



THE CARIBBEAN ACADEMY OF SCIENCES

NEWSLETTER

NOVEMBER 2025 - VOLUME 8 ISSUE 2

CAS 24TH
BIENNIAL
CONFERENCE &
GENERAL
MEETING,
UWI CAVEHILL,
BARBADOS.

INTERAMERICAN
NETWORK OF
ACADEMIES OF
SCIENCES (IANAS),
GENERAL ASSEMBLY,
2025, MEXICO.

COP30: SCIENCE
ACADEMIES UNITED
FOR CLIMATE ACTION,
MANAUS, BRAZIL.

3RD COMMONWEALTH
CHEMISTRY
CONGRESS.

IEM RESEARCH
CLUSTER.

AMR INDEPENDENT
PANEL WORKSHOP,
LAGOS, NIGERIA.

CAS- ISC DIGITAL
JOURNEYS SNAPSHOT



PHOTO: PRANESH RAVI

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THE CARIBBEAN ACADEMY OF SCIENCES

NEWSLETTER

NOVEMBER 2025: VOLUME 8 ISSUE 2

ADDRESS

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

CONTACT INFORMATION

Website: <https://casregional.org/>

Email: casexecutive2023@gmail.com / caribbeanacademyofsciences.cas@gmail.com / secretary@casregional.org,
contact@casregional.org / president@casregional.org

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)
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- Prof. Raymond Jagessar (Foreign Secretary)

CONTRIBUTORS

- Prof. Mark Wuddivira
- Prof. Raymond Jagessar
- Dr. Roshnie Doon
- Dr. Andrea Sealy
- CAS-Barbados Chapter
- Dr. Andrea Goldson-Barnaby
- Ms. Yanique Black
- Prof. Kit Fai Pun
- Dr. Lisa Benjamin
- Dr. Albertha Joseph-Alexander
- Prof. Erley Montejó Rodríguez
- Prof. Lilliam Alvarez Diaz
- Dr. Ihosvanni González Duquesne

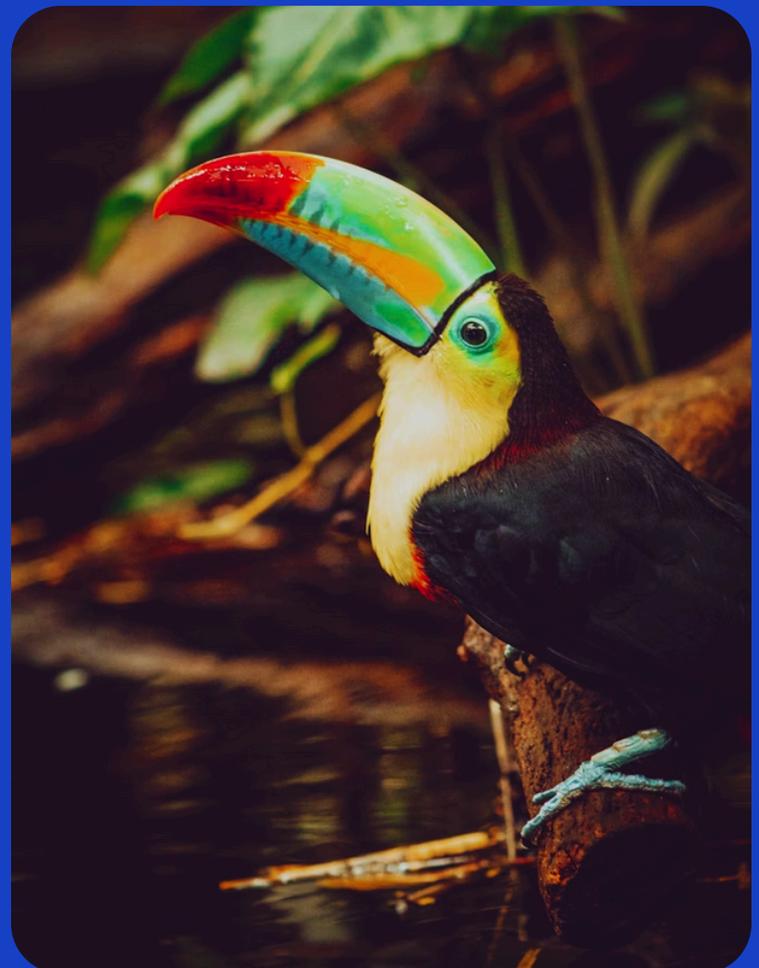


PHOTO: ANGÉLIE PAGE



LETTER FROM OUR PRESIDENT

Welcome!

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 (2023-2025)



PHOTO: ZDENEK MACHACEK

“...the Caribbean Academy of Sciences (CAS) 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

Connecting science, technology, and society through comprehensive research, innovative practices, and actionable strategies is essential for advancing the Sustainable Development Goals (SDGs) in the Caribbean. This multifaceted approach necessitates not only the integration of cutting-edge scientific knowledge and technological solutions but also a deep understanding of the specific societal needs and cultural contexts of Caribbean countries.

To effectively address pressing global challenges such as climate change, which poses a significant threat to coastal ecosystems and livelihoods, as well as pervasive issues like poverty and inequality that affect many communities, it is vital to foster collaboration among governments, academic institutions, and local communities.

With this in mind, the Caribbean Academy of Sciences (CAS) is pleased to highlight in Volume 8, Issue 2 of the CAS Newsletter, its upcoming 24th Biennial Conference and General Meeting under the theme "Bridging Science, Technology and Society: Advancing the SDGs through Research, Innovation, and Action," taking place from November 27th to 29th, 2025, at the School for Graduate Studies and Research, University of the West Indies (UWI), Cave Hill Campus, Barbados.

The CAS is passionately dedicated to fostering the growth of Science and Technology throughout the Caribbean. We're excited to champion innovative advancements and empower our region's development. In this issue, we are pleased to feature the representation of our members at several international and regional events, such as the:

- Commonwealth Chemistry Congress (CCC 2025) Stellenbosch, South Africa (May 2025).
- Biennial Meeting of the International Human Rights Network of Academies and Scholarly Societies (IHRN), Oslo, Norway (September 2025).
- Caribbean Week of Agriculture (CWA), Antigua & Barbuda (September-October 2025).
- CAS Trinidad and Tobago Annual General Meeting (AGM)- (October 2025).
- InterAmerican Network of Academies of Sciences (IANAS) General Assembly, Mexico City, Mexico (September 2025).



PHOTO: ZDENEK
MACHACEK

“... comprehensive research, innovative practices, and actionable strategies is essential for advancing the Sustainable Development Goals (SDGs) in the Caribbean...”

- The 20th National Congress on Science and Technology, APANAC-Panama City, Panama (September 2025).
- Inaugural Interdisciplinary Research Conference, Berbice, Guyana (June 2025).
- The 35th West Indies Agro-Economic Conference, Turkeyen, Guyana (July 2025).

With a focus on sustainability and community engagement, the CAS is dedicated to nurturing a vibrant ecosystem that promotes scientific discovery and technological advancement for all. The CAS continues to support the development of Science in Technology in the region, and as such has:

- Hosted the virtual seminar of Prof. Scicchitano at John Cabot University, Rome, Italy, during February 2025 on, Stop Worrying and Love the Robot: An Activity-Based Approach to Assess the Impact of Robotization on Employment Dynamics in Italy.
- Featured the article by Prof. Pun at the UWI, St. Augustine campus on Industrial Engineering and the Work of the Industrial Engineering and Management (IEM) research cluster.
- Featured the article by Dr. Benjam on the Lessons learned for AMR from her recently attended workshop in Lagos, Nigeria.
- Featured the article by Prof. Alvarez-Diaz and colleagues on the need for a Scientific Culture.

Kind regards,

Dr. Roshnie A. Doon

Editor, Caribbean Academy of Sciences (CAS) Newsletter,

Secretary, Caribbean Academy of Sciences (CAS) Regional (2023-2025)

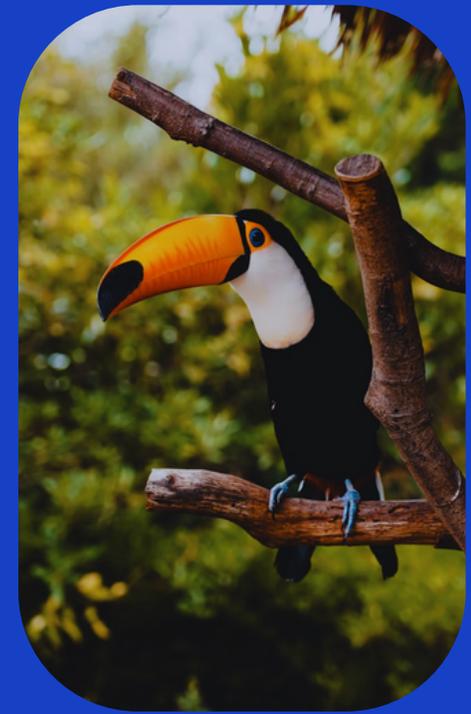


PHOTO: HAITAO DAI

“... nurturing a vibrant ecosystem that promotes scientific discovery and technological advancements...”



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Trinidad



Guyana



Jamaica



Barbados



Antigua



Guadeloupe

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- THE CARIBBEAN ACADEMY OF SCIENCES (CAS) KEY ACTIVITIES.
- CELEBRATING EXCELLENCE
- CAS GUEST SEMINAR SERIES-HIGHLIGHTS
- CAS STATEMENT ON HURRICANE MELISSA AND SOLIDARITY MESSAGES

CAS-BARBADOS

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CAS-JAMAICA

- JAMAICAN DELEGATES AT THE THIRD COMMONWEALTH CHEMISTRY CONGRESS

CAS-TRINIDAD & TOBAGO

- UWI SCIENTISTS SPEAK ABOUT INDUSTRIAL ENGINEERING AND THE WORK OF IEM RESEARCH CLUSTER: SOME SHARING.
- LESSONS LEARNED FOR AMR INDEPENDENT PANEL WORKSHOP IN LAGOS NIGERIA 28 & 29 APRIL 2025.
- INTERNATIONAL SCIENCE COUNCIL DIGITAL JOURNEYS SNAPSHOT.

CUBAN ACADEMY OF SCIENCES

- SCIENCE TEACHERS NEED MORE SCIENTIFIC CULTURE: PROPOSAL OF USEFUL STRATEGIES





THE CARIBBEAN ACADEMY OF SCIENCES (CAS)

CAS 24TH BIENNIAL
CONFERENCE 2025
HOST/COUNTRY CHAPTER:
BARBADOS

**CALL FOR
ABSTRACTS/PAPERS
/POSTERS**



**THEME: “BRIDGING SCIENCE, TECHNOLOGY AND
SOCIETY: ADVANCING THE SDGs
THROUGH RESEARCH, INNOVATION, AND ACTION”**

CONFERENCE SUB-THEMES

- Innovative Research for Sustainable and Resilient Futures (SDGs 2, 3, 6, 7, 13)
- Science, Policy and Social Impact (SDGs 1, 2, 3, 4, 10, 16)
- Youth, Education and Scientific Empowerment (SDG 4)
- Regional Solutions to Global Challenges (SDGs 3, 11, 12, 13, 17)
- Industry–Academia–Government Partnerships for Innovation (SDGs 8, 9, 17)

IMPORTANT DEADLINES

SUBMISSION OF ABSTRACTS:

AUGUST 31, 2025

NOTIFICATION/ACCEPTANCE OF ABSTRACTS:

SEPTEMBER 1–30, 2025

EARLY BIRD REGISTRATION

DEADLINE: OCTOBER 1, 2025

FINAL REGISTRATION DEADLINE:

NOVEMBER 15, 2025



DATES OF THE

CONFERENCE:
NOVEMBER 27–
29, 2025



CONTACT US:
Dr. Andrea Sealy
(President–CAS Barbados
chapter) asealy@cimh.edu.bb



Submit Abstracts to:
casbarbados@gmail.com



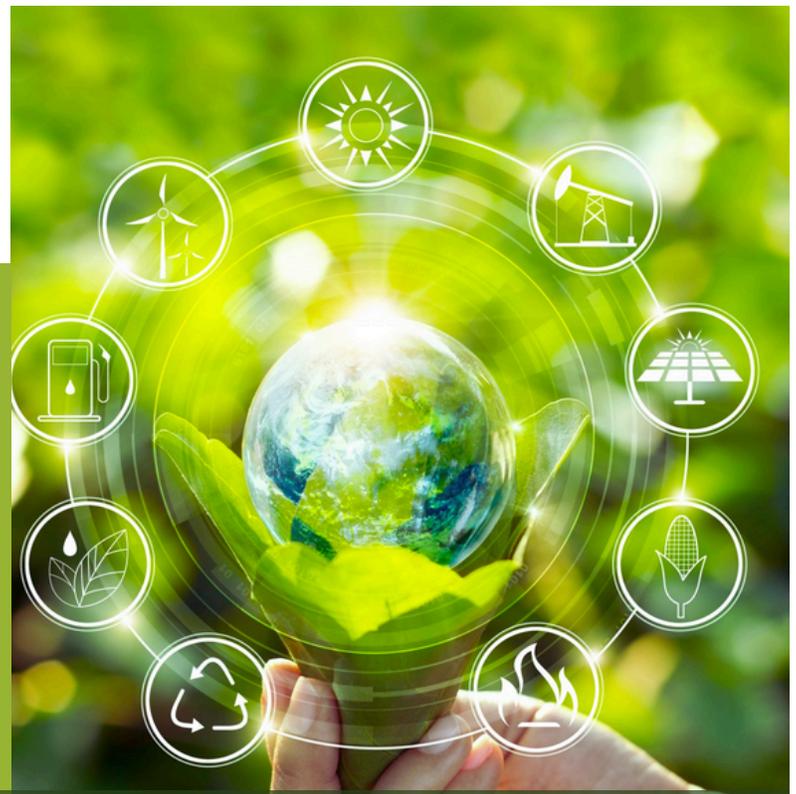
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THE CARIBBEAN ACADEMY OF SCIENCES (CAS)

CAS 24TH BIENNIAL
CONFERENCE 2025
HOST/COUNTRY CHAPTER:
BARBADOS

**EXTENDED CALL FOR
ABSTRACTS/PAPERS
/POSTERS**



**THEME: “BRIDGING SCIENCE, TECHNOLOGY AND
SOCIETY: ADVANCING THE SDGs
THROUGH RESEARCH, INNOVATION, AND ACTION”**

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- Industry–Academia–Government Partnerships for Innovation (SDGs 8, 9, 17)

IMPORTANT **EXTENDED** DEADLINES



SUBMISSION OF ABSTRACTS:

SEPTEMBER 22, 2025

**NOTIFICATION/ACCEPTANCE OF
ABSTRACTS:**

SEPTEMBER 22- OCTOBER 8, 2025



EARLY BIRD REGISTRATION

DEADLINE: OCTOBER 8, 2025

FINAL REGISTRATION DEADLINE:

NOVEMBER 15, 2025



DATES OF THE

CONFERENCE:

NOVEMBER 27-
29, 2025



CONTACT US:

Dr. Andrea Sealy
(President–CAS Barbados
chapter) asealy@cimh.edu.bb



Submit Abstracts to:
casbarbados@gmail.com



For more information visit:
<https://casregional.org/>



THE
CARIBBEAN
ACADEMY OF
SCIENCES
(CAS)

24th Biennial
Conference
2025
UWI, Cave Hill
Campus,
Barbados.



