



May 2020
Volume 3, Issue 1

The Caribbean Academy of Sciences

NEWSLETTER

UPDATES

- ⇒ CAS postpones its 22nd Biennial Conference and General Meeting scheduled to be held on November 24-27, 2020 in Guyana due to the COVID 19 pandemic.
- ⇒ CAS mourns the passing of Professor Emeritus Tara Dasgupta and Dr. Jo-Anne Nina Sewlal
- ⇒ Guyana elects New Chapter Executive on February 22, 2020
- ⇒ CAS Executive engages in dialogue with the Inter-American Network of Academies of Sciences (IANAS) on the role of Science Academies and International Cooperation during the COVID 19 pandemic



INSIDE THIS ISSUE

STEM Education.....	2
Science Advice	4
Solar Energy	6
Success in Mathematics	7

SPECIAL POINTS OF INTEREST

- A new look at STEM Education!
- Exploring Science Advice in the SIDS
- New Book— Mainstreaming Solar Energy in Small Tropical Islands
- First wave of Haitian doctoral students graduate in Mathematics



Author:

Dr Rowena Kalloo

Chief Facilitator CAS/CSF

Caribbean STEM Workshops

Contributors:

Professor Emeritus Winston Mellowes, Dr. Cathy Radix,

Ms. Petal Punalall Jetoo

MAY 2020

Editor :

Ms. Petal Punalall Jetoo

Contributors :

- Professor Arnaldo Ventura
- Dr. Rowena Kalloo
- Dr. Cathy Radix
- Professor Emeritus

Robert Lancashire

- Professor Emeritus

Winston Mellowes

- Dr. Kiron C. Neale
- Pr Jean Vaillant

STEM EDUCATION FOR THE CARIBBEAN IN THE ERA OF PANDEMICS

The Covid19 Pandemic has created multiple crises – health, economic, and psycho-social. Not only can the disease spread like wildfire across a population, the only workable containment measure at this time - social containment, creates such severe loss of income and isolation that it creates double and triple layers of crises. The Pandemic has thrown into visibility the critical role of science, mathematics, technology and engineering in finding solutions. Whether these solutions arise from mathematical models which track the spread of the disease, the design of ventilators, or the much anticipated vaccine, the ability to return to our “new normal” will be largely determined by the work of researchers in the STEM disciplines – Science, Technology, Engineering and Mathematics. Already the work of the researchers at UWI, St Augustine has led to practical innovations which can immediately support the needs of our health systems. Even so, the Caribbean is largely dependent on medicines and technology from outside the region and creating the quality and quantity of such researchers is dependent on the teaching of STEM and STEM disciplines in our schools.

In the Caribbean we believe that subjects like science, math and engineering are just for the few “bright” students. While schools may teach science and mathematics, they often do not actively encourage the processes of STEM – that is, innovation, creativity, problem solving and inquiry in our classrooms. These processes are not easily tested in a written exam, but they are a natural part of human learning. Learning in the Caribbean classroom is still largely “chalk and talk,” it bores the average child, and turns off the creative mind. This boredom results in students who are restless and un-motivated for learn-

ing, and who may erroneously be labelled as incompetent or under-achievers.

The Covid19 pandemic suggests that we need to get beyond this stilted understanding of schooling, and make STEM the centerpiece of our education system. STEM should be for all children across economic and class barriers. Good STEM education has the capacity to incorporate diverse learners – the ones that learn by movement and art – as much as those who learn through reading and writing. It does not mean that all students will enter STEM fields but many more will. More students in STEM will provide the critical mass of persons with the skills and knowledge for these times. Further, more citizens will have the knowledge of scientific concepts as well as the thinking skills that will allow them to respond intelligently to these health crises. But STEM education, like STEM research, requires commitment and financial backing. As we begin to look at a recovery in post-Covid 19, this is the time to bring inquiry-based STEM, to the forefront of our education system.

The Caribbean Academy of Sciences (CAS) facilitates scientific and technological research in the Caribbean region and works to build capacity in STEM education for primary and secondary school teachers. Through its biennial conferences, public awareness in Science and Technology is generated. These exchanges of knowledge and ideas create a shared interactive space for the results of scientific research to be collated, published and understood. Promoting scientific inquiry builds creativity, collaboration, cooperation and communication – vital skills that should be developed by all students in a time such as this. CAS wishes to share the curated list of websites

CURATED LIST OF WEBSITES—STEM EDUCATION

Wabisabi Learning offers 40 websites for teachers and students.

