energy Corporation of Trinidad and Tobago, Hydrogen Research H2RC Collaborative Symposium, Atlantic, Cocoa Research Unit, Tobago Beyond, Seal it in Time, Kenesjay Green, and Massy Foundation.



CAS-TT Executive Members (2022-2024)

For more information on the 23rd Biennial Conference and General Meeting hosted by the CAS-TT Chapter last year in 2023 kindly see the following link:
https://sites.google.com/view/caribbeanacademyofsciencestt/home

The Caribbean Academy of Sciences (CAS) 24th Biennial Conference and General Meeting will be hosted by the CAS-Barbados Chapter in 2025.

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SPOTLIGHT
CAS-GUYANA CHAPTER

"MY SCIENCE JOURNEY": CAS GUYANA CHAPTER OBSERVES INTERNATIONAL DAY OF WOMEN AND GIRLS IN SCIENCE 2024 WITH SHARED STORIES

DR. DAWN FOX
CAS-GUYANA

In observance of UNESCO International Day of Women and Girls in Science, the all-female leadership team of the CAS Guyana chapter hosted a webinar entitled My Science Journey on Feb 16, 2024, via Zoom.

The webinar featured two speakers: Ms. Petal Jetoo, Associate Corporate Quality Manager (Laboratories) at American Sugar Refining Inc and CAS Fellow, and Ms. Ashanti Horsham, a final year student in the BSc Food Science programme at the University of Guyana. Invitations were extended to the national secondary science education network as well as to the University of Guyana community. The webinar was moderated by Dr. Anna Perreira, Vice-President of CAS Guyana Chapter and Lecturer in the Faculty of Engineering and Technology at the University of Guyana.

Citing "a love for nature and learning and a fear of failure" as early motivators, Ms Jetoo shared highlights of her dual-track career in the seemingly unrelated fields of sugar production and STEM Education. Starting as a Chemist with the Guyana Sugar Corporation GuySuCo).

She shared how delivering technical benefits to the company such as improving sucrose loss prevention, implementing new technology for juice clarification, and designing and implementing an automated factory reporting system via intranet resulted in her being promoted three times in four years to being the first female and youngest Production Manager in the company.


Ms. Petal Jetoo

A crowning highlight was her contribution to GuySuCo being the first sugar company among African-Caribbean-Pacific countries to gain ISO 9001 certification.

While serving as National Science Coordinator responsible for STEM Education, Ms Jetoo was able to reorient science education for science teachers and students toward Inquiry-based methods using the UNESCO Micro science kits in Guyana and Jamaica as well as lead the development of a National Curriculum Framework for Science Education for Sustainable Development among other achievements.

In her words, she credits "an openness to learning, embracing challenges and believing in yourself" as supremely important for women scientists seeking to make an impact in male-dominated fields. Throughout the journey, she highlighted the integral role that CAS played in supporting her journey, connecting her with colleagues with aligned goals, and providing opportunities to serve.



Similar notes of exploration and the importance of community were heard when Ms. Ashanti Horsham shared how curiosity about food and nutrition, a love of chemistry, and the encouragement of mentors at the secondary level led her to choose to study Food Science over the more traditional and popular path to medicine.

Ms Horsham shared how internship opportunities, extracurricular activities, and a community network have enriched her academic journey and opened up avenues as she embarks on her professional journey.

She shared how serving as President of the UG Chem Club, the student club affiliated with the Department of Chemistry, has helped her to develop her leadership skills and become a mentor and advocate for food science.

The session was fairly well attended by members of the Science education community, the University of Guyana community, and CAS Central. The CAS Guyana Chapter plans to share the recording for dissemination to the Secondary science students as a motivational tool to encourage more girls and young women to consider STEM careers.