SPONSOR PROSPECTUS

T H E M E :

“Bridging Science, Technology
and Society: Advancing the
SDGs
through Research, Innovation,
and Action”



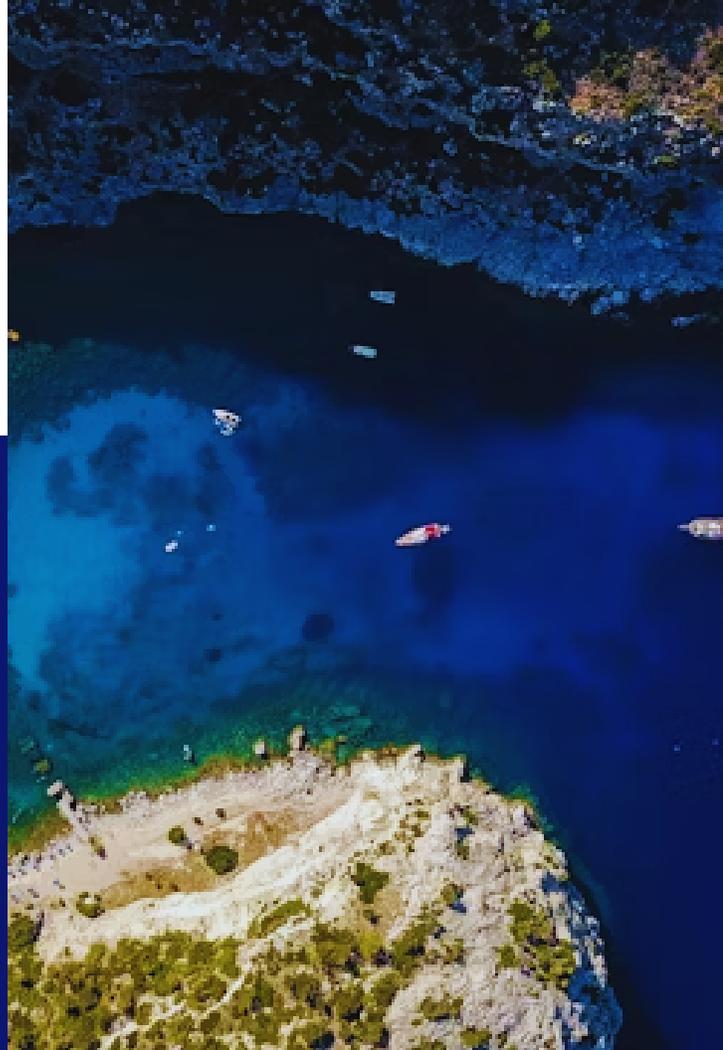
CONTACT US:
Dr. Andrea Sealy
(President-CAS Barbados
chapter) asealy@cimh.edu.bb



THE CARIBBEAN
ACADEMY OF
SCIENCES (CAS):
BARBADOS CHAPTER

About

CAS



“...The Caribbean Academy of Sciences (CAS) is dedicated to Advancing Scientific Research, Fostering Collaboration among Caribbean Scientists, and Promoting the Region’s Scientific Excellence.

We organize key events, such as conferences and workshops, to strengthen regional networks, advocate for science policy reform, and engage educational institutions and the public in the development of science and technology across the Caribbean.

Current membership stands at over 200 members, including scientists from the English-speaking Caribbean, Guadeloupe, Cuba, Guyana and Suriname...”

For more information visit: <https://casregional.org/>



THE CARIBBEAN
ACADEMY OF
SCIENCES (CAS):
BARBADOS CHAPTER

About

CAS24-2025



“...The CAS24-2025 Conference will be held on November 27th - 29th, 2025 and will be conducted in person.

This will enhance opportunities for connections among regional and international scientists, academics, researchers, experts, and practitioners.

In addition to parallel paper presentations and poster sessions, the event will include panel discussions and several opportunities for networking...”



THE CARIBBEAN
ACADEMY OF
SCIENCES (CAS):
BARBADOS CHAPTER

Theme:

“BRIDGING SCIENCE,
TECHNOLOGY AND SOCIETY:
ADVANCING THE SDGS
THROUGH RESEARCH,
INNOVATION, AND ACTION”



“...Bridging science, technology, and society through research, innovation, and action is crucial for advancing the Sustainable Development Goals (SDGs) in the Caribbean region.



This involves integrating scientific knowledge, technological solutions, and societal needs to address global challenges like climate change, poverty, and inequality...”



THE CARIBBEAN
ACADEMY OF
SCIENCES (CAS):
BARBADOS CHAPTER

Theme:

SUB-THEMES



While the conference will explore the associated issues in the Caribbean, examples of related topics/areas, with the associated Sustainable Development Goal (SDGs), are provided, but not limited to the list below:

- Innovative Research for Sustainable and Resilient Futures (SDGs 2, 3, 6, 7, 13)
- Science, Policy and Social Impact (SDGs 1, 2, 3, 4, 10, 16)
- Youth, Education and Scientific Empowerment (SDG 4)
- Regional Solutions to Global Challenges (SDGs 3, 11, 12, 13, 17)
- Industry-Academia-Government Partnerships for Innovation (SDGs 8, 9, 17)



THE CARIBBEAN
ACADEMY OF
SCIENCES (CAS):
BARBADOS CHAPTER



Sponsors:

CURRENT SUPPORTING
ORGANIZATIONS

Faculty of Science and Technology, UWI Cave Hill Campus

Centre for Biosecurity Studies, UWI Cave Hill Campus

Biocultural Education and Research Programme (BERP)

The Caribbean Institute for Meteorology and Hydrology (CIMH)





THE CARIBBEAN ACADEMY OF SCIENCES
(CAS):
BARBADOS CHAPTER

SPONSORSHIP PACKAGE DETAILS

Description	Gold 3000 USD	Silver 2000 USD	Bronze 1000 USD
Logo printed on conference promotional material	X	X	X
Acknowledgement during event promotion	X	X	X
Acknowledgement at the opening and closing ceremonies	X	X	X
Certificate of recognition	X	X	X
Booth (or table if preferred) at the conference	X		
Remarks at the Opening Ceremony	X		
Remarks at the Closing Ceremony	X		
Attendance of two (2) reps at the Welcome Cocktail	X		
Attendance of one (1) rep at the Welcome Cocktail		X	X
3 tickets for the Closing Dinner	X		
2 tickets for the Closing Dinner		X	
1 ticket for the Closing Dinner			X
Table at the Conference		X	X
Free conference attendance	X		



THE CARIBBEAN ACADEMY OF SCIENCES
(CAS):
BARBADOS CHAPTER

SPONSORSHIP NON-PACKAGE DETAILS

If your organization is unable to provide major sponsorship and is still willing to contribute to the Conference, you may select one of the following:

LEVELS	AMOUNT	DETAILS
A	800 USD	Recognition as a Sponsor of the Conference. Attendance of one (1) representative at the Welcome Cocktail. Table at the conference. Logo placed on conference website.
B	600 USD	Recognition as a Sponsor of the Conference. Attendance of one (1) representative at the Welcome Cocktail. Logo placed on conference website.
C	400 USD	Recognition as a Sponsor of the Conference. Logo placed on conference website
D	200 USD	Recognition as a Sponsor of the Conference

Items which may advertise your brand, such as lanyards, reusable bottles, notepads, pens, flash drives, or in-kind contributions are also welcomed.



THE CARIBBEAN
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SCIENCES (CAS):
BARBADOS CHAPTER



Contact:

CONFERENCE
INQUIRIES



CAS-Barbados Chapter:
casbarbados@gmail.com



CAS-Barbados Chapter:

President,
Dr. Andrea Sealy
cimh.asealy@gmail.com

SPOTLIGHT CAS-REGIONAL EXECUTIVE



THE CARIBBEAN ACADEMY OF SCIENCES (CAS) KEY ACTIVITIES

PROF. MARK WUDDIVIRA
PRESIDENT, CAS REGIONAL (2023-2025)

PLENARY SPEAKER AT THE COMMONWEALTH CHEMISTRY CONGRESS (CCC2025), STELLENBOSCH, SOUTH AFRICA, 11-14 MAY 2025

Professor Mark Wuddivira was a Plenary Speaker on the theme “Zero Hunger (SDG 2), Good Health and Well-being (SDG 3)” at the 3rd Commonwealth Chemistry Congress (CCC2025) in Protea by Marriott Hotel, Stellenbosch, South Africa, 11-14 May 2025. Professor Wuddivira's keynote was titled “The Multifunctional Role of Food and Agriculture in Eradicating Hunger and Enhancing Health and Well-Being in Climate-Sensitive Environments.”

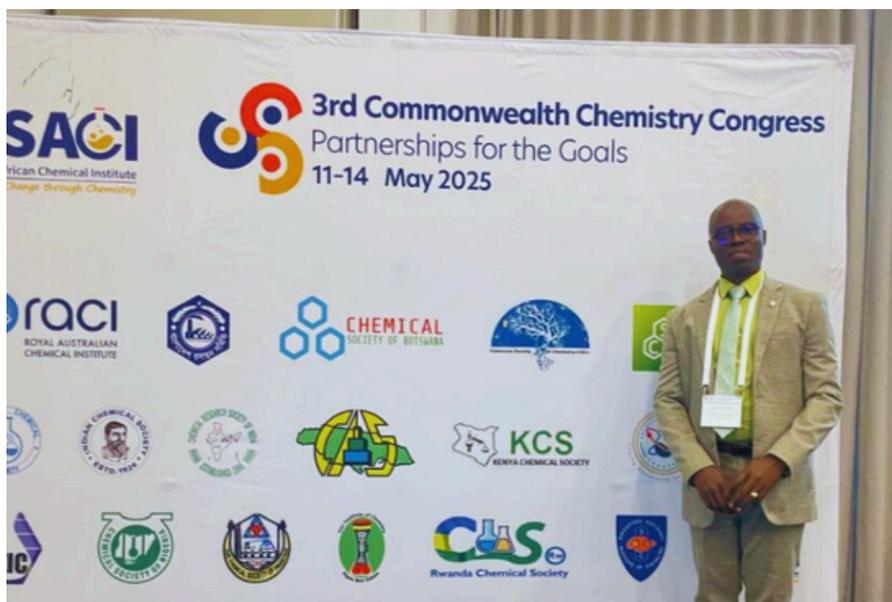
The Commonwealth is a uniquely diverse group of nations with shared values and a powerful voice. It represents all corners of the globe with a population of 2.5 billion and includes both advanced economies and developing countries. It is home to 12% of the world's researchers and accounts for around 10% of global research and development expenditure. With 1 in 3 people aged between 15 and 29 living in Commonwealth countries, the Commonwealth is set to play an ever more important role in the world's future – a future that will present many challenges where science can identify solutions.

Bringing together chemists from across the Commonwealth under the banner of equality for all, the Commonwealth Chemistry Congress promotes the United Nations Sustainable Development Goals (SDGs), strengthens scientific capacity, inspires and elevates the role of the chemical sciences to society and policymakers, and celebrates achievements in chemistry. Representatives from chemical societies across the Commonwealth joined high-level stakeholders from academia, industry and government in South Africa.

The Congress was hosted by the Commonwealth Chemistry Society Member, the South African Chemical Institute (SACI).



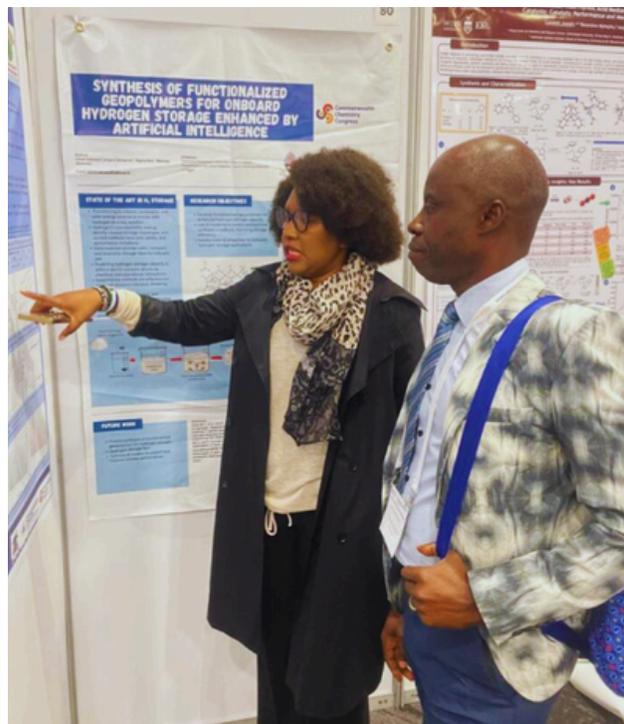
PROFESSOR MARK WUDDIVIRA ADDRESSING CCC 2025 ATTENDEES



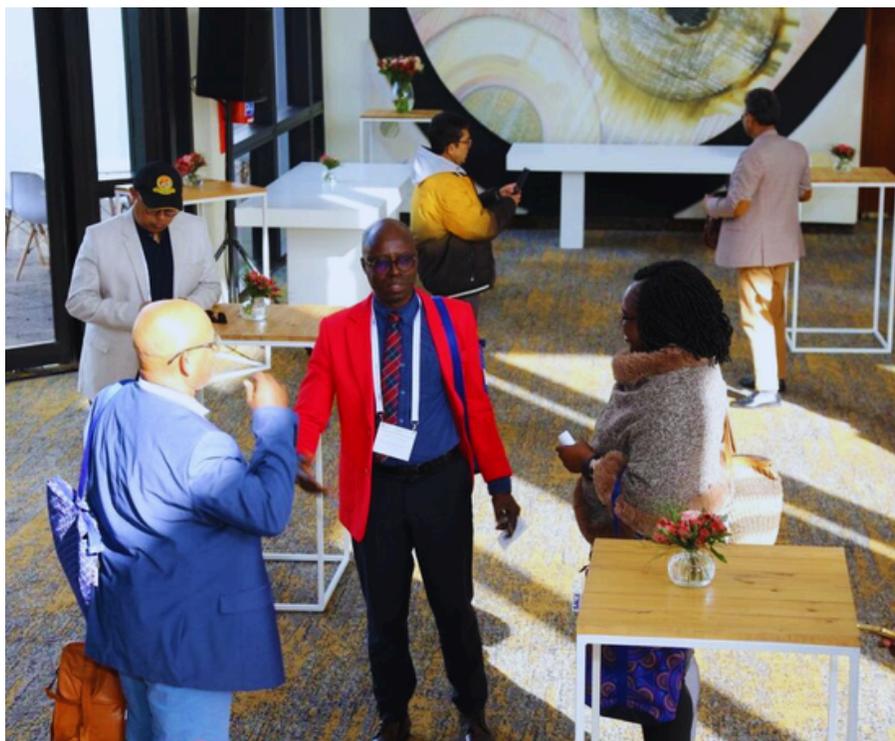
PROFESSOR WUDDIVIRA AT THE CCC 2025 CONGRESS



PLENARY KEYNOTE BY PROF. WUDDIVIRA AT CCC2025



PROF. WUDDIVIRA AT THE CCC2025 DISCUSSING WITH POSTER PRESENTER, DR. TEBELLO MAHAMO, SENIOR LECTURER IN CHEMISTRY, NATIONAL UNIVERSITY OF LESOTHO (NUL)