Check out:

<https://wabisabilearning.com/blogs/stem/stem-resource-list-40-useful-websites>

Below is a selection of some of the more popular websites which you can access from Wabisabi. The description is offered by the curators of Wabisabi and not the CAS workshop team.

Code.org: No one is too young (or old, I might add) to code. Learn how to build an iPhone game, write your first computer program, draw in JavaScript and much more.

Exploratorium: One of my favorites. The website of the San Francisco-based Exploratorium is jam-packed with interactive activities, videos, apps, links and more.

How Stuff Works: I visit this website every day. It has hundreds upon thousands of articles that explain the wonders of science (and almost everything else on the planet).

NASA Science, Engineering, Mathematics and Aerospace Academy (SEMAA): SEMAA was developed to increase the participation of historically underserved K-12 youth in STEM fields. School activities and summer sessions are held throughout the nation.

NOVA: The website for PBS's popular science show is overflowing with videos and articles. Explore the wonders of evolution, nature, physics, math—practically any STEM subject that rings your bell.

STEM-Works: In addition to articles and job information, STEM-Works has stocked their site with interesting [activities](#). Test your skills in the reptile quiz. Rescue an athlete in the Bionic Games. Or, simply follow the path of great whites with the Global Shark Tracker.

Tynker: A computing platform that allows children to develop programming skills through fun, creative courses. Join the millions of kids from around the country learning to code with Tynker!

Khan Academy: Khan Academy breaks down complex topics on a range of subjects including programming, math, and statistics! It has learning resources in almost all STEM subjects K-12.

Flite Test STEM: Flite Test provides K-12 students with a variety of easy to download, free lessons that teach students about STEM through aviation activities.

HOODA MATH: HOODA MATH is a website for math games divided by subject. Students K-12 and math lovers of any age can learn about numbers while having fun.

The CAS workshop team strongly recommends as well:

Phet – University of Colorado: Lesson plans, unbelievable interactive simulations, in the subjects of Physics, Chemistry, Biology, Math and Earth Science.... and much more: <https://phet.colorado.edu/>

Hodder Education—<https://www.hoddereducation.co.uk/> offers print and digital teaching and learning resources

Science/Engineering Lesson Plans:

<https://tryengineering.org/teachers/>;

<https://www.teachengineering.org/>;

<https://www.sciencebuddies.org/teacher-resources/lesson-plans>

Programming:

<https://code.org/learn> and

<https://www.csunplugged.org/en/>

INDAGALA: international cooperation in South America - <http://www.indagala.org/> Indagala shares a list of Inquiry Based Science Experiments which was developed through Academies of Science, Ministries of Education³and the *La main a la pate* in Latin America (**Note the worksheets are available in Spanish**)



Primacy of Science Advice in The Small islands of the Caribbean

*Author: Professor
Arnoldo K. Ventura*
- Past Science & Technology
Advisor to Prime Ministers of
Jamaica

Science advice is a very scarce but indispensable commodity in many parts of the Global South, especially in regions like the small fragile islands of the Caribbean. This reality has become more pronounced in the wake of accelerated rates of change in several crucial areas of life including disease and public health, weather and climate, social dislocations and disorder, business and production, as well as poverty and hunger.

Ideologies of greed have elevated interminable economic growth to the singular indicator of human success, outstripping the regenerative capacities and non-renewable assets of the planet, fuelling unmanageable waste and pollution, while threatening the web of life with wild climate extremes. Prominent in many of these malfunctions are the indiscriminate misuse of scientific discoveries and the improper application of emerging scientific technologies in pursuit of ever accelerating economic growth in a world of finite resources. This persistent assault on nature is stripping humankind of the abilities to effectively adapt, preventing the environment from recovering and destroying flora and fauna at unimaginable rates. In so doing, we have created economies that are making the poor more miserable, while allowing many of the rich to shirk their responsibilities in contributing to the wellbeing of society. At no time, therefore, is the need for wise science advice more compelling globally, than now.

Before meaningful science advice can be delivered however, there must be extant sensitive and aware scientists willing to bridge the gap between science and the crying distresses of society as well as formulate cogent strategies to address these modern day difficulties. Sadly, in most of the Caribbean islands, science is still taught as a legacy of colonialism to provide background information for professionals in a variety of fields, but not as the ultimate guide to decision making and worthwhile actions. Science education is focused on the classical science subjects, such as biology, chemistry, physics and mathematics. Often neglected is how these proficiencies influence society and impact quality of life. Consequently, science advice is routinely not given and often not sought. Very graphic in this is the almost total absence of scientific reasoning in political, social and civil discourse. Because of scientific inattention and an inability to respond effectively to adverse occurrences, there is widespread loss of confidence in leadership, especially among the jobless youth and the suffering poor. Fortuitously, scientists still hold a distant respect among denizens of the Caribbean on which remediation can be nurtured.