About the Author:

Dawn I. Fox, PhD DipEd, is a Senior Lecturer and the Head of the Department of Chemistry at the University of Guyana. Her overarching research interest is in converting local materials into filters and sorbents for improving water quality. She has 20 years of experience as a tertiary educator and is passionate about creating transformative learning experiences for students. Dr. Fox has several peer-reviewed journal articles and conference proceedings publications and holds two patents. In 2018 she became the first Guyanese to be awarded the Organisation for Women in Science for the Developing World – Elsevier Foundation Early Career Award for scholarship and research in the Physical Sciences. In 2024, she co-authored her first book Post-secondary Chemistry Education in Developing Countries. She currently serves as a Programme Officer for the CAS Guyana Chapter.

SPOTLIGHT
CAS-JAMAICA (CASJ)



INTERNATIONAL UNION OF PURE AND APPLIED CHEMISTRY (IUPAC) GLOBAL WOMEN'S BREAKFAST (GWB) "CARIBBEAN WOMEN: CATALYZING DIVERSITY IN SCIENCE" UWI/CASJ

DR. ANIKA BROWN
CAS-JAMAICA

The University of the West Indies Departments of Chemistry (Mona/St. Augustine) and Department of Biological and Chemical Sciences (Cave Hill) in collaboration with the Caribbean Academy of Sciences, Jamaica Chapter (CASJ) jointly hosted a virtual Global Women's Breakfast (GWB) on Tuesday February 27, 2024.

The GWB is an initiative of the International Union of Pure and Applied Chemistry (IUPAC) with over 100 countries participating annually. The theme of the UWI/CASJ event was "Caribbean women: Catalyzing Diversity in Science".

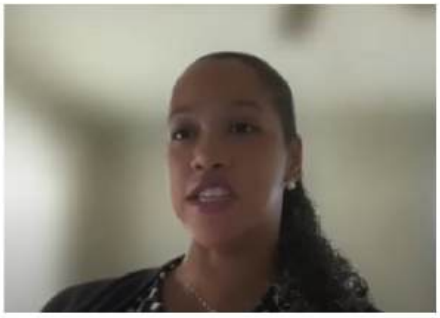
The featured panelists were Dr. Jeanese Badenock (Dean, Faculty of Science and Technology, UWI Cave Hill), Dr. Lesley-Ann Giddings (Assistant Professor of Chemistry, Smith College, USA), Dr. Marvadeen Singh-Wilmot (Senior Lecturer, Department of Chemistry, UWI Mona, CAS Fellow) and Camille Strachan-Mills (Associate Director of Chemistry, Manufacturing and Controls Regulatory Affairs, Johnson & Johnson Innovative Medicines, USA).



Dr. Jeanese Badenock (Dean, Faculty of Science and Technology, UWI, Cave Hill)



Dr. Lesley-Ann Giddings (Assistant Professor of Chemistry, Smith College, USA)



Camille Strchan-Mills (Associate Director of Chemistry, Manufacturing, and Controls Regulatory Affairs, Johnson & Johnson Innovative Medicines, USA).

The panelists spoke on a range of topics including their scientific journey to date, advances made towards achieving diversity, equity and inclusion, challenges that remain, and shared thoughts on the way forward.

Organizers of the event included Dr. Ainka Brown (UWI Mona, CAS Ja), Dr. Petrea Facey (UWI, St. Augustine), and Dr. Rachel Wyse-Mason (UWI St. Augustine) who also moderated the session.

A recording of the event can be found on the UWI Mona FST YouTube channel at the link below.
https://www.youtube.com/watch?v=CEVyuTShGLE

About the Author:

Dr. Ainka Brown is a synthetic organic chemist with interests in heterocyclic molecules with potential biological activity, methodology development, Green Chemistry, and science communication and outreach. She is currently employed at the University of the West Indies, Mona in the Chemistry department as a lecturer and researcher.