PROF. WUDDIVIRA, PROF. RAYMOND JAGESSAR AND OTHER DELEGATES AT THE CCC2025

PANELLIST AND SPEAKER AT 15TH BIENNIAL IHRN, OSLO, NORWAY, SEPTEMBER 9-11, 2025

Professor Wuddivira, Dean of the Faculty of Food and Agriculture at The University of the West Indies (UWI) and President of the Caribbean Academy of Sciences was a Panellist and Speaker at the 15th Biennial meeting of the International Human Rights Network of Academies and Scholarly Societies (IHRN), hosted by the Norwegian Academy of Science and Letters (DNVA) in Oslo, Norway, from September 9-11, 2025

Professor Wuddivira addressed the critical link between academic freedom and human rights. His presentation, titled “Resource Challenges Affecting Researchers’ Right to Produce Information for Evidence-based Development,” delved into the pressing issue of how resource constraints directly impede researchers' fundamental right to produce vital information. He argued that without the freedom and means to conduct research, the very foundation of evidence-based development is undermined, framing academic freedom not as a privileged ideal but as a core human right essential for societal progress.

There are tangible challenges faced by researchers, particularly in Small Island Developing States, including limited funding, inadequate infrastructure, and restricted access to global knowledge networks. These barriers stifle the creation of localized data and innovative solutions needed to tackle regional crises, from food security to climate resilience.

When researchers are starved of resources, it is not just academic exercise that is curtailed but fundamental right is violated and the capacity for sustainable development is hampered. True evidence-based policy cannot exist where researchers are deprived of the freedom and the tools to produce that evidence. This is a critical issue of equity and human rights that affects us all.”

His participation underscores The UWI and the Caribbean Academy of Sciences' commitment to championing the role of science and scholarship in building a more equitable and resilient future.

On Friday, 12th September, he visited the Norwegian University of Life Sciences, Faculty of Environment Sciences and Natural Resource Management, Ås-Norway, where he participated in strategic discussions on shared research interests and potential partnership opportunities. He was hosted by Professor Åsgeir R. Almås, Head of Section, Soil Resource and Natural Management and Water Sciences.



PROF. WUDDIVIRA AND OTHER PANELLIST AT THE IHRN BIENNIAL CONFERENCE 2025



PROF WUDDIVIRA AND PROF. ÅSGEIR R. ALMÅS DISCUSSING RESEARCH AND PARTNERSHIPS AT THE NORWEGIAN UNIVERSITY OF LIFE SCIENCES

CARIBBEAN WEEK OF AGRICULTURE 2025, ST. KITTS, SEPTEMBER 29 TO OCTOBER 3, 2025



PROF. WUDDIVIRA AND PROF. ÅSGEIR R. ALMÅS AT THE NORWEGIAN UNIVERSITY OF LIFE SCIENCES



PROFESSOR MARK WUDDIVIRA AND OTHER UWI DELEGATES



PROF. MARK WUDDIVIRA ADDRESSING THE 121ST SPECIAL MEETING OF THE COUNCIL FOR TRADE AND ECONOMIC DEVELOPMENT (COTED).

Returning from the 19th Caribbean Week of Agriculture (CWA), which took place in St Kitts and Nevis from September 29 to October 3, 2025, Professor Mark Wuddivira, Dean of the Faculty of Food and Agriculture at The University of the West Indies (The UWI) St. Augustine and President of the Caribbean Academy of Sciences, has issued a decisive call to action: invest in our people or risk our food security.

Leading a high-level delegation under the CWA theme “Sowing Change, Harvesting Resilience: Transforming Our Caribbean Food Systems for 2025 and Beyond,” Professor Wuddivira spearheaded strategic sessions that shaped the core agenda. The discussions critically addressed strengthening agricultural extension, igniting agri-entrepreneurship, leveraging agri-tourism, and advancing sustainable fisheries.

“True resilience is not just about withstanding shocks; it’s about innovating beyond them,” stated Professor Wuddivira. “This requires a fundamental shift from ad-hoc workshops and training to sustained investment in human capacity. We must equip the Caribbean with a skilled, research-driven workforce to break our dependence on food imports and build self-sufficiency.”

Our future food security hinges on the synergy of research, education, science, innovation, and decisive regional collaboration. The scientific community stands ready to lead this charge, transforming our agri-food systems for 2025 and beyond.”



PROF. MARK WUDDIVIRA JOINED OTHER CWA ATTENDEES ON A FIELD TRIP TO BAYFORD'S HATCHERY:



PROF. MARK WUDDIVIRA AT THE CWA OPENING CEREMONY

KEYNOTE SPEAKER AT THE ANNUAL GENERAL MEETING OF CAS-TRINIDAD AND TOBAGO CHAPTER 2025

Professor Mark Wuddivira was the Keynote Speaker at the virtual Annual General Meeting of CAS-Trinidad and Tobago Chapter 2025 on October 18, 2025. He spoke on the theme “Advancing Food Security Using Science, Technology and Science Academies” in commemoration of World Food Day 2025, themed “Hand in Hand for Better Food and a Better Future”.

According to UN FAO, which was celebrating its 80th anniversary, this theme emphasizes global cooperation between governments, organizations, and communities to transform food systems and build a more peaceful, sustainable, and food-secure future. It also highlights the need for collective action to ensure everyone has access to nutritious food.



PROF. WUDDIVIRA AT THE CAS TT AGM 2025

INTERAMERICAN NETWORK OF ACADEMIES OF SCIENCES (IANAS), GENERAL ASSEMBLY, 2025, MEXICO.

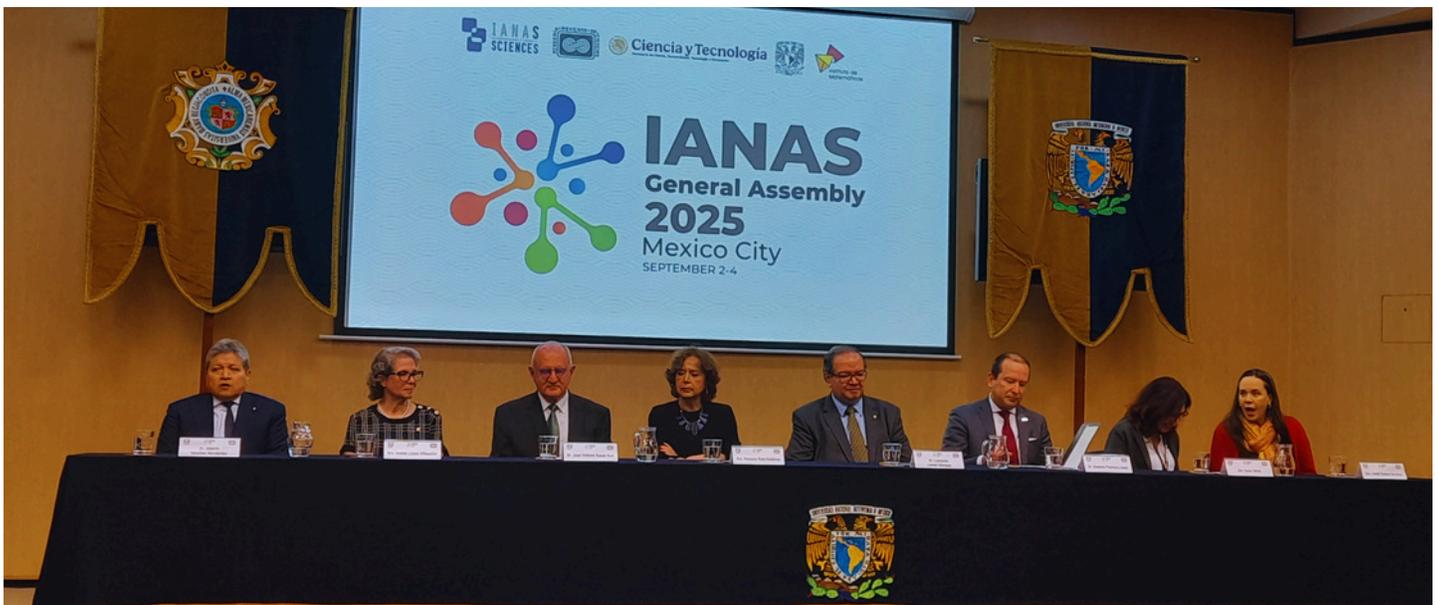
DR. ROSHNIE DOON
SECRETARY, CAS REGIONAL (2023-2025)

CAS SELECTED AS A MEMBER OF THE EXECUTIVE COMMITTEE OF THE IANAS.

On September 3-4, 2025, Dr. Roshnie Doon represented the Caribbean Academy of Sciences (CAS) at the Inter-American Network of Academies of Sciences (IANAS) General Assembly held in Mexico City.

The meeting included representatives from IANAS, as well as attendees from various academies of sciences across Latin America, including Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, the Dominican Republic, Ecuador, Uruguay, Guatemala, Honduras, Panama, Peru, Mexico, and Nicaragua.

Additionally, representatives from the National Academies of Sciences (NAS), the Royal Society of Canada, and the Latin American Academy of Sciences (ACAL) were present.



On the first day of the assembly, several distinguished lectures were delivered. Dr. Carabias presented on "The Sustainability of Development: The 21st Century's Challenge," while Dr. Salazar discussed "Leveraging Artificial Intelligence to Empower Migrants."

There were also reports from IANAS outlining major projects such as the Amazon Initiative, the Women for Science Programme, and a monthly lecture series titled "Women Talking about their Science."

Various annual and biennial awards were also highlighted, including the Young Scientist Research Award, the Anneke Levelt-Senger Prize, and the "Let's Discover Latin American Female Scientists" video contest for students.



During the recent elections held by the Latin American Network of Scientific Academies (IANAS) on Wednesday, 3rd September, 2025, the Caribbean Academy of Sciences was appointed as a member of the newly formed executive committee.

This election involved the selection of new co-chairs, the establishment of a secretariat, and the election of committee members focused on enhancing scientific collaboration and innovation across the region.

The inclusion of the Caribbean Academy of Sciences is expected to strengthen IANAS's mission by bringing diverse perspectives and expertise from the Caribbean region to pressing scientific and societal challenges faced by its member countries.



On the second day of the meeting, discussions included revisions to IANAS's bylaws and the consideration of new members. Several distinguished lectures were presented, covering topics such as "Safeguarding Water Quality to Ensure Sustainability" by Dr. Jimenez, "Commitment to Advancing Latin American Scientific Development through Cooperation" by Dr. Lee, and "Anxiety Crisis: What is Happening to Our Adolescents?" by Dr. Medina-Mora.



2025 IANAS General Assembly Participants

CAS JOINS WITH THE ASOCIACIÓN PANAMEÑA PARA EL AVANCE DE LA CIENCIA (APANAC) TO CELEBRATE ITS 40TH ANNIVERSARY WITH THE 20TH NATIONAL CONGRESS OF SCIENCE AND TECHNOLOGY.

During September 30, 2025 to October 03, 2025, Dr. Roshnie A. Doon delivered virtual greetings to the members of the Asociación Panameña para el Avance de la Ciencia (APANAC) on behalf of the Caribbean Academy of Sciences (CAS), and presented the APANAC Distinguished Service Award to Dr. José Calzada at the 20th National Congress on Science and Technology, APANAC held in Panama City.

This occasion marked a significant milestone, the 40th Anniversary of APANAC, celebrated alongside the 20th National Congress of Science and Technology. For four decades, APANAC has been instrumental in fortifying the scientific community not only in Panama but across the entire region, fostering collaboration, innovation, and research excellence. Through its initiatives and programs, APANAC has played a pivotal role in advancing scientific knowledge and addressing local and global challenges.

Excerpt of Dr. Doon's greetings is as follows:

"On behalf of the Caribbean Academy of Sciences, it is an honor to congratulate APANAC on the celebration of its 40th Anniversary and to present the APANAC Distinguished Service Award to Dr. José Calzada, in recognition of his exemplary career and his commitment to the advancement of regional science.

His leadership as Chair of the APANAC Congress in 2016 marked a milestone in consolidating our community.

As an active figure of the Gorgas Memorial Institute and the University of Panama, Dr. José Calzada has been a reference in research and training, inspiring new generations with rigor, generosity, and vision.

By granting this prestigious recognition, we honor Dr. José Calzada's remarkable legacy and the core values of excellence, service, and unwavering commitment that have driven APANAC for over four decades.

His leadership has not only shaped the organization but has also profoundly influenced the entire region, inspiring countless individuals to strive for greatness.

We celebrate his contributions and the enduring impact he has made in advancing our mission. Congratulations, Dr. José Calzada!"



Dr. José Calzada



CELEBRATING EXCELLENCE

PROF. RAYMOND JAGESSAR
FOREIGN SECRETARY, CAS REGIONAL.