It is no wonder then that there are very few science advisers, while economic and commercial experts abound, many of whom have little exposure to even a modicum of scientific education or purpose.

It is clear then that science education in the Caribbean must include instructions that impart a better understanding of how scientific insights and technological advancements wield influence on economic development and the astuteness of the general public. Without this appreciation, community interest and vigour will remain fixed on the classical entrepreneurial and business aspects of economic activities, often leaving crucial technological considerations aside as external inputs to be purchased with scarce foreign currency.

It is no wonder then that there are very few science advisers, while economic and commercial experts abound, many of whom have little exposure to even a modicum of scientific education or purpose. Not only are political and business leaders ill equipped to effectively apply scientific information, but the average person, although fortuitously dependent on scientific implements and substances, cannot properly navigate them in their daily lives. Furthermore, options for small businesses and entrepreneurial activities are narrowed by unawareness of the economic latitude and innovations that the flexibility of science and its technologies can bring to improving and upgrading these endeavours.

The unfolding Fourth Industrial Revolution (FIR) is widening the gulf between the scientifically aware and blithely unaware, with dire consequences for competition, jobs and national sustenance. The Caribbean islands are therefore facing serious challenges from not sufficiently embracing science, which underpins the development and use of emerging technologies that are driving the FIR. Scientific incompetency is diminishing regional competitiveness in production, industry and trade, as well as the provision of food, health and environmental stewardship. This failing has derailed the halting attempts at poverty eradication, aggravated the prospects for social harmony and the harnessing of languishing young talent. The old ways of depending on polluting mining exports and the old mainstays of tourism and other low level services, no longer offer economic sufficiency. This has fostered growing disillusionment, crime and violence, which urgently demand scientific inputs to provide creative and sustainable solutions.

It is clear then that Caribbean economies must be willing to embrace new options by relying on higher technologically led services, advanced agriculture, more efficient light manufacturing and more thoughtful use of the surrounding seas and trans-shipment possibilities. The tendency to try to fill gaps with the occasional project, funded by multilateral and bilateral agencies as part of their externally derived mandates, is inadequate, as they occur in fragmentary and individualistic fashions, without proper shared evaluation or their results embedded in retrievable domestic institutional memory. The national scientific advisory capacity to ensure that these obligations are met, either do not exist, or are weak, and consequently ignored. Additionally, versions of similar projects are implemented in different jurisdictions without the knowledge of others in the region, or worse, later in the same country, without any recollection of previous attempts. It is therefore compelling that local science advice along with the willingness to accept and act on such information, is badly needed in the Caribbean.

It is obvious that some territories are too small to mount the kind of crucial science infrastructure that would adequately fulfil their scientific requirements. The logic is compelling for a shared system that would serve the needs of all participating members. As it stands, many of the larger islands do not have functional advisor offices and resort to using external advice themselves. Many islands do not have structured ways to seek science advice nor ways to routinely include scientific evidence in deliberations. Unfortunately, many political and private sector functionaries in the region give only token acclaim to science and technological advice. The folly of this is palpable in the current Covid-19 pandemic which highlights the indispensable role of scientific and technological information in resolving major national and international problems and calamities.

Reasonably then, small islands must devise cooperative and collective ways to institute and share scientific information for the benefit of themselves and the entire region. However, it should not be forgotten that the practicality of scientific information is manifested in its applications. Therefore just as generating and sharing information have to be collectivised, so too must aspects of implementation be incorporated into an integrated scientific knowledge framework.

Since science and technology is largely the responsibility of politicians in the Caribbean, science advisors must develop the skills to effectively communicate with them by translating scientific results and demonstrating ways that technological innovations may contribute to reversing the decline in the region's socio-economic fortunes. Similarly, they have to gain the confidence of the private sector and spur them to invest more in research and development and science and technology, while they have to devise strategies to influence civil society to advocate for the use of science for improved quality of life.

With this as a background, any competent domestic science advisor must be confidently endowed with a firm understanding and use of the scientific research method in both the physical and social sciences, as well as have full command of current local developments, history and culture. They must also follow, learn, interpret and introduce the broad aspects of the emerging sciences and their technological products, as they relate to Caribbean aspirations. Advisors must therefore have familiarity with codified information, as well as tacit knowledge, such as how to negotiate for technologies, and who can best assist with their transfer, use and adaptation. Close relationships between domestic and global advisory bodies and experts must therefore become the norm.