YES, WE CAN, AND WE MUST! CELEBRATIONS OF THE INTERNATIONAL DAY OF WOMEN AND GIRLS IN SCIENCES IN CUBA

LILLIAM ALVAREZ DIAZ, AURORA PÉREZ MARTÍNEZ, ELIZABETH RODRÍGUEZ QUERTS
CUBAN ACADEMY OF SCIENCES
INSTITUTE OF CYBERNETICS, MATHEMATICS AND PHYSICS

1. Introduction

Being a woman in Cuba

It is real that in Cuba inclusion and equity in many aspects of the socio-economic development have been achieved, such as education, access to health, and opportunities following professional studies. But why do we need in Cuba to speak more of these gender issues in general? A brief remark on some figures illustrates the answer. According to official statistics Cuba reported 117 femicides during 2023.

In a population of 11 million inhabitants, approximately 9, 570 Cuban families live in domestic violence, including 16, 116 women and girls. While in Cuba there is no gap in salaries, no difference in salary between men and women, which is a real fact that we earn less, due to, we need to ask for non-remunerated permissions and licenses to take care of children, elders, or families. In Cuba we continue being the care providers, the housekeepers, using 10 hours a day more than a man- dedicated to non-remunerated domestic and familiar jobs.

Being a woman in sciences in Cuba

Following the commitment made in Budapest in 1999 during the UNESCO World Science Summit, the Cuban Academy of Sciences founded a Commission of Women in Sciences with the primary objective of promoting inclusion, highlighting the crucial role of Cuban women, and contributing to scientific development on the island. Many have been efforts and concrete actions 25 years after, starting with a small number of activists, some feminist members of the Cuban Academy, and some interested women in scientific institutions and universities. Today we can say that those primary actions have been multiplied gaining a real critical mass of women and men, scientists, docents, and journalists increasing their culture in the trilogy "sciences-technology-gender issues."

We are delighted to share, in this brief contribution to the CAS Newsletter, some successful meetings, dialogues, and social networks online, that we have done particularly, calling attention to decision-making and social media during the celebrations of the International Day of Women and Girls in Sciences. Clearly, during the whole year, around the 8 of March, International Women's Day, or the 11 of May, the International Day of Women in Mathematics, we systematically celebrate different activities, but in this contribution, we are remarking those celebrated in the occasion of 11 of February.

2. The beginnings

In 2018, the 11th of February was declared a memorable day by the United Nations General Assembly, that is, the International Day for Women and Girls in Science.

The Day was established to recognize the role women and girls play in science and technology. It is an international awareness-raising campaign to raise the profile of women in STEM disciplines. Figures show that although there is no significant difference in ability between boys and girls in mathematics and science, less than 35 percent of graduates in STEM subjects worldwide are women and there are even fewer in engineering and information technology.

Since the very beginning in 2018, 2019, and 2020 the Commission of Women in Sciences of the Cuban Academy organized Panels in the main salon, called Paraninfo of the Academy where prominent women share their successful (and also obstacles) careers with inspiring histories and familiar and labor experiences, not exempt of subtle discriminations (sometimes not so obvious) against their ambitions to pursue the dream of a scientific career.

During the COVID pandemic in 2022, we organized an online "Open doors of the Academy" highlighting the importance of having more women in Basic Sciences, especially in Mathematics and Physics, and also announcing the celebrations of the International Year of Basic Sciences 2022- 2023.



Lilliam Alvarez leading the "Open Doors of the Academy"

3. Main activities 2023, 2024

An enthusiastic and very active group of physicists, mathematicians, biologists, and journalists, medical doctors, social scientists, have been promoting meetings, dialogues focused mainly on the debate of gender concepts, feminist theories, identifying experiences and exchanging different experiences among women doing hard sciences and others from other fields, as social scientists' experts in gender issues and sharing scientific results concerning the life of women devote to sciences.

An Important step has been the proposal and the approval for financial support of the Project Yes, I can! Yo, si puedo! - Empowering women in STEM in Cuba, with DAAD Germany, from funds of the BMZ. Fortunately, having this support, we have been able to organize and amplify many actions, but we would like to refer to the following. It was decided to organize a regular public meeting always on a date close to the International Day of Women and Girls in Science (February 11 of each year).