- Jagessar, Raymond Participated as Part of a Panel discussion on “Open Access Journal across Commonwealth”, 3rd Commonwealth Chemistry Congress, Stellenbosch, South Africa, 12th -14th , May, 2025.
- Jagessar, Raymond. Climate-Smart and Sustainable Agriculture Practises in Guyana, University of Guyana, Berbice Campus, Inagural Interdisciplinary Research Conference, June 23rd - June, 26th , 2025.
- Jagessar, Raymond. “ Plant Extracts as an Alternative to Synthetic Medicines” University of Guyana, Berbice Campus, Inagural Interdisciplinary Research Conference, June 23rd - June, 26th , 2025.
- Jagessar, Raymond. “Resuscitation of Bio-gas Technology in Guyana, University of Guyana, Berbice Campus, Inagural Interdisciplinary Research Conference, June 23rd - June, 26th , 2025.
- Jagessar, Raymond, Jack, Chrisel. ‘The Use of Lemna minor (Duck Weed) Aqueous Plant Extract as a Natural Fertilizer in Comparison with Chemical Fertilizer on the Growth and Yield of Solanum lycopersicum (Tomato) Plants’ at the 35th West Indies, Agro Economic Conference, University of Guyana, Turkeyen Campus, 20th -25th , July, 2025. This conference was held in collaboration with the University of West Indies, St. Augustine Campus.
- Attended the Scientific Call for COP30: Science Academies United for Climate Action, from October 20 to 22, 2025, in Manaus, Brazil.



Prof. Raymond Jagessar

CELEBRATING EXCELLENCE

DR. ROSHNIE A. DOON
SECRETARY, CAS REGIONAL EXECUTIVE

- **Appointment to Associate Fellow, Harriet Tubman Institute, York University, Toronto, Canada.**



Dr. Roshnie A. Doon, was appointed as an associate fellow of the Harriet Tubman Institute at York University, Toronto, Canada.

Her key areas of interest include, Applied Econometrics, Labor Market Outcomes, Educational Mismatch, Gender and Wage Inequality, Economic Policy and Development, Higher Education Instruction, Economic and Social Implications of COVID-19, Environmental Justice and Climate Change, Social Policy, Migration, Industry 4.0.

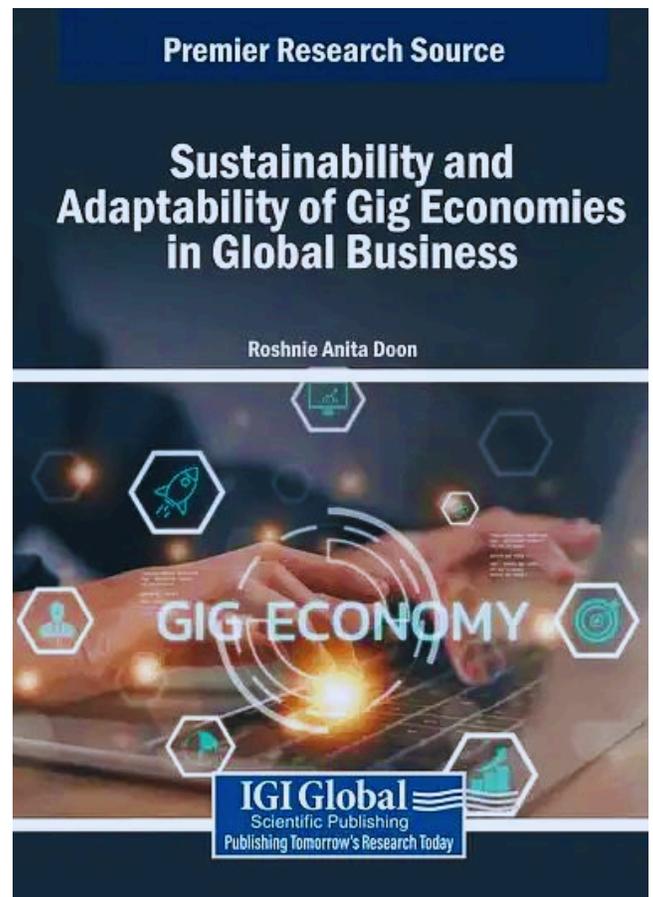
- **Publication of two edited book volumes on Gig Economies and Climate Action.**

Doon, Roshnie A. (2025). Sustainability and Adaptability of Gig Economies in Global Business. IGI Global Scientific Publishing, <https://doi.org/10.4018/979-8-3693-9385-7>

Gig economy has rapidly transformed the global business landscape, offering flexible work opportunities and creating innovations across industries.

As companies increasingly rely on freelance and contract-based labor, questions arise regarding sustainability and the adaptability of this economic model.

Exploring the long-term viability of gig economies and examining how businesses and workers can adapt to evolving market conditions, technological advancements, and policy frameworks may ensure a balanced, sustainable future.



Doon, Roshnie A. (2025). Transitioning to Climate Action, Multidisciplinary Digital Publishing Institute (MDPI), Basel, Switzerland. <https://doi.org/10.3390/books978-3-03897-875-6>



Given all insight from climate science, it has become obvious that the only viable path forward is transitioning to an economy that lives off our planet's regeneration, rather than its liquidation.

We now need to start becoming regenerative. Current trends, however, such as still increasing fossil fuel emissions, indicate that humanity is on the slowest, and ultimately most destructive and costliest, path.

Barriers to change may include financial interests, inadequate decision-making, or warped incentives. But there are also cognitive obstacles, such as a failure of climate communication to mobilize sufficient enthusiasm to solve the problem.

A vertical decorative bar on the right side of the page, composed of a series of colored squares in various colors including red, yellow, green, orange, pink, blue, and purple, arranged in a slightly irregular, stepped pattern.

Transitioning to **CLIMATE ACTION**

Roshnie A. Doon (Ed.)

Most communication overemphasizes personal sacrifice, failing to ignite individuals' and institutions' desire for change. Much communication, furthermore, has a moralistic undertone, or is at least perceived as finger-pointing, hardening the emotional resistance. This messaging is counterproductive: Climate action is not noble, but necessary.

Without rapid shifts in perception and public desire for decision-making that embraces our one-planet context, runaway climate change and biodiversity loss is inevitable.

- **Guest Speaker, Graduation Ceremony at the Torib Trace Presbyterian School, Trinidad & Tobago.**

Dr. Doon was invited to speak at the graduation ceremony of students at the Torib Trace Presbyterian School, Trinidad & Tobago on June 11th, 2025. Reflecting on her academic journey thus far, Dr. Doon had some inspirational words to share with the young graduates.

Some excerpts from Dr. Doon's speech are as follows:

"...My success so far has largely reflected the positive relationships I have with god, my parents, and myself. I have found that these relationships were essential in helping me to develop the skills necessary to lead, navigate failures, and achieve success even under the most challenging circumstances..."

“...The first is your Relationship with God:

- Possessing a robust faith can bring profound meaning and a sense of purpose, serving as a guiding light as you navigate the inevitable challenges and make significant decisions throughout your life.*
- Growing up in a multiethnic society like Trinidad and Tobago, where a diverse range of spiritual beliefs, practices, and worldviews coexist, has enabled me to accept my multifaceted nature, deepen my sense of awareness, enrich my spiritual journey, and, most importantly, cultivate tolerance, open-mindedness, acceptance, and respect for others.*
- As you continue your academic journey and pursue your dreams of success, keep in mind that God has also called you to embrace faithfulness. In moments of challenge and triumph alike, let this calling guide your actions and decisions, reminding you of the deeper purpose behind your efforts...”*

“...The second is your Relationship with Your Parents:

- My parents, who have always been my most steadfast pillars of support, embody a life grounded in simplicity and authenticity. Their nurturing presence has illuminated my path, infusing each moment with a profound warmth and wisdom that far surpasses anything I could have ever learned from any textbook.*
- Their unwavering love and guidance have shaped the very core of who I am, making me appreciate the beauty in everyday and the lessons that life offers through their example. I frequently find myself in awe of the incredible blessing bestowed upon me: the gift of having two of the most remarkable parents in the world. Their boundless support inspires me daily, reminding me of the beauty that familial bonds can bring to life.*



Dr. Roshnie A. Doon
Secretary, CAS Regional Executive (2023-2025)

- I am keenly aware that all my successes in life thus far have been the result of being blessed with such a positive relationship. They gave me the best gift I could ever ask for, belief. Their belief in my strength, and ability, before I fully understood it myself, is still the cornerstone of the enduring legacy that I seek to leave behind.*
- Having a close bond with your parents is essential for your academic success because it gives you a safe space for trust, security and support. This is critical because your journey in academia and indeed life will hardly ever be a straight one, as it will often be filled with unexpected twists and turns. ...”*



Graduating Class of 2025



“... *The third is your Relationship with Yourself:*

- *Self-respect and self-compassion are two fundamental pillars that I have found supported me greatly in achieving personal growth and success in various aspects of my academic life.*
- *Self-respect helps you recognize your worth and value. It encourages you to set healthy boundaries, make choices that align with your values, build confidence in your abilities, and establish realistic yet meaningful goals.*
- *While self-compassion teaches you to treat yourself with kindness during failures and difficulties that may eventually arise during your academic journey.*
- *Rather than criticizing yourself for these setbacks, self-compassion will encourage you to acknowledge your struggles without judgment and help you develop the fortitude to bounce back with resilience. ...”*
- *“... Pursue what sets your heart on fire and ignites your enthusiasm. When you align your work with your passions, success will follow naturally, providing fulfilment beyond mere accomplishments... “*

SPOTLIGHT CAS-GUEST SEMINAR SERIES



GUEST SEMINAR SERIES HIGHLIGHTS

DR. ROSHIE A. DOON
SECRETARY, CAS REGIONAL (2023-2025)

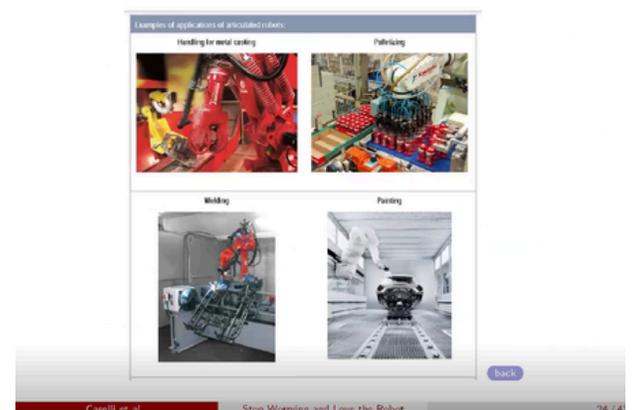
Stop Worrying and Love the Robot: An Activity-Based Approach to Assess the Impact of Robotization on Employment Dynamics.

The first CAS Guest Seminar of 2025 was held on the 21st February 2025, where Prof. Sergio Scicchitano (Chair of the Department of Economics at the John Cabot University, Rome, Italy; Fellow, Global Labor Organization, Senior Researcher, National Institute for the Analysis of Public Policies), spoke about an Activity-Based Approach to Assessing the Impact that Robotization may have on Employment Dynamics in Italy.

- Based on the article authored by: Caselli, M., Fracasso, A., Scicchitano, S., Traverso, S., & Tundis, E. 2021. Stop worrying and love the robot: An activity-based approach to assess the impact of robotization on employment dynamics," Prof. Scicchitano explained that the central aim behind the paper was to examine the impact that robotization has on the employment dynamics during 2011 and 2018.
- To achieve this aim, he explained that the authors introduced a novel-activity based methodology to assess this impact, which enabled them to move beyond the traditional industry-focused analyses by matching specific jobs tasks with robot applications.
- In particular, the study investigated the impact of the change in the local exposure to robots on the local employment dynamics.
- Even in light of exponential growth of industry 4.0 technologies, he highlighted that the connection between technological progress and the labor market has always been marked by issues surrounding automation, job replacement and job displacement.



Robots' applications: examples



- A look at the data on robotics, showed that in 2023, robot density was found to be most concentrated in the Republic of Korea, Singapore, China, and Germany, and to a lesser extent Italy.

- He pointed out that the literature for this particular study was found to be related to studies that looked at (1) the relationship between local employment dynamics and the variation in local exposure to robots at the endustry level, and (2) the occupations that may be vulnerable to automation and digitalization.

- He revealed that the study found that there was evidence of reinstatement effects among robot operators and other categories of occupations, some displacement effects for torso-intensive occupations, and no significant impacr on aggregate un/employment variations.

- In particular he indicated that out of 800 occupations under examination, only 123 occupations were exposed to robot applications. The only restriction being that, there could only be one type of robot per occupation.

- Specifically, the shares of local employment of robot operators grew more in areas where robot adoption was more intense. Quantitatively, a 1% increase in robot adoption led to an increase of 0.27 percentage points in the local share of robot operators.

- He mentioned that the findings were consistent with the view that increased investment in robots leads to a growth in workers who manage them and perform complementary activities, a phenomenon known as a reinstatement effect.

- Furthermore, he explained that an increase in robot exposure led to an increase in the share of weekly hours worked by robot operators relative to other workers, indicating an actual increase in full-time equivalent employee

Background

Technological progress and jobs: a recurring concern

- The effects of automation technologies on labor markets have been the subject of a long debate (Mokyr et al., 2015)
- With hindsight, the concerns about technological unemployment of the past were largely misplaced
- Yet, the potential scope of the new technologies (e.g. ICT, AI and robots) is unprecedented...
- ...and there are widespread concerns of job replacement effects and disruptions in local labour markets

Is this time different?

Caselli et al.

Stop Worrying and Love the Robot

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This paper

This work investigates the impact of the change in the local exposure to robots on the local employment dynamics in Italy over 2011-2018.

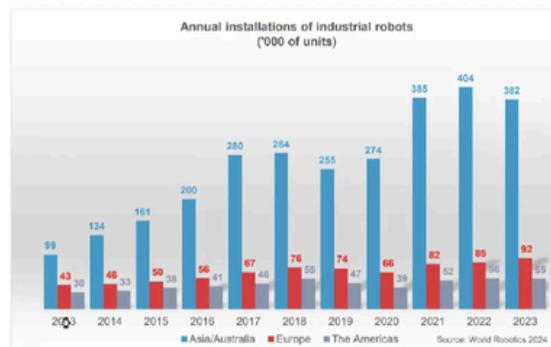
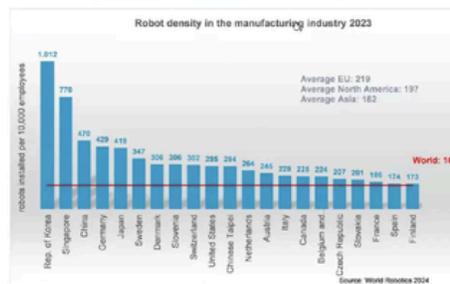
Contributions to the literature:

- M** A novel empirical strategy:
 - manual match between occupations' activities and robots' applications using INAPP ICP Survey (occupations at 5-digit level)
 - new activity-based measure of local exposure to robots: shift-share using the change in stock of national robots by application and the initial employment shares by occupation in the LLMA
 - analysis of the local employment dynamics of activity-based categories of occupations
- F** Evidence of reinstatement effects among robot operators and other categories of occupations, some displacement effects for torso-intensive occupations, and no significant impact on aggregate un/employment variations

Caselli et al.