The science not done today will be the regrets of tomorrow. Consistent and respected science advice will therefore lessen the need to frantically and wastefully grapple for solutions in a rapidly changing scientific world.

Author: Dr. Kiron C. Neale

Book Title and Webpage:

Mainstreaming Solar Energy in Small, Tropical Islands: Cultural & Policy Implications

Publisher: Routledge (Taylor & Francis Group)

Release Year: 2020

Status: Published and available as an eBook and Hardback

Description: This book explores how cultural considerations can improve policymaking to achieve mainstream solar energy in small, tropical islands. Focusing on Trinidad, Barbados and Oahu, Kiron C. Neale looks at how culture can affect and be affected by the policies that support the household adoption of two key energy

technologies: solar water heating and photovoltaics. Drawing on interviews with residents and energy officials, and an examination of the institutional, socio-economic and physical factors that affect energy systems such as governance structures and energy resource availability, the author explores themes including the impact of insularity on energy transitions and behavioural and cultural change. Overall, this book rebrands policies as instruments of cultural change and puts forward recommendations applicable to all small, tropical islands. Following the islands' transition to renewable energy, this book will be of great interest to scholars of energy policy, energy transitions, climate change, cultural studies and small states development, as well as industry professionals working on energy policy implementation.



MAINSTREAMING SOLAR ENERGY IN SMALL, TROPICAL ISLANDS
CULTURAL AND POLICY IMPLICATIONS

Kiron C. Neale



REVIEWS

"Kiron has a unique and insightful perspective on emerging energy transitions in Trinidad, Barbados and O'ahu. Focusing on culture, an under-explored topic of energy transitions, Kiron's research provides rich insights, and aligned policy recommendations, into how solar can be brought out of niche market and social environments and into the mainstream." -- *Rebecca Ford, Strathclyde Chancellor's Fellow, University of Strathclyde, UK*

"A creative and rigorous book that examines an understudied topic, the household and cultural uses of solar energy in small island developing states. It shows that tropical island countries have far more to offer the world than sun, sea, and sand. Important reading for those who care about energy transitions across less common paths." -- *Benjamin Sovacool, Professor of Energy Policy, Director of the Sussex Energy Group, & Director of the Center on Innovation and Energy Demand, University of Sussex, UK*

"This book tackles the interesting question of how solar energy can be introduced into island economies. Drawing on evidence from islands with a range of different histories and resource endowments, it provides a fresh approach to island energy systems, using thinking from cultural studies and innovation theories to inform how practice and policy might change." -- *Nick Eyre, Professor of Energy and Climate Policy & Director of the UK Centre for Research on Energy Demand, University of Oxford*

"Islands matter: Clean and abundant alternative energy from the sun is being mainstreamed in tropical, small island communities, assisting their transition away from fossil fuel dependence. With a focus on Barbados, O'ahu and Trinidad, Kiron Neale argues convincingly that culture, policy and technology need to be aligned for such a transition to be successful." -- *Godfrey Baldacchino, Professor of Sociology, University of Malta and President, International Small Islands Studies Association (ISISA)*

"This book is written with a lovely, light touch – just like a Caribbean wind, or the lapping waves. It shows how a just energy transition can occur in small islands through the use of renewable, solar power. The text combines a clear understanding of the role of culture in what is acceptable to people and investigates how policy can combine with this to achieve the transition. The overall perspective links an academic approach with that of a realistic recognition of what is needed to help these islands transform their energy systems. There are over 2000 oceanic islands that could build on the evidence from the three islands studied – Trinidad, Barbados and O'ahu in Hawaii. These small islands may not contribute large amounts of carbon dioxide to the atmosphere, but they are amongst the first to suffer from rising sea level. This book provides a hopeful outlook for them." -- *Brenda Boardman, Emeritus Research Fellow, University of Oxford, UK*

"What does the steel drum have to do with climate change? Neale's book is a treasure, as it embeds cultural path dependencies and social barriers in the climate change discourse and catalyzes a transition of "energy cultures" with policy relevant insights. It highlights that climate change adaptation and mitigation are more than technical problems and shows ways of dealing with solar technologies that even small island states can fall back on. This book hopefully finds its way into concrete policy decisions steering future climate resilient pathways." -- *Beate Ratter, Professor of Integrative Geography and Coastal Research, University of Hamburg, Germany*