The 2023 workshop, with the theme "Innovate. Demonstrate. Raise. Advance. Hold (I.D.E.A.S.)" took place at the Planetarium of Old Havana, with the presence of representatives of social actors and institutions such as the Cuban Academy of Science, Cuban Physical Society, Institute of Mathematical and Physical Cybernetics and National Cuban Commission of UNESCO, with the following aims:

- to visualize Women in STEM in Cuba
- to face the remarkable biases detected in our community
- to inspire girls with native and real role models to pursue STEM careers

The goal of the meeting was to empower women in science along the issues of our weakness: invisibility, leadership, psychological violence, harassment, and low self-confidence. The main purpose was to have a sincere dialogue about the prejudices, stereotypes, obstacles, and challenges faced by women of science to perform their work and achieve the recognition that we deserve. The program for this edition counted five conferences on the biological social life of women, gender violence, a panorama of women's prizes, self-confidence, and gender bias of artificial intelligence. The public debates and the closure of the event counted with the representative of UNESCO in Cuba.

The first presentation was given by Mayda Álvarez Suárez (Women's Studies Center, belonging to the Cuban Federation of Women). She shares with the audience the results of the National Survey on Gender Equality of 2016, as well as the main characteristics of the national debate about the new Cuban Family Code. As a psychologist, she focused on the gender biases still present in Cuban society, as the mentioned studies indicate. A portion of the popular imaginary concepts and attitudes persist that perpetuate male chauvinism, sexism, gender discrimination, and gender violence.

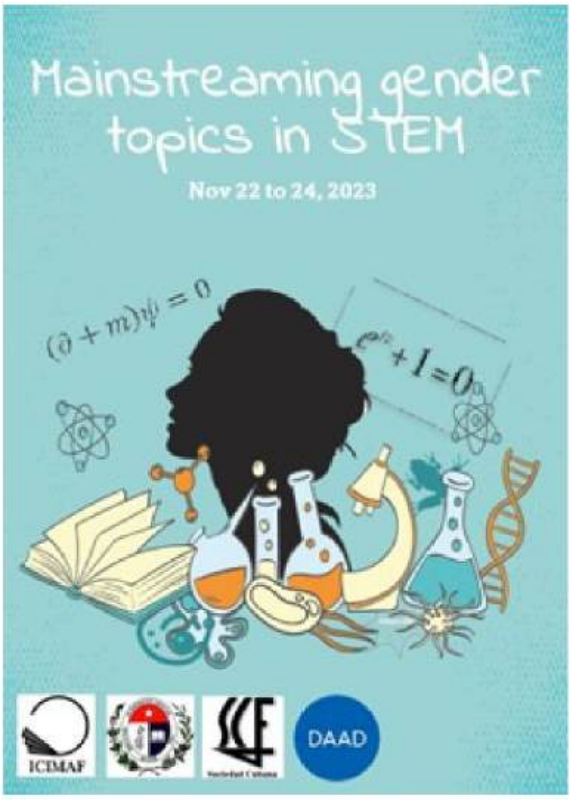
Similar biases, including beauty-related stereotypes, were mentioned by Sandra Costa González, a physics postgraduate student at the Institute of Cybernetics, Mathematics and Physics. She talked about their experience using a based-on AI design platform to generate an image representing women scientists to create the poster for the workshop. Although she tried to vary the parameters', distorted images were generated every time. It inspired Sandra to ask Chat-GPT to list 10 world scientists and the answer only included the name of one woman: Marie Curie. After a second question: "And why did you name me only one woman? ", Chat-GPT wrote: "It was interesting to confirm that in the data that these systems handle, as in many other spaces, the role of women is not yet very visible, although studies have been done on their participation in these areas". She concluded that the fact that in these same platforms, few women are influencing the models and data, so the responsibility for addressing gender stereotypes cannot only fall on the shoulders of the technological companies since this is a social problem that requires a broader commitment and collaboration.