Stop Worrying and Love the Robot

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- He also highlighted that there was no Significant Average Impact on Exposed Occupations or Aggregate Employment.
- The study did not detect significant changes in the employment dynamics of occupations deemed "exposed to robots". Exposed workers perform specific activities that can be matched with specific robot applications.
- In a similar manner, he also explained that there were, no statistically significant effects were found on aggregate labor market outcomes, such as local employment and unemployment rates. This aligns with the consensus that, in many countries, robot adoption has not yet resulted in major net aggregate effects.
- The study suggests that displacement effects of robots might be limited, or workers might be redirecting their efforts to non-automatable activities within their roles.
- Going into detail, he described that occupations characterized by activities requiring continuous and repeated torso movements (torso-intensive occupations) experienced a statistically significant negative effect on their employment share due to local robot exposure.
- This indicates a displacement effect where robots' arms replace workers in these physical activities

Local exposure to robots: a novel shift-share approach

- As no regional data on robot adoption are available, proxy measures are typically based on shift-share allocation of national stocks
- Existing works use industry-based shares, but this implies to assume that all occupations in a given industry are equally exposed. At odds with the activity-based matching procedure.

$$\Delta RX_i = \sum_a \mu_{a,i} \log \left(\frac{R_{a,t}}{L_a} \right) - \sum_a \mu_{a,i} \log \left(\frac{R_{a,t0}}{L_a} \right) \quad (1)$$

where:

- $R_{a,t}$ and $R_{a,t0}$ indicate the national stock of industrial robots in application a respectively at the end and at the beginning of the period,
- $\mu_{a,i}$ stands for the local share of workers performing activities mapped to application a in LLMA i in 2011,
- L_a represents the total number of workers (at the national level) employed in occupations mapped to robot application a in 2011.

Matching workers' tasks and robots' applications

Table: A new matching approach: Exposed and not exposed

5 digit	Occupation	Act 1	imp. freq.	Act 2	imp. freq.	Act 3	imp. freq.	IFR code	Type
61120	Stones-cutters	Cutting stones	4.5 4.4	Sanding stones	4.3 3.9	Polishing stones	4.1 3.8	190	Exposed
62211	Blacksmiths	Cutting metals	4.1 4.2	Assembling metal pieces	4 4.2	Welding and repairing metal pieces	3.9 3.9	190	Exposed
62120	Welders and flame cutters	Using tools	4.7 4.6	Welding pieces	4.6 4.6	Supervising machines	4.2 4.2	160	Exposed
62360	Inspector mechanics	Identifying malfunctions or anomalies	4 3.5	Performing tests on engines and machines	3.9 3.4	Reading technical designs	3.8 3.7		Not exposed
63450	Bookbinders and after print finishers	Binding books	3.9 3.7	Gluing materials	3.8 3.7	Folding paper	3.8 3.7		Not exposed
65321	Weavers	Working on looms	3.9 3.3	Replacing threads	3.8 3.4	Maintaining machinery and equipment	3.6 2.1		Not exposed

Notes: IFR robot application: 190 - processing, enduring changing; the robot leads the workpiece or the tool; material removal. 160 - Welding and soldering, 110 - Handling operations/ Machine tending, Act is the abbreviation of activity.

We identify 123 (out of 800) occupations exposed to particular robot applications. Caveat: one robot type per occupation, only.

Local exposure to robots: a novel shift-share approach

Due to the characteristics of the available dataset, the local share of workers employed in each occupation matched with the robot applications ($\mu_{a,i}$) is calculated as follows:

$$\mu_{a,i} = \sum_s \sum_o I_{oa} \theta_{os} \mu_{s,i} \quad (2)$$

where

- I_{oa} is an indicator function taking value 1 if occupation o is exposed to robot application a (and zero otherwise),
- θ_{os} is the share of workers employed in occupation o in the industry s (calculated at the national level based on RCFL data),
- $\mu_{s,i}$ is the ratio of workers employed in industry s over the residents (aged between 15 and 74) in local labour market area i (calculated based on 2011 Census data).

References

1. Scicchitano, S. (2025). Stop Worrying and Love the Robot: An Activity-Based Approach to Assess the Impact of Robotization on Employment Dynamics. (Seminar Session) CAS 2025 Guest Seminar Series). Caribbean Academy of Sciences (CAS), St. Augustine, Trinidad and Tobago.
2. Caselli, M., Fracasso, A., Scicchitano, S., Traverso, S., & Tundis, E. 2021. Stop worrying and love the robot: An activity-based approach to assess the impact of robotization on employment dynamics," GLO Discussion Paper Series 802, Global Labor Organization (GLO).

SPOTLIGHT CAS- STATEMENTS



THE CARIBBEAN ACADEMY OF SCIENCES (CAS): STATEMENT ON THE PASSING OF HURRICANE MELISSA AND ITS CATASTROPHIC IMPACT ON JAMAICA.

The Caribbean Academy of Sciences (CAS), the leading voice on science and technology for public good in the Caribbean region, expresses serious concern over the devastating effects of Hurricane Melissa, a record-breaking storm that struck the Northern Caribbean.

On October 28th, Hurricane Melissa, classified as a Category 5 hurricane with sustained winds of 185 mph and a central pressure of 892 millibars, made landfall in New Hope, Jamaica. The storm resulted in significant damage, necessitating the evacuation of hospitals, homes, and leading to extensive flooding across several parishes, such as Saint Elizabeth, and the coastal towns of Black River. As the days go by, the widespread devastation caused by Hurricane Melissa becomes increasingly evident. Many residents have been displaced, communities are isolated, and nearly 72% of the island is without electricity. Unfortunately, several fatalities have been reported because of this natural disaster.

The destruction of critical infrastructure, including roads, bridges, and utilities, coupled with the tragic loss of life, is profoundly unsettling for communities and families affected, particularly in Jamaica. The repercussions of such devastation extend far beyond mere physical destruction, as it undermines the very foundations of science and technology in the Caribbean region.

As schools remain closed and laboratories are damaged, the ability to foster innovation and nurture talent is severely impaired. It creates a ripple effect that hinders progress and economic development, leading to long-term implications for the region's resilience and future opportunities in Science and Technology.

The path to recovery from such extensive damage and loss is long and arduous, potentially spanning generations. Hurricane Melissa has presented significant challenges to our region. We commend the resilience and bravery of our citizens and emergency responders as we collectively strive towards recovery and rebuilding.

Science stands as the fulcrum of recovery and rebuilding, and is fundamental in ensuring the resilient future our vulnerable region yearns for.

STATEMENTS OF SOLIDARITY FOR JAMAICA

InterAmerican Network of Academies of Sciences (IANAS)



November 4, 2025

Prof. Mark Wuddivira
President
Caribbean Academy of Sciences (CAS)

Dear Prof. Mark Wuddivira,

As Co-Chairs of the Inter-American Network of Academies of Sciences (IANAS), we wish to express our deepest solidarity with the people of the Caribbean, and in particular with the people of Jamaica, in light of the catastrophic impact of Hurricane Melissa.

We have received with great concern the statement issued by the Caribbean Academy of Sciences (CAS) regarding the devastating consequences of this unprecedented storm. The record-breaking intensity and destructive force of Hurricane Melissa once again underscore the growing frequency and severity of extreme weather events driven by global climate change. These are not isolated natural phenomena, but manifestations of a rapidly warming planet, demanding urgent, science-based responses and international cooperation.

Our thoughts are with the communities that have lost loved ones, homes, and livelihoods. The destruction of essential infrastructure - roads, bridges, hospitals, schools, and laboratories - represents not only a humanitarian tragedy but also a setback to the scientific and technological capacities that underpin the sustainable development of the Caribbean region.

In the face of such devastation, science must stand as a cornerstone of recovery. It offers the evidence, tools, and innovation necessary to rebuild resiliently, ensuring that homes, infrastructure, and communities are reconstructed to better withstand future extreme events. We reaffirm IANAS's commitment to work alongside CAS and other partners in mobilizing scientific expertise and fostering regional collaboration for a safer, more sustainable, and climate-resilient Caribbean.

Please convey our heartfelt sympathy and unwavering support to all members of CAS and to the people of Jamaica during this difficult time.

With sincere regards and solidarity,

Karen B. Strier
IANAS Co-Chair

Alberto Gago
IANAS Co-Chair

IANAS Secretariat

Brazilian Academy of Sciences (ABC)

Rua Anfilóbio de Carvalho, 29 - 3rd Floor - Centro, Rio de Janeiro (RJ), Brasil

Tel.: +55 21 2391-7802 | Email: ianas.secretariat@abr.org.br | Website: www.ianas.org

National Academies of Sciences of Uruguay

Prof. Mark Widdivira
The University of West Indies
St. Augustine
Trinidad and Tobago

Dear Mark:

I write to you to express our solidarity with Jamaica and the whole Caribbean for this terrible tragedy of hurricane Melissa. Thank you for your kind message of the Caribbean Academy of Sciences and see the CAS is there to help in all that may be possible. The National Academy of Sciences of Uruguay wants to express our solidarity to our fellow Caribbean Academy of Sciences. If you need anything that may be under our scope, do not hesitate to write to me.

All the best,
Dr. Juan Cristina
President
National Academy of Sciences of Uruguay

SPOTLIGHT CAS-BARBADOS CHAPTER



THE CARIBBEAN ACADEMY OF SCIENCES (CAS) 24TH BIENNIAL CONFERENCE 2025 SCHOOL FOR GRADUATE STUDIES AND RESEARCH UWI CAVE HILL CAMPUS, BARBADOS 27TH-29TH NOVEMBER 2025

CAS BARBADOS CHAPTER

Theme: “Bridging Science, Technology and Society: Advancing the SDGs through Research, Innovation, and Action”
Call for Abstracts/Papers/Posters

Bridging science, technology, and society through research, innovation, and action is crucial for advancing the Sustainable Development Goals (SDGs) in the Caribbean region. This involves integrating scientific knowledge, technological solutions, and societal needs to address global challenges like climate change, poverty, and inequality.

The Caribbean Academy of Sciences is pleased to invite submissions for abstracts for the upcoming 24th Biennial Conference and General Meeting 2025. With the theme “Bridging Science, Technology and Society: Advancing the SDGs through Research, Innovation, and Action,” this conference is designed to foster and support knowledge creation, sharing, and collaboration focused on the fusion of scientific insights, technological innovations, and societal demands to tackle pressing issues within the region and beyond.

Scheduled for November 27th - 29th, 2025, the CAS24-2025 Conference will be conducted in person, enhancing opportunities for connections among scientists, academics, researchers, experts, and practitioners. In addition to parallel paper presentations and poster sessions, the event will include panel discussions and several opportunities for networking.

While the conference will explore the associated issues in the Caribbean, examples of related topics/areas, with the associated Sustainable Development Goal (SDGs), are provided but not limited to the list below:

- Innovative Research for Sustainable and Resilient Futures (SDGs 2, 3, 6, 7, 13)
- Science, Policy and Social Impact (SDGs 1, 2, 3, 4, 10, 16)
- Youth, Education and Scientific Empowerment (SDG 4)
- Regional Solutions to Global Challenges (SDGs 3, 11, 12, 13, 17)
- Industry-Academia-Government Partnerships for Innovation (SDGs 8, 9, 17)

Organiser:

The Caribbean Academy of Sciences (CAS)

Host Chapter:

The CAS Barbados Chapter

Supporting Organisations:

Faculty of Science and Technology, UWI Cave Hill Campus
Centre for Biosecurity Studies, UWI Cave Hill Campus
Biocultural Education and Research Programme (BERP)
The Caribbean Institute for Meteorology and Hydrology (CIMH)

Organising Committee:

Dr. Andrea Sealy, CAS-Barbados/CIMH
Dr. Leah Garner-O'Neale, CAS-Barbados/UWI Cave Hill
Dr. Sonia Peter, CAS-Barbados/BERP
Prof. David Yawson, CAS-Barbados/UWI Cave Hill
Prof. Mark Wuddivira, CAS Regional, UWI St. Augustine
Dr. Roshnie Doon, CAS Regional, UWI St. Augustine

Important Dates/Deadlines:

Deadline for Submission of Abstracts (extended): September 22, 2025

Notification/Acceptance of Abstracts: September 22 – October 8, 2025

Early Bird Registration deadline: October 8, 2025

Final registration deadline: November 15, 2025

Dates of the Conference: November 27-29, 2025

Original abstracts, papers and posters relevant to the Conference theme are invited. Abstracts, extended abstracts and full papers in English should be sent via e-mail to casbarbados@gmail.com. Abstract guidelines are at the end of this document. **Instructions for poster preparation will be sent in early September.**

Each submission will be reviewed for technical merit and content. Papers accepted for presentation will appear in the Conference Proceedings provided that at least one author registers for the conference.

Maximum length for each accepted paper in the Proceedings is 8 single-spaced pages. Strong papers would be recommended for a fast-track publication subject to peer review in *Tropical Agriculture* (ISSN 0041-3216), *The West Indian Journal of Engineering* (ISSN 0511-5728), *The Industrial Engineering and Management Journal* (ISSN:3006-810X) and the *Caribbean Journal of Mixed Methods Research* (ISSN: 0799-5962).

For updates, visit the CAS website: www.casregional.org and the conference website which is under construction (stay tuned for updates). Accommodation information will be sent in early September.

Registration Fees:

- CAS Members, participants and presenters: USD200 per person
- Other Non-members, delegates, participants and presenters: USD250 per person
- PG and UG Students (full time with proof): USD150 per person

Early Bird Fee structure (10% Discount) with payments made by October 1, 2025:

- CAS Members, participants and presenters: USD180 per person
- Other Non-members, delegates, participants and presenters: USD225 per person
- PG & UG Students (full time with proof): USD135 per person

For updates, visit the CAS website: www.casregional.org and the conference website which is under construction (stay tuned for updates).

For Conference Enquiries and Registration:

CAS Barbados Chapter, casbarbados@gmail.com

Dr. Andrea Sealy, CAS-Barbados President, cimh.asealy@gmail.com

Guidelines for Preparing an Abstract for the CAS-2025 Conference**I. Choosing a Category**

Pick the category which most closely describes your intended paper. We understand that some papers can fit into more than one category.

Category	General Description
Research Paper	This category covers papers which report on any type of research undertaken by the author(s). The research may involve the construction or testing of a model or framework, action research, testing of data, market research or surveys, empirical, scientific or clinical research.
Viewpoint	Any paper, where content is dependent on the author's opinion and interpretation, should be included in this category; this also includes journalistic pieces.
Technical Paper	Describes and evaluates technical products, processes or services.
Conceptual Paper	These papers will not be based on research but will develop and test hypotheses. The papers are likely to be discursive and will cover philosophical discussions and comparative studies of others' work and thinking.
Case Study	Describes actual interventions or experiences within organizations. They may well be subjective and will not generally report on research. A description of a legal case or a hypothetical case study used as a teaching exercise would also fit into this category.
General Review	This category covers those papers which provide an overview or historical examination of some concept, technique or phenomena. The papers are likely to be more descriptive or instructional ("how to" papers) than discursive.

II. Selecting Keywords

Supply **up to six keywords** for tagging the paper. Pick keywords that reflect the specificity of the intended paper. Avoid overarching terms like "Science" unless the paper discusses the topic with such a wide focus. Use the most common term for a concept. Do not make up new terms for an old concept. Try to think broadly: if the paper discusses the STEM applications in the energy sector, it may be worthwhile supplying the sector as a keyword. If an activity/research takes place in a particular country, include the country's name as a keyword.

III. Writing the Abstract

To produce an abstract, please complete the following fields about your intended paper. There are four fields which are obligatory (Purpose, Design, Findings and Value); the other two (Research limitations/ implications and Practical implications) may be omitted if they are not applicable to your paper.

Abstracts should contain **no more than 300 words**. Write concisely and clearly. The abstract should reflect only what would appear in the final paper.

Purpose of this Paper	What are the reason(s) for writing the paper or the aims of the research?
Design/Methodology/ Approach	How are the objectives achieved? Include the main method(s) used for the research. What is the approach to the topic and what is the theoretical or subject scope of the paper?
Findings	What was found in the course of the work? This will refer to analysis, discussion, or results.
Value/Originality of Paper	What is new in the paper? State the value of the paper and to whom.
Research Limitations / Implications (if applicable)	If research is reported in the paper, this section must be completed and should include suggestions for future research and any identified limitations in the research process.
Practical Implications (if applicable)	What outcomes and implications for practice, applications and consequences are identified? Not all papers will have practical implications but most will. What changes to practice should be made as a result of this research/paper?

SPOTLIGHT

CAS-JAMAICA (CASJ) CHAPTER



JAMAICAN DELEGATES AT THE THIRD COMMONWEALTH CHEMISTRY CONGRESS

MS. YANIQUE BLACK & DR. ANDREA GOLDSON-BARNABY,
UWI, MONA, JAMAICA.

Introduction

The Third Commonwealth Chemistry Congress (CCC2025) was held on May 11- 14, 2025, in South Africa at the Protea Hotel Stellenbosch and Conference Centre bringing together chemists from across the Commonwealth under the theme “Equality for All”. The conference was hosted by the South African Chemical Institute (SACI), a Commonwealth Chemistry Society Member. The Congress promoted the United Nations Sustainable Development Goals (SDGs) and aimed to showcase the innovative and cutting-edge work being accomplished by brilliant scientists/researchers. Chemical societies along with personnel from academia and the industry were well represented. The Congress featured experienced and knowledgeable speakers, interactive workshops, and panel discussions focused on providing solutions to challenges being faced by the chemical scientific community. The Congress primarily focused on early career chemists, with the aim of promoting career development, facilitating collaborative research and providing networking opportunities for sharing research outcomes. Early Career Chemists were given the opportunity to do a 3-minute oral flash presentation on their research work and dedicated poster sessions were scheduled and designed for fielding questions based on the information presented in the posters.

Jamaican delegates

Delegates representing the Caribbean Academy of Sciences Jamaica were Dr Marvadeen Singh-Wilmot, Dr. Raylee Dunkley, Dr. Zeyar Min and Ms Yanique Black. Dr. Singh-Wilmot a senior lecturer in The Department of Chemistry, The University of the West Indies (UWI), Mona, Jamaica, was a member of the organizing committee, presenter and panellist at the Congress. Dr Dunkley is the Chemistry Branch Manager at The Bureau of Standards Jamaica. A graduate of The UWI, Mona, Dr Dunkley’s research work involves the characterization of cassava starch. He was supervised by Dr Ian Thompson. He is also the Committee Chair for the ISO - International Organization for Standardization and Chairperson for the International ISO/TC 93 Starch committee. Dr Min is a Lecturer in Chemistry at the University of Technology, Jamaica (UTech, Ja), with extensive experience in crystal engineering of hybrid organic–inorganic frameworks. His research supervisor was Dr Singh-Wilmot. Dr Min was one of the recipients of the Early Career Chemist Award for Best Poster Presentation. His winning poster was entitled “Crystal Engineering of Lanthanide Metal-Organic Frameworks

(Ln-MOFs) as a Pathway to Sustainable Solutions.” Ms Black is graduate student in the MSc. Food and Agro-Processing Technology programme, Department of Chemistry, at The University of the West Indies, Mona. She holds a BSc in Microbiology from the same university and spent her early professional years conducting microbial analyses on food. She is currently employed as a food storage scientist which involves training food industry stakeholders and pest management professionals. Her research project involved the screening of select herbs and spices for the presence of pesticides utilizing gas chromatography mass spectrometry. Pesticides are chemical hazards which can impact the safety of consumers. From her work Ms Black was able to detect the presence of diazinon, an organophosphate in an imported sample of sage. Ms Black was supervised by Dr Raymond Reid a Senior analytical chemist and Dr Andrea Goldson-Barnaby, Senior Lecturer in The Department of Chemistry, The UWI.

Congress highlights

The Congress commenced with a welcome ceremony at the Endler Lecture Theatre at The Stellenbosch University on Sunday, May 11. The keynote address was delivered by Professor Kelly Chibale and was entitled “Chemistry as a Catalyst for Scientific Entrepreneurship towards Sustainable Development in Africa”. In his presentation, Prof. Chibale shed light on the role of chemistry in driving scientific entrepreneurship specifically in the area of drug discovery. The presentation underscored the need for cross-disciplinary collaboration, strengthening of local research capacity and using natural resources for innovation for disease prevention. A panel discussion on “Partnership for the Goals” highlighted the need for collaboration and maximising on networking opportunities for future partnership. LearnSci, one of the sponsors of the event, introduced their programmes which were solutions-based offerings especially for attendees who are in academia. The plenary session on Gender Equality and Reduced Inequalities explored strategies in addressing systemic inequalities and the promotion of social inclusion. The Congress was an avenue for the personal and professional growth and development of the delegates who were grateful for this wonderful opportunity and rewarding experience.



Jamaican Delegation

L-R: Raylee Dunkley, Yanique Black. Marvadeen Singh-Wilmot, Zeyar Min

SPOTLIGHT

CAS-TRINIDAD & TOBAGO (CAS-TT) CHAPTER



UWI SCIENTISTS SPEAK ABOUT INDUSTRIAL ENGINEERING AND THE WORK OF IEM RESEARCH CLUSTER: SOME SHARING

PROF. KIT FAI PUN
UWI, ST. AUGUSTINE, TRINIDAD & TOBAGO.

Abstract:

Science should be accessible to the public. Industrial Engineering (IE) is a specialised field that incorporates engineering science and management into improving efficiency and productivity in complex systems within and across different industries. Drawn upon the scholarly research work that was shared at the media series hosted by The University of the West Indies (UWI) in Trinidad and Tobago (T&T), this article* discusses the importance of Industrial Engineering and Management (IEM) and the need for expanding associated research and engaging industry-academic collaborations for resilient economic developments in T&T and other nations of the Caribbean.

Keywords: Industrial Engineering, IEM, R&D, resilient economic developments, Caribbean

1. Introduction

Engineering science is a broad discipline that encompasses many different scientific principles and associated mathematics that underlie engineering to solve problems and develop new technologies. Industrial Engineering (IE) is a field of engineering science focused on improving efficiency and productivity in complex systems [1]. Industrial engineers are the professionals trained as productivity and improvement specialists/scientists. Further, industrial engineering and management (IEM) contribute and build connections bridges between technology and business seamlessly to create optimise and create value and foster quality and productivity for organisations in today's dynamic business environment.

According to the United States (US) Bureau of Labour Statistics, employment of industrial engineers is projected to grow 12 percent from 2022 to 2032, much faster than the average for all occupations [2]. The IE discipline and associated degrees/qualifications are known to the employment market in the US and other countries, despite that many employers in the Caribbean are unaware of recruiting IE professionals, causing unusual lagging of respective job offers/choices on their employment markets [3,4]. This would have affected the competitiveness of these organisations and respective nations. Are Industrial Engineers given the contribution roles to play in the Caribbean? Considering the recovery in investments across different sectors due to recent disruptions in the global supply chain caused by the COVID-19 pandemic, the Ukraine/Russian war amongst others, there is a need to recognise the importance of recruiting Industrial Engineers, IE professionals/scientists and their contributions to the competitiveness of organisations, the industry and the society at large.

The IE descipline contributes to the body of engineering science that should be accessible to the public. In such context, IEM research is the research cluster striving within the IE domain that builds upon cross-disciplinary domains and areas. It promotes university-industry partnership, engagements and collaborations contributing to the developments of nations and the region.

The University of the West Indies (UWI), St Augustine Campus, launched its “UWI Scientists Speak” Series in 2024/2025. This article introduces the IE’s education route and professional pathway and relates the IE evolution to the establishment of the IEM’s Group and Research Cluster at UWI. It then summarises the Group’s/Cluster’s work, research and development (R&D) and accomplishments over the past two decades. It concludes by underlining the need for and the importance of expanding IEM in R&D and enabling industry-academic collaborations for resilient economic developments in nations of the region.

2. What is Industrial Engineering and Management (IEM)?

Industrial Engineering is a branch of engineering worldwide and a common degree programme in many countries of the world. IE is concerned with “the design, improvement and installation of integrated systems of people, materials, information, equipment and energy” [1]. It draws upon the principles and methods of engineering analysis and synthesis, as well as mathematics, physical, and social sciences, to specify, predict, and evaluate the results to be obtained from such systems. Other engineering disciplines apply skills to very specific areas, while IE works in a variety of businesses.

In Trinidad and Tobago (T&T), the UWI-Faculty of Engineering, St Augustine, has offered its undergraduate IE programme and associated taught master’s programmes, as well as research degrees in MPhil/PhD since the 1970s. Figure 1 shows the IE Pathway offered at UWI for the Caribbean region.

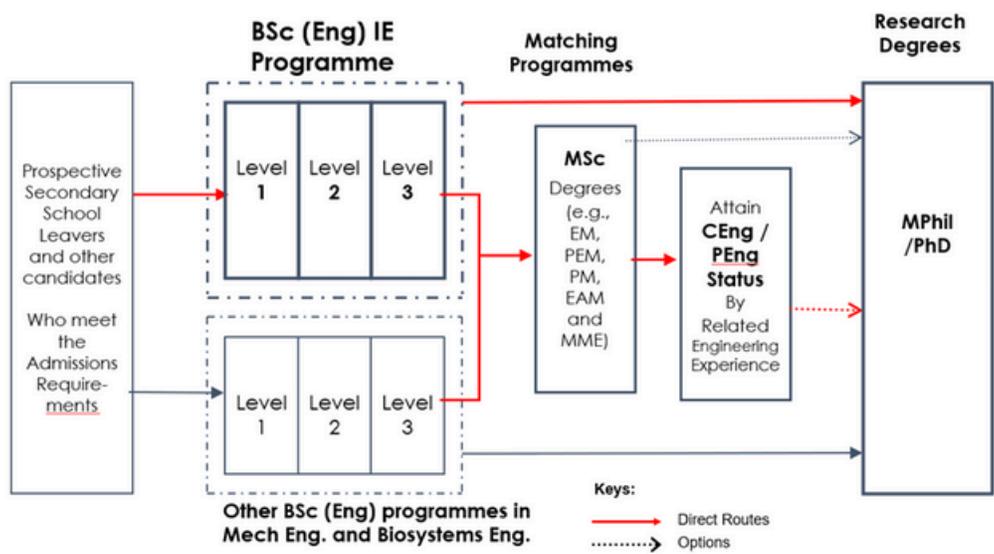


Figure 1. The IE Pathway at UWI

3. The IEM Group and Research Cluster Evolving

Over the years, there has been a steady evolution of IE practices and IEM Research, moving from a focus on traditional techniques (like Work Measurement and Management Science) to incorporating such areas as Artificial Intelligence, Business Process Reengineering, Circular Economy Framework, Climate Change Adaptation, Data Analytics and Mining, Innovation and Technology Transfer, Integrated Management Systems, Lean Operations, Quality and Industry 4.0, Resilient Organisations, Strategy Formulation, and Performance Measurement.

In 2003, the UWI-IEM Research Group originated at the Department of Mechanical and Manufacturing Engineering (DMME), UWI, St Augustine Campus, Trinidad and Tobago. Over the past two decades, it has fostered research collaborations within the Faculty of Engineering and across disciplines [5,6]. The Cluster/Group has organised events, engaged in several research projects and generated substantial research outputs and publications. In 2023, the Group has joined the UWI-Research Cluster Initiative and become one of its six starting clusters amongst others at the university. Figure 2 depicts the milestones of the IEM research work performed by the Group/Cluster.