The talk of Carmen María Valenzuela Silva, a relevant Mathematician of the Institute of Cybernetics, Mathematics, and Physics tackled the self-confidence of scientific women and how to learn to enhance it. In her opinion, how education plays an important role in teaching different values to girls and boys. The relevance of physical beauty, and peaceful and kind manners for girls in contrast to those for boys' target to be brave, intrepid, etc., at the social and psychological level are the origin of the low self-esteem of many women and are issues that should be treated. Valenzuela explained that women who work in science often have fewer possibilities to occupy leadership positions in science. She also argued that publications with female authorship are less cited and referenced.

Laura Azor Hernandez young researcher and professor of the Faculty of Biology at Havana University talked about the biology of women and the genetic and behavior heritage that women have from female mammals. She explained how some human male violence attitudes are like primates and bonobos, but she claimed that our culture and social life should prevent these behaviors. Some female primates join to fight against violence against males. So, to join an discuss about our problems resemble our ascendants.

The debates led by Dra Lilliam Alvarez, Secretary of the Cuban Academy of Science, allowed for the discussion of current concepts and theories of gender issues, gender perspectives, motivating ideas and comments of the audience and it was a claim of all to look with the "violet glasses" the Cuban women problematics. The event, successfully fulfilled its objective by paving the way to showcase and raise visibility for women in the field of science, ultimately aiming to attract more young girls towards STEM disciplines. While recognizing the arduous path ahead, we are determined to navigate it and reap the benefits throughout the project's execution. By amplifying the personal narratives and journeys of female scientists, and confronting gender biases, harassment, violence, leadership disparities, and self-esteem challenges within the scientific realm, the event sets the stage for a transformative environment that supports and champions progress.

This, in turn, inspires young girls to pursue careers in STEM fields, identify their aspirations, and witness that it is attainable as others in their vicinity have already done. The event facilitated interactions with female scientists in the social sciences, teachers, young women, and girls, creating a ripple effect that resonates in their respective environments. The presence of decision-makers at the event allowed for the presentation of proposals and ideas aimed at empowering and shedding light on women in the field of science. In November 2023 also was organized a mid-term meeting that was considered an extremely important necessity: to speak and learn much more about the two focused topics: gender and STEM.



Poster of the meeting in November 2023

The project scheduled in 2024 had as a first activity the regular public one, close to the International Day of Women and Girls in Science (February 11 of each year).

This year our celebration was at the Institute of Cybernetics, Mathematics, and Physics. The theme this year was "All Doing Science". We had the presence of representatives of social actors and institutions: Cuban Academy of Science, Cuban Physical Society, Institute of Cybernetics, Mathematics, and Physics, Agency of Nuclear Energy and Advances Technologies, Institute of Literature and Linguistics, Pedagogical University, University College, Faculty of Physics of the University of Havana, journalists, etc. Our aims this time continue being:

- to visualize Women in STEM in Cuba
- to face the remarkable biases detected in our community
- to inspire girls with native and real role models to pursue STEM careers

The main purpose of the meeting was to reach out to more women and girls and to have a profound dialogue about the prejudices, stereotypes, obstacles, and challenges faced by women of science to perform their work and achieve the recognition that we deserve. The goals of the meeting were also focused on empowering women in science identifying, assuming, and overcoming our socially determined "weakness": invisibility, lack of leadership, psychological violence, harassment, and low self-confidence but considering our strengths, high capacity for organization, negotiation, and resilience.

In this opportunity, the announcement of the event reached a wider audience, including students at the high school of University College, specializing in basic science. It was a privilege that some of the young female participants had won international competitions on computing and astronomy; these girls belong to a project whose mentor is the Director of the Planetarium of Old Havana, Taymi Garcia Marichal. We also had the participation of teachers from the Pedagogical Institute of Havana who have tackled gender topics. We also had the presence of the leaders of a Project of Cuban Afro-descendant women in science that, without any doubt, has contributed to the enrichment of the debates.

The program for this edition of February 2024 counted with one plenary talk in the morning about Complexity of the feminism in the XXI century by Patricia Meringo Murga, from the Department of Social Anthropology and Culture (Universidad de Barcelona) and a discussion session after it. In the afternoon we had three talks:

- Transformando el paradigma energético de Cuba, by Dra Lidice Vaillant from Faculty of Physics, University of Havana.
- Maria Montesori más que una impronta en la Pedadogia, by Daniela Aliaga from National Botanic Garden.
- Mujeres en las ciencias del comportamiento animal, by Laura Azor Hernadez from Faculty of Biology, University of Havana.

The session was very sensitive, with speakers talking about their careers from a gender perspective and sharing their life experiences. Life stories were very inspiring for girls and also for young scientists. The experiences about combining maternity and career duties were very emotive.



Poster of the Workshop, February 2024

4. Final remarks

All these series of events have fulfilled our expectations. Each new call attracts more women, more girls that looking to define their vocations. The effect of these meetings is multiplicative, each time we increase our social network of women in STEM with young scientists and girls motivated to study sciences. Even when the route is sometimes difficult, this project is contributing to cover a space that is needed for our scientists and girls, to discuss their problematics, and their challenges and to look for laws, regulations, etc. that protect them from harassment and violence at the academy and universities.

On the other hand, it is important to make visible women with solid careers and to encourage them to work also in spreading their life stories to becoming role models for girls. Another suggestion targeted to universities is to explicitly include in the university and institutional rules a point related to gender harassment and violence and to also include Gender courses at the universities. All the actions have been covered by the press, with articles, and interviews, appearing in national and international press media and social media.



Aurora Perez and Elizabeth Rodriguez, the main organizers of the last celebration of 11 February 2024.



Congratulations on occasion of 11 of February, Juventud tecnica Journal

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About the Author:

Lilliam Alvarez Díaz, born 25 of December 1949, Cuban, graduated with a BSc in Physics, from Havana University, in 1971. MSc in Nuclear Physics, 1976. PhD Physics-Mathematics in Moscow, 1989. In 1986, she founded the Group of Numerical Analysis in the Institute of Cybernetics, Mathematics and Physics where she was also Deputy Director 1990-2002. In 1999 she became the official member of the Cuban delegation at the World Summit of Sciences in Budapest, especially participating in the issues of the importance of Basic Sciences and Women in Sciences. She was the National Director of Sciences of the Ministry of Sciences, Technology and Environment of Cuba between 2002-2010. In 2001, she was awarded the National Medal Carlos Finlay due to her contributions to the Cuban Sciences and was elected as a TWAS Fellow in 2008. She is the leader in the Iberoamerican Program of S&T, CYTED, and in the Network on Gender, Science, and Technology, as well as the Co-chair of the IANAS Program for Women of Sciences 2013-2017, contributing to the publication of two books on Women and Young women in sciences in the Americas. The focal point for the Surveys on the presence of Women in the Academies, in the IANAS Regional Survey for Latin America and the Caribbean, and the IAP World Survey. She is the author of a popular Book "Being woman in sciences or dying in the intent", Ser mujer científica o morir en el intento, Editorial ACADEMIA, La Habana, 2011. She has done more than 80 Seminars, Workshops, and Conferences in Applied Mathematics and has also given priority to Basic Sciences and Gender issues. Lilliam is the "soul" and a main activist in promoting Cuban Women in Sciences.

CAS
MEMORIAM TRIBUTE



IN REMEMBERANCE
OF
PROF. EMERITUS DR. WINSTON ANTHONY MELLOWES

DR. ROSHNIE A. DOON
SECRETARY, CAS REGIONAL EXECUTIVE.



Prof. Mellowes with members of the TTGPA Team
(Who's Who Trinidad and Tobago Business 2024).