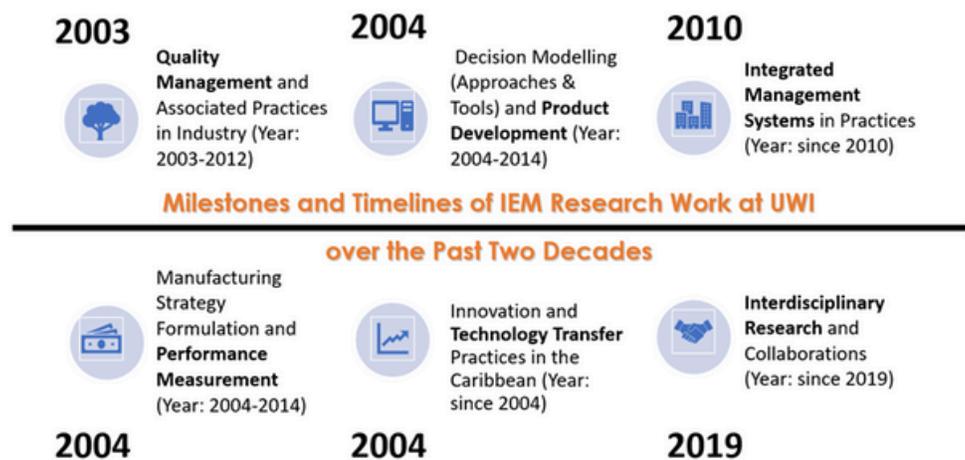


Figure 2. The UWI-IEM Research Milestone

The IEM Group/Cluster promotes the use of multi-disciplinary, mixed-methods, and hybrid approaches to address complex issues and diverse challenges facing the nations. This opens R&D agendas while facilitates academia-industry partnerships and collaborations [5,6]. Some past and ongoing IEM research projects initiated include:

1) Innovation and Technology Transfer (ITT) Practices in the Caribbean - This work explores innovative approaches to bridge the gaps between the region's current ITT practices and international best practices. It strives to develop appropriate means of addressing the region's unique requirements and ensuring fitness for the purposes of a collaborative framework.

2) Integrated (Knowledge, Quality, Value, Environmental and Safety) Management Systems in Practices - This aims to identify the determinants/factors and develop an Integrated Management Capability (IMC) model and associated systems that would facilitate the operations among organisations and across sectors in Trinidad and Tobago.

3) Project Productivity (PP) Modelling and Analysis - This work is geared towards identifying the factors affecting the project performance of industrial enterprises in the country. The findings would contribute to the development of 1) a lean metrics-based PP model geared towards preventing delays in the project execution phase and 2) a practitioners' implementation guide for use in the industry.

4) Multi-disciplinary Research and Collaborations - This encompasses areas of societal improvement and environmental sustainability, focusing on climate change adaptation, Industry 4.0, resilience organisation, and value management applications.

Over the years, The IEM Group/Cluster and core members have published more than 400 publications with thousands of citations, and completed several research projects funded by UWI and other overseas universities and governments. With reference to the '2025 One UWI Research Clusters' Meeting that was hosted by the UWI-School for Graduate Studies and Research (SGSR) in February 2025, IEM Research Cluster has updated its work and presented a 2-year plan [5], three main agendas were excerpted below:

·Agenda 1: Extending Professional Training Partnership – To extend the collaborations with professional bodies and learned societies, particularly in areas of professional training.

·Agenda 2: Promoting Inter-Disciplinary Research for the SDGs – To nurture research culture and promote research (including supervisions of graduates' work), and engage in inter-disciplinary R&D projects.

·Agenda 3: Hosting/Organising the Sixth IEM Conference 2026 at UWI. In keeping with the past five IEM Conferences in 2006, 2010, 2014, 2018 and 2022, the theme of the 2026 Conference is "Achieving the UN Sustainable Development Goals in the Caribbean with Interdisciplinary Efforts".

4. Benefits/Importance of Engaging in IEM R&D and Collaborations

Being a research arm at UWI, IEM is cross-disciplinary blending methodological boundaries and cross-fertilisation across regions and themes. Fostering IEM in R&D will distinguish the region from others and make a difference, whether through improving productivity, mitigating climate change, gaining leadership in business operations and markets, or simply empowering organisations and improving people's lives. Through striving to build industry-academic collaborations, engaging organisations and institutions can continually evaluate market/society needs, stakeholders/people requirements, and nation's/region's sustainability goals.

By strengthening partnerships between academia and industry, it can provide IE professionals, scientists, researchers, and industry practitioners with unique insights and informed paths for R&D, which would be results- and output-driven. This also enables a unique knowledge exchange between partners and other collaborators. Both industry and academia stand to benefit from long-term collaboration. This can foster synergy in terms of access to facilities, equipment, and expertise from both sides of industry and academia. Albert Einstein once said, 'The whole of science is nothing more than a refinement of everyday thinking'. T&T and other nations can facilitate industrial upgrading, and society will benefit from a stream of R&D and collaborations with IEM applications for resilient economic development.

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* - *The "UWI Scientists Speak" is the media series of several interviews that showcased some research work done by scholars and reserachers at the University of the West Indies (UWI), St. Augustine Campus. This article was a refined version of an article, "Unlocking Knowledge of Industrial Engineering and Management" that has been printed on the Sunday Guardian of 18th May 2025 (p.12-13). The article abstracted the contents of one of the series' interviews undertaken by the local media, CNC3, on 17th May 2025.*

About the Author

Kit Fai Pun is presently the Professor of Industrial Engineering and Management (IEM) and the Coordinator of the IEM Research Cluster/Group at The UWI, St. Augustine, T&T. He is a Registered Professional Engineer in Australia, Europe, Hong Kong, and T&T. Professor Pun received the National Hummingbird Gold Award and the SCIE's Nationally Recognised Industrial Engineer Award in 2022 and the 2023 Most Outstanding Faculty Researcher – UWI-Faculty of Engineering. He is also the Immediate Past President of the CAS Trinidad and Tobago Chapter (Email: KitFai.Pun@sta.uwi.edu).

LESSONS LEARNED FOR AMR INDEPENDENT PANEL WORKSHOP IN LAGOS NIGERIA 28 & 29 APRIL 2025

DR. LISA BENJAMIN
UWI, ST. AUGUSTINE, TRINIDAD & TOBAGO.

Antimicrobial resistance (AMR) is often described as a silent epidemic. A global response has been launched to address this problem which has the potential to render useless several medications that are currently used to treat infections in humans and animals. I accepted an invitation through the CAS to attend a Boston University School of Law, Nigerian Academy of Science, the National Academy of Medicine (USA) and Wellcome facilitated meeting, the Lessons Learned for AMR Independent Panel, on 28 & 29 April 2025, in Lagos, Nigeria.

This Lagos meeting was one of several stakeholder sessions held subsequent to the invitation extended to the Quadripartite (World Health Organisation, Food and Agriculture Organisation, World Organisation for Animal Health and United Nations Environmental Programme) in September 2024 at the high-level meeting of the United Nations General Assembly that was held in New York to establish and begin operations of an Independent Panel on Evidence for Action Against Antimicrobial Resistance (IPEA). It is expected that the IPEA will “facilitate the generation and use of multi-sectoral, scientific evidence to support Member States in efforts to tackle antimicrobial resistance, making use of existing resources and avoiding duplication of on-going efforts.”

At the meeting in Lagos, participants reviewed lessons learnt from the compositions of past independent panels and, our feedback was included in documents which will be used to inform decision-making by the Quadripartite regarding the structure of the IPEA. The IPEA is important as it can impact the importance placed on AMR globally and the resources that are made available to combat this threat. Participating in this meeting allowed the Caribbean another opportunity to contribute to shaping the course and intensity of the global effort to counteract AMR. The Quadripartite aims to launch the IPEA in December of 2025.

About the author

Dr Lisa Benjamin is a Lecturer in Veterinary Public Health and Epidemiology at the SVM. Her research interests include livestock adaptations to climate change, zoonotic disease surveillance, food safety and antimicrobial resistance.

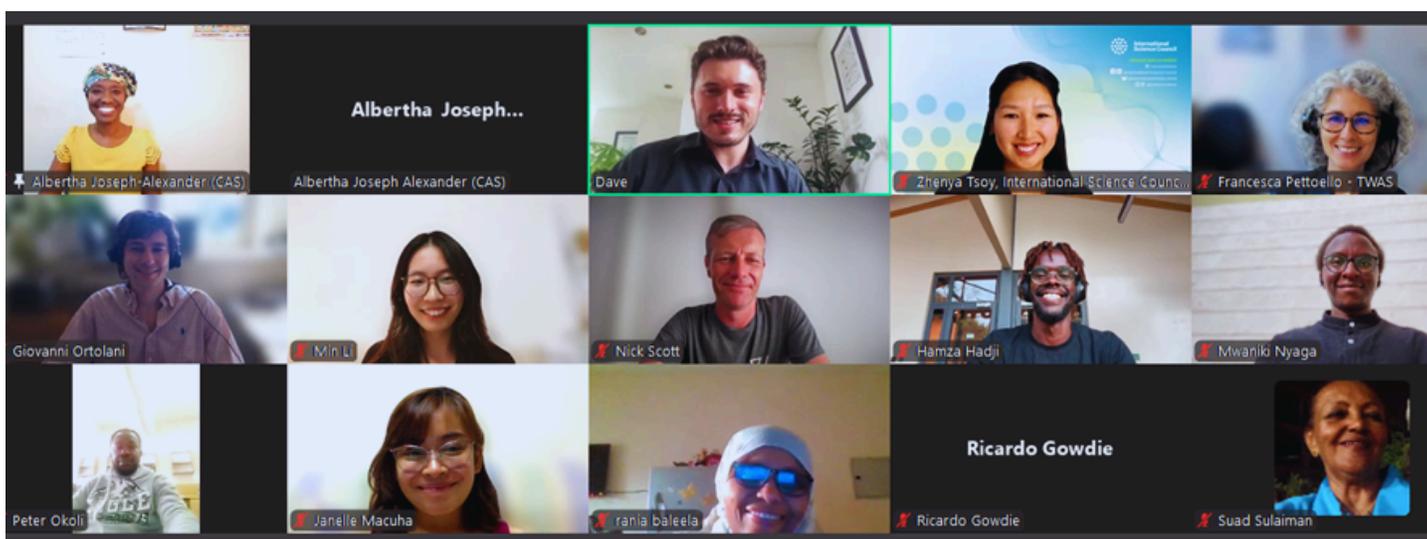
INTERNATIONAL SCIENCE COUNCIL DIGITAL JOURNEYS SNAPSHOT

DR. ALBERTHA JOSEPH-ALEXANDER
PRESIDENT, CAS-TT

The Caribbean Academy of Sciences (CAS) has been a member of the International Science Council (ISC) since 1993.

At the start of 2022 the ISC began exploring the process of 'Empowering science organizations to harness their digital potential and navigate transformative change'

In 2024, as part of this process, ISC launched a call for applications, for members who desired to unlock their digital journey. CAS applied and we were one of the eleven members selected to participate in the ISC Digital Journeys Cohort 1, from January to June 2025. Our academy's key representative was Dr. Albertha Joseph-Alexander.



The academy received:

- digital maturity assessment with an accompanying framework for implementation of a digital action plan.
- training in the following areas:
 - designing solutions with users in mind;
 - working in experimental cycles;
 - digital science communication and storytelling;
 - FAIR data principles for scientific data management;
 - developing a digital strategy and vision.
- one-on-one coaching to provide guidance on some additional digital needs for the website, including creation of online forms and email-newsletter integration.

As a result of the last training session, a draft digital vision for the Caribbean Academy Sciences was prepared by Dr. Joseph-Alexander.

“To become a science academy that uses digital tools to optimize internal processes, improve public awareness and increase societal impact.”

Since digital transformation is a journey it has been proposed that a working group/sub-committee be formed to continue the process by building upon the tools and resources received.

The desire is that, on this sub-committee, there will be at least one representative from each of the country chapters working along with Dr. Joseph-Alexander to drive the digital transformation of the Caribbean Academy of Sciences.



SCIENCE TEACHERS NEED MORE SCIENTIFIC CULTURE: PROPOSAL OF USEFUL STRATEGIES

ERLEY MONTEJO RODRÍGUEZ(1), LILLIAM ALVAREZ DIAZ(2), IHOSVANNI GONZÁLEZ DUQUESNE(3)
(1,3) UNIVERSIDAD DE CIENCIAS PEDAGÓGICAS “ENRIQUE JOSE VARONA”
(2) ACADEMIA DE CIENCIAS DE CUBA, MERIT MEMBER- RETIRED

Abstract

Promoting scientific culture is essential to contribute to an informed and critical society.

Future science teachers play an important role in this process by fostering skills such as critical thinking and problem-solving in their students. In corresponding with this, the following scientific problem was formulated:

How can we contribute to professional training to promote the scientific culture of students in the Bachelor of Education program?

The research aimed to propose a pedagogical strategy that contributes to professional training for the promotion of scientific culture among students of the Science programs at the Enrique Jose Varona University of Pedagogical Sciences (UCPEJV).

Various methods were used, from the general dialectical materialist, to theoretical ones such as: historical-logical, analytical-synthetic, systemic-structural, transition from the abstract to the concrete, empirical ones such as: observation, survey, interview, user consultation, as well as: triangulation, analysis of graphs and tables, among others.

The proposed strategy was based on social needs in relation to scientific culture and the teacher training process, which includes stages and culminates in evaluation.

The positive results outcomes from the assessment of the application of the pedagogical strategy, based on the research methods employed in professional training for promoting the scientific culture of students, particularly those in the Bachelor's program in Chemical Education.

The results presented are part of the PhD thesis of the first author, Erley Montejo.

Key words: Science teaching, Scientific culture, pedagogical strategy

I. Introduction

The higher education is one of the social sectors for promoting scientific culture. Therefore, Cuban universities, as social institutions responsible for training future professionals, must preserve, develop, and promote this culture in correspondence with the demands of the times. That's why, changes are required in the design, management, execution, and evaluation of their processes, in order to train a competent, an ethically honest professionals with a solid scientific and humanistic foundation.

In this regard, an updated vision of professional training and its research component is needed to identify opportunities and challenges for fostering a greater scientific culture among current and future science teachers, and thus fostering collaboration and the necessary exchange of knowledge, concepts, and points of view among different intellectuals, academics, scientists from different fields of knowledge and institutions.

This analysis also requires not only universities to be integrated into the community's social context, so that ideas and criteria can be exchanged regarding the changes taking place in current educational contexts, but also in which community actors play an important role in social and individual transformation.

From this criteria, the importance of updating the pedagogical professional development process in general are inferred and, in particular, for this research, which focuses on the training of Chemistry teachers. This is a topic of current debate for the pedagogical community, which recognizes the value of rethinking pedagogical practice as a platform for transforming the objectives, content, methods, media, and organizational forms of the process.

The main point is to take into consideration the proposed pedagogical strategy to solving problems in the educational reality related to the promotion of scientific culture, by means of specific teaching tasks where the contributions of contemporary science offer an ideal framework for understanding the world around us based on the decision-making to be at the center of the teaching-learning process.