Prof. Mellowes with colleagues of CASJ and Sekazi Mtingwa
(Chair, LAAAMP Executive Committee) at the
21st General Meeting and Conference of the Caribbean
Academy of Science (CAS), 2018,
(LAAAMP 2018).

On behalf of the Caribbean Academy of Sciences (CAS), we wish to continue to convey our heartfelt support and condolences to the family of one of our dearest members, the late Professor Emeritus Winston Mellowes.

We acknowledge and pay respect to him as he served as the President of the CAS Regional Executive Committee from 2002-2006 and 2016-2021, making him the longest-serving president of the academy since its inauguration in 1988. He continued to support CAS as Foreign Secretary until November 2023, before his passing.

His immeasurable contributions to the development and enhancement of academic institutions and scientific research within the Caribbean region have been exceptional, demonstrated by his sustained involvement with CAS and numerous other regional initiatives.

His exceptional teaching skills and servant leadership qualities made him stand out as someone who consistently placed the development and welfare of others first.

His legacy will live on through the countless lives he touched and the positive impact he made on the Caribbean region.

He is Gone
by David Harkins

You can shed tears that he is gone,
Or you can smile because he has lived,
You can close your eyes
and pray that he will come back,
Or you can open your eyes
and see all that he has left.

Your heart can be empty because you can't see him
Or you can be full of the love that you shared,
You can turn your back on tomorrow and live yesterday,
Or you can be happy for tomorrow because of yesterday.

You can remember him and only that he is gone,
Or you can cherish his memory and let it live on.
You can cry and close your mind,
be empty and turn your back,
Or you can do what he would want:
smile, open your eyes,
love and go on.





Prof. Mellowes with colleagues at the IChemE TTMG Kick-Off Event 2020
(The Vessel 2020)



Prof. Mellowes with NIHERST NASA Fellows and NIHERST President Sylvia Lalla
(NIHERST 2018)

References:

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SPOTLIGHT

CAS-REGIONAL ANNUAL INITIATIVES



SHOWCASE YOUR EXPERTISE

This is your opportunity to share your insights, knowledge, and experience with the Caribbean Academy of Sciences (CAS) Community.

Live Webinar Opportunity: January-December 2024, once per month.

Platform: Zoom Webinar

Background

The CAS was inaugurated in May 1988. It is the primary Academy for Sciences in the Caribbean. It is an independent, non-governmental body registered in the Republic of Trinidad & Tobago.

Its primary objective is to provide a forum for interchange among scientists on important issues related to the application of science and technology to development.

The CAS serves as a source of advice to regional, governmental and non-governmental organizations in scientific and technology matters.

Target Audience

All Academicians, Scientists, Researchers, Specialists, Practitioners, and Industry Leaders worldwide are invited and encouraged to submit webinar proposals for the various webinars that the CAS offers throughout the year.

We are accepting proposals on a rolling basis until the end of 2024. Interested presenters are asked to please submit a 300-word abstract of the paper being presented and author biography. Further information will be provided upon acceptance.

Please feel free to forward to colleagues who you feel would be interested in taking part.

CONTACT US NOW

For Enquiries and Proposal Submissions, please contact:

Prof. Mark Wuddivira:
Mark.Wuddivira@sta.uwi.edu

Dr. Roshnie Doon:
casexecutive2023@gmail.com

The Caribbean Academy of Sciences (CAS)



Call for Graduate Student Webinar Speakers

BACKGROUND

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TARGET AUDIENCE

All MSc. and PhD. students in STEM fields (worldwide) are invited to present and discuss their ongoing research to receive valuable feedback from Academicians, Scientists, and Industry Leaders.
Students are encouraged to submit a 300- word abstract and their biography.
We are accepting abstracts on a rolling basis until the end of 2024.
Please feel free to forward to students who maybe interested in taking part.