Cuba is currently undergoing a profound transformation at all levels of society. Two fundamental premises are:

Sustainable development and the knowledge society.

From an educational perspective, the training of students to become future science teachers should be oriented toward understanding the complexity of the world in which they live, through the integrated action of socializing agents such as: academia, family, community, organizations, the environment, the media, informal groups, and, in particular, the school.

In this regard, many authors from different fields have reflected:

- Develop a cultural orientation to science education.
- Consider individual qualities during the science teaching-learning process to develop the personality and thinking.
- Reflect during the teaching-learning process the fundamental characteristics of contemporary research activity.
- Develop a scientific culture that is useful for students' lives, enabling them to interpret everyday phenomena and behave as conscious, supportive, active, creative, and critical citizens.
- Develop capacities to assess science that allow them to recognize it as a human enterprise in continuous construction, with permanent advances and setbacks, within the framework of a social context.

The following shortcomings were detected in the current curriculum in Cuba, called Plan E:

- Limited educational activities with students to promote science communication through chemistry content.
- Need for social development of science in community settings.
- Insufficient connection between chemistry content and the use of information and communication technology to facilitate understanding of current scientific and technological developments.
- Limited community linked to direct science work through informal way to promote scientific culture.

The mentioned problematic situation reveals the lack of coherence between professional training and the need to promote scientific culture, both in the teaching process and in community settings. Thus, the following scientific problem was formulated:

How can professional training contribute to promoting the scientific culture of science teacher training students?

To propose a pedagogical strategy that contributes to the professional development to promote the scientific culture of students, particularly those in Chemical Education, at the Enrique José Varona University of Pedagogical Sciences.

II. Vocational training as a basis for promoting scientific culture

The future teachers should not only master the disciplinary content, but should also be able to:

- Design laboratory practices that promote inquiry and problem-solving of greater complexity.
- Create spaces where students can share ideas and build knowledge together.
- Integrate digital tools to enrich learning experiences and facilitate access to information.
- Encourage research on the teaching and learning of chemistry to generate new knowledge and improve teaching practices.
- Training future teachers in the design and implementation of activities that promote scientific literacy.

III. Culture: a necessary debate

In the 21st century, no one questions the cultural nature of science, the fact that it is a social construct, or its importance in everyday life. It determines events, participatory environments, innovations, and is the basis for development and social well-being. Therefore, scientific knowledge must now be an essential part of people's knowledge, enabling them to interpret reality rationally and freely, helping them form free opinions, and providing them with arguments for decision-making.

At the same time, a scientific and technological culture allows people to perform, develop, appropriate technologies, and act as competitive individuals in these times.

-Culture

The extensive historical analysis of the subject leads to taking into account the most relevant aspects of science within culture; the features of culture must be viewed from: - the material (determinant) and the spiritual (human essence), recognizing both forms of social production, therefore, it is: a human manifestation marked by the particularity of the specific historical and geographical conditions and contexts, a product of the activity and the way of producing them and being socially accepted, a set of ideological relationships determined by material culture.

- Material culture: Technique, production experiences, and other material values.
 - Spiritual culture: Results in the fields of science, art and literature, philosophy and morality, as well as education.
- In a more specific sense, we can speak of manifestations of culture in specific areas of activity: political, religious, artistic, literary, scientific, environmental, economic, etc.

In Cuba, the preservation and development of culture takes on special characteristics. The meaning of the term "general culture" is closely related to the educational objectives and purposes of education.

IV. Scientific culture, dissemination, democratization of science

-Scientific culture

Based on the specific definition of scientific culture and the reflections on the concept of culture, it can be deduced that scientific culture is a key component of general culture and, to form it, it must be a strategic task of policies, education, and the media.

The school, based on its formal education, is called to develop it through all the alternatives at its disposal, formal and curricular spaces, within the classroom, and in the teaching-learning process.

V. How is scientific culture promoted in educational processes?

Education is understood as a social phenomenon and the existence of different social actors who promote scientific culture is recognized.

- Scientists: They research in different areas of knowledge and produce scientific knowledge, objects, technologies, and methodologies that are incorporated into everyday life.
- Journalists: They transmit scientific knowledge to the general public.
- Science communicators: They work in science dissemination institutions and make scientific knowledge accessible to the interested public.
- Science teachers: They promote the scientific literacy and scientific culture in students.
- Individuals who transmit their scientific knowledge from one generation to another one.
- Educational, academic, and science dissemination institutions.

The acquisition of knowledge is organized, first during formal education, in the classroom, then through research, assignments, and research projects, and through extracurricular and extracurricular activities, which should foster a scientific culture in students.

Extracurricular activities, or non-formal and informal education, should also be designed; they should not be spontaneous, using already known methods and methods such as competitions, interest groups, scientific-student societies, science cafes, and science festivals (which, incidentally, are not adequately encouraged, consolidated, or widespread).

Furthermore, this work strongly emphasizes the need for community outreach activities and interactive science in communities.

The lack of scientific literacy among teachers, professionals, technicians, and leaders is a social problem that has present and future repercussions for all citizens.

A scientifically and technologically literate population will have a greater capacity to understand problems, contribute solutions and recommendations, express opinions, and participate in decision-making. This contributes to progress and to the economic and social development of individuals, families, communities, towns, municipalities, or countries.

Non-formal education is a means of acquiring knowledge through a diverse set of activities organized outside the formal system, designed to address the identifiable learning needs of particular subgroups, whether children, youth, or adults.

Non-formal education programs play an important role in transmitting knowledge and skills and promoting attitudes conducive to development. The underlying characteristics of this type of education help explain some of the social functions and foster positive attitudes and behaviors toward them.

Furthermore, community work plays a very important role in non-formal education. Through it, community education is acquired, immersed in a process of transformation. It requires the participation of its members, preparing them to solve problems, working with their potential, educating them to use resources rationally, and consolidating and strengthening feelings of belonging and identity.

The main results obtained from the study variable are reflected below, through the implementation of a survey of students and an interview with teachers.

The surveys and interviews conducted provided important foundations for the proposal of a new pedagogical strategy, which will be discussed later.

It is evident that the planning of activities in their professional training is insufficient to enable them to demonstrate their knowledge of scientific and technological advances in everyday life, and that they are unable to relate scientific concepts to the promotion of scientific culture.

The analyses carried out made it possible to identify the potentialities of the object of study, including the curricular flexibility of Study Plan E in Cuba to incorporate updated content through different types of curricula and the existence of Chemistry content to promote scientific culture.

The following deficiencies were detected:

- ü The current Professional Model of the E Curriculum does not explicitly address the training of chemistry teachers to promote scientific culture in their education.

- ü The curriculum is poorly responsive to addressing the promotion of scientific culture, as is the level of knowledge of students and teachers.

- ü The application of knowledge and skills to promote scientific culture through curricular and extracurricular activities that integrate substantive processes is insufficient.

- ü Despite teachers' knowledge and mastery of science topics, they still show insufficient preparation to promote scientific culture through their classes, nor do they receive training in these topics through courses or other forms of professional development.

VIII. Proposal for a pedagogical strategy

As a central result of this research, a pedagogical strategy was proposed to promote greater scientific culture in the training process of science teachers.

In the research, the selected principle constitutes part of the pedagogical strategy. This principle is also revealed in the elements and stages that characterize it, serving as its foundation. The following principle has been determined:

- The principle of promoting scientific culture allows for a cross-cutting interdisciplinary approach across academic, professional, research, and extension components, enabling the design of flexible and up-to-date subject programs that include teaching-learning methodologies integrating chemistry with other natural, exact, social, and humanistic sciences.

- For training students as promoters of scientific culture, fostering the development of scientific skills and critical reflection in students, promoting participatory learning. To include scientific culture as a line of research and establish alliances with scientific institutions, research centers, educational centers, research projects, companies and mass organizations, and media outlets that contribute to the dissemination and promotion of science, and to create spaces for science and technology outreach activities.

This strategy consists of four fundamental stages:

Diagnosis, Planning, Execution and Evaluation.

This Program gave us excellent experience in its adaptation and implementation and consists of four topics:

- Introduction to the study of science and technology in society around the world and in Cuba.

- Scientific culture, scientific education, and their influence on the teaching-learning process, PEA in Chemistry

- Didactical alternative to promote the scientific culture from the teaching-learning process of Chemistry.

- Alternatives for the promotion of scientific culture in non-formal and informal settings.

This result of the first author's doctoral thesis is highly relevant, proposing the program for the optional course "Scientific Education and Culture," which represents a transcendental step in the professional training of students to become teachers in science programs.

This course would be of great interest to all Pedagogical Schools, Teacher Training Schools, and Introductory Pedagogical Schools, both in Cuba and throughout our Latin American and Caribbean region.

Conclusions

- The study of the theoretical and methodological foundations of the object of study made it possible to reveal the transversality between professional training for the promotion of scientific culture among students of the Bachelor's Degree in Chemical Education at the Enrique José Varona University of Pedagogical Sciences.
- The definitions and concepts of categories necessary for the foundation of the proposal, through current specialized literature, allowed us to gather all the scientifically elements to the proposal and implementation of a new pedagogical strategy for the introduction of scientific culture in science programs, and in particular, chemistry.
- The design of measurement instruments such as surveys, interviews, and their assessment and quantitative analysis provided novel results for this research.
- The results of the diagnosis of the current state of the "scientific culture" variable allowed us to identify the main shortcomings of students in the Bachelor's Degree in Chemical Education and revealed several significant gaps in the promotion of scientific culture.
- The results obtained from the survey show that future chemistry teachers experience difficulties in various key aspects of their professional performance.
- The new pedagogical strategy is relevant and feasible because it allows students to identify scientific literacy as a need for science teachers and to appropriate, reproduce, transform, and propose various alternatives for its promotion in school.
- A close connection with scientific and science dissemination institutions is identified as a need, unifying the system of educational influences based on the critical appropriation of the material and spiritual values resulting from contemporary scientific and technological development.
- The assessment of the results achieved and the practical experiences carried out also demonstrated the active participation of the students as promoters of scientific culture, which proves the scientific confirmation of the conceived pedagogical strategy, together with the methodological procedure.

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SPOTLIGHT

CAS-REGIONAL ANNUAL INITIATIVES



PREVIOUS CAS NEWSLETTERS:

Newsletter Archives:

<https://casregional.org/newsletter/>

May 2024-Volume 7, Issue 1:

<https://casregional.org/wp-content/uploads/2025/02/CAS-Newsletter-issue-7-1.pdf>

September 2024- Volume 7, Issue 2:

<https://casregional.org/wp-content/uploads/2025/02/CAS-Newsletter-issue-7-2.pdf>

May 2025-Volume 8, Issue 1:

<https://casregional.org/wp-content/uploads/2025/05/CAS-Newsletter-Vol-8.-Iss.-1-May-2025.pdf>

CARIBBEAN ACADEMY OF SCIENCES (CAS) MEMBERSHIP SURVEY 2025.

The Caribbean Academy of Sciences (CAS) Regional executive is currently surveying members across all chapters.

The Caribbean Academy of Sciences membership survey is a key tool for gathering member feedback, which informs strategic decisions and improves operations. By assessing member satisfaction and needs, the survey helps the academy tailor its programs effectively.

It also allows members to voice their opinions on pressing issues in the Caribbean scientific community, ensuring their input is included in decision-making. Overall, the survey enhances communication, transparency, and collaboration within the academy, supporting its mission to promote excellence in scientific research and education in the region.

To complete the survey, please see the following link:

<https://forms.gle/tkgRESZ4gB7E9MTX9>

CARIBBEAN ACADEMY OF SCIENCES (CAS) COMMITTEES 2025.

The Caribbean Academy of Sciences is delighted to unveil the creation of several dynamic committees dedicated to nurturing the growth and development of its Chapters throughout the Caribbean region. We are confident that this initiative will significantly enhance collaboration, foster innovation, and strengthen support within our vibrant scientific community.

Please complete the following form, to be considered.

To complete your application, please see the following form:

<https://forms.gle/jyFsnsVcLCiBuGyk9>

CARIBBEAN ACADEMY OF SCIENCES (CAS) MENTORING PROGRAMME 2025- COHORT 1

The Caribbean Academy of Sciences Regional Executive is committed to creating initiatives that our members can all benefit from. One such programme is the Caribbean Academy of Sciences Mentorship Programme.

The Caribbean Academy of Sciences Mentorship programme is a prestigious initiative aimed at fostering academic and professional growth among aspiring scientists in the region.

Founded on the principles of collaboration, knowledge-sharing, and excellence, this program pairs talented students (who must be pursuing either an MSc., MPhil., or PhD.) with experienced mentors (within academia or the industry) who provide guidance, support, and access to valuable resources.

Through regular meetings, workshops, and networking opportunities, mentees can enhance their research skills, broaden their perspectives, and build relationships within the scientific community. The mentorship programme not only promotes career development but also encourages innovation and critical thinking in various scientific disciplines.

To apply to be either a mentee or mentor, please complete the following form by April 30, 2025:

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CALL FOR WEBINAR SPEAKERS



HELLO,

The call for virtual webinar speakers for 2025 is now open!

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 2025, 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 2025. 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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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 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 2025.

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LIVE WEBINAR OPPORTUNITY:

January- December 2025, 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



THE CARIBBEAN ACADEMY OF SCIENCES (CAS)

CALL FOR WORKSHOP PROPOSALS

Background

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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.

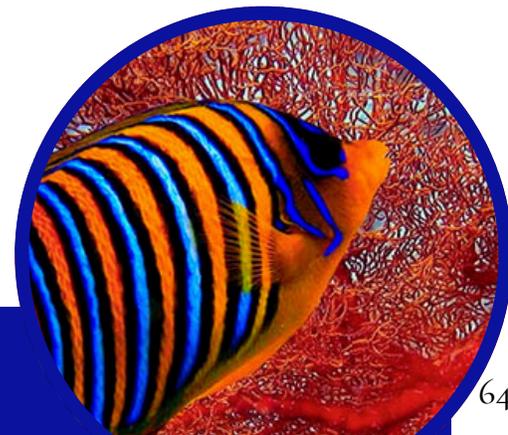
We are accepting workshop proposals on a rolling basis until the end of 2025. Interested participants are asked to please submit their proposal and author biography. Further information will be provided upon acceptance.

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



Live Online Workshop



Platform: Zoom



THE CARIBBEAN ACADEMY OF SCIENCES (CAS)

Call For Newsletter Articles

Call for Articles for the CAS Newsletter: 2025

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.

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.

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- 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.

Emails:

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

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Please attach your curriculum vitae.

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**THE CARIBBEAN
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