LIVE WEBINAR OPPORTUNITY:

January- December 2024, once per month.
Platform: Zoom

Contact us now:

For Enquiries and Abstract Submissions, please contact:

Prof. Mark Wuddivira:
Mark.Wuddivira@sta.uwi.edu

Dr. Roshnie Doon:
casexecutive2023@gmail.com



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Target Audience

All Academicians, Scientists, Researchers, Specialists, Practitioners, and Industry Leaders worldwide are invited and encouraged to submit workshop proposals for the various online workshops that the CAS is hosting throughout the year.
We are accepting workshop proposals on a rolling basis until the end of 2024. Interested participants are asked to please submit their proposal and author biography. Further information will be provided upon acceptance.

Please feel free to forward to colleagues who you feel would be interested in taking part.

Contact Information

For Enquiries and Proposal Submissions, please contact:

- **Prof. Mark Wuddivira: Mark.Wuddivira@sta.uwi.edu**
- **Dr. Roshnie Doon: casexecutive2023@gmail.com**



THE CARIBBEAN ACADEMY OF SCIENCES (CAS)

Call For Newsletter Articles

Call for Articles for the CAS Newsletter: 2024

BACKGROUND

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THE CAS NEWSLETTER

The Caribbean Academy of Sciences (CAS) Newsletter is one which is driven by its members from the Trinidad and Tobago, Guyana, Jamaica, Guadeloupe, Antigua and Barbuda, and Barbados Chapters. We rely on your expertise in the various areas and sub-categories of Science, Technology, Engineering, and Mathematics (STEM), to share the most updated and relevant information from around the world with the STEM community in the Caribbean.

COPYRIGHT

Articles submitted to The CAS Newsletter should be original contributions and should not be under consideration for any other publication at the same time.

AUTHOR GUIDELINES

- Articles must be 1.5 spaced, should be between 500 and 2500 words, and submitted as an MS Word file.
- An autobiographical note of 250 words of all authors and co-authors, as well as their full names, affiliations, and email addresses, must be included.
- The title and headings used within the article must be short and clearly defined.
- Figures should be submitted in its electronic form (jpg file with a dpi of 330) and be clearly labelled.
- References to other publications must be clearly cited using the APA reference style.
- Articles may be copyedited for clarity and style.

SUBMISSION PROCEDURE

To be considered, your article should be submitted to the Editor: Dr. Roshnie A. Doon, Secretary, Caribbean Academy of Sciences (CAS) Regional Executive, and the President of CAS Prof. Mark Wuddivira.

Prof. Mark Wuddivira: Mark.Wuddivira@sta.uwi.edu
Dr. Roshnie Doon: casexecutive2023@gmail.com

THE CARIBBEAN ACADEMY OF SCIENCES

Room 1 East, Block 13
Faculty of Engineering
The University of the West Indies
St. Augustine
Trinidad and Tobago

Tel: (868) 662-2002 Ext.84469
Fax (868) 662-1873
Email:
Mark.Wuddivira@sta.uwi.edu
casexecutive2023@gmail.com

MEMBERSHIP NOMINATION FORM

Our reference _____

Date _____

We wish to nominate

_____

(BLOCK LETTERS)

As an Ordinary Member / Associate / Life Member of the Caribbean Academy of Sciences (CAS)

Proposer	**Seconder**
Name _____ (BLOCK LETTERS)	_____ (BLOCK LETTERS)
Signature _____	_____

I accept this nomination _____
(Signature)

Address:_____

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_____

_____

E-mail_____

Tel (work) _____

Tel (mobile) _____

Please attach your curriculum vitae.

(Copies of this Form can be made as required)

CAS Executive:
President: Professor Mark Wuddivira; **Secretary:** Dr. Roshnie Doon; **Treasurer:** Dr. Jeffrey Smith
Foreign Secretary: Professor Raymond Jaggessar; **Public Relations Officer:** Dr. Marvadeen Singh-Wilmot

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THE CARIBBEAN ACADEMY OF SCIENCES (CAS)

NEWSLETTER