"I found Kiron Neale's focus on the cultural and political factors of tropical Island energy transitions was not only interesting, but very useful. Neale provides guidance on why and how culture critically affects tropical island energy transitions and he does this with an inhabitant's understanding. He has also very helpfully presented guidance on how to think through socio-technical energy transitions and mainstreaming of technologies more broadly. While I recommend this book to people interested in energy transitions, renewable energy and island scholarships, I also recommend it to those who want to understand the critical (cultural, political, technical and logistic) factors that affect other changes that are occurring in societies. For energy policy makers, energy market operators and power engineers – as you work on introducing renewables into society, keep this book near and refer to it as you go – I am confident it will be a useful guide for your work." -- *Phillipa Watson, Research Fellow, School of Technology, Environments & Design, University of Tasmania, Australia*

Author: Dr. Kiron C. Neale

Citation and Webpage: [Neale, K.](#) (2020). Michelle Scobie, Global Environmental Governance and Small States: Architectures and Agency in the Caribbean (Northampton, MA: Edward Elgar, 2019). 224 pages. ISBN: 9781786437266. Hardback: \$120.00. *Politics and the Life Sciences*, 39(1), 122-124. doi:10.1017/pls.2020.2

Publisher: Journal of Politics and the Life Sciences

Release Year: 2020 **Status:** Published

Description: This short article gives a review of Michelle Scobie's "Global Environmental Governance and Small States: Architecture and Agency in the Caribbean".

Three doctoral students in mathematics from the special program started in October 2016 defended their PhD at the Université des Antilles in December 2019



Far left: Ms Antonine PHIGAREAU, middle : Mr Kendy VALMONT, right : Ms Jasmine CESARS

Dr Valmont studied the mathematical aspects of a growing phenomenon of social networks: the electronic rumor, say e-rumor. Such a phenomenon is important for communities, organizations and states since its spread can quickly put a strain on the public opinion, as well as economic and financial markets. Understanding the e-rumor propagation mechanism is a challenge for many scientists. Dr Valmont used a non-deterministic approach by using stochastic differential equations governed by Brownian motions and the associated optimal control theory. Based on epidemiological models, he presented a new stochastic model for the e-rumor in his thesis. A comparison with the associated deterministic model highlight the interest of his approach. A Poisson process was also added to his model in order to describe the sudden increase in the number of propagators. Finally, he used the theory of stochastic optimal control to minimize the propagation of e-rumor.

Dr Cesars is interested in stochastic differential equations (SDE) with jumps, governed both by Brownian motions and Poisson processes. She studied Black-Scholes and Langevin models governed by such Levy processes. In her thesis, she presented distributional properties of these models and showed that the direct or transformed solutions of the associated SDE can be processes with independent increments. The results she obtained concerning the laws of probability associated with discrete time observations, allow to establish conditional likelihood useful for statistical inference on the model parameters. The study of the log-likelihood ratio she conducted in the case of the Black-Scholes model with jumps and change points provides interesting tools for statistical inference. She presented also methods for numerical simulations of the SDE solutions. Scripts, written in the programming environment R, allows to generate artificial data sets offering possibilities to test inferential tools. An application in hydrology is carried

Dr Phigareau is interested in mathematical objects from number theory that link pure mathematics such as number geometry, to practical issues concerning information theory, code theory and cryptography. Her focus is mainly on so called L functions which have always been a powerful tool to study character sums in number theory. To estimate such sums, researchers are most often interested in the zeros and the poles of the corresponding L function. Dr Phigareau considered two main axes in her thesis : the first axis consists in giving a reduction in the evaluation of a sum of characters from modular properties of the exponents of the terms of a polynomial F. The second axis consists in generalizing this reduction by studying p-adic properties of L functions associated with a sequence of mixed character sums. The development of such a theory allows to obtain a reduction of the evaluation of the zeros and poles of the L function associated with mixed character sums.

The first wave of Haitian doctoral students, benefiting from special financial support from the French Embassy in Haiti, completed their three-year doctoral studies at the Université des Antilles. Ms. CESARS Jasmine, Ms. PHIGAREAU Antonine and Mr. VALMONT obtained their doctoral degree as follows :

On December 12, 2019, Mr Kendy VALMONT successfully defended his PhD thesis in mathematics entitled "*Optimal stochastic control with applications to the propagation of electronic rumor.*"

He was supervised by

Pr PIETRUS Alain and Dr BERNARD-ANDOUZE Severine

On December 13, 2019, Ms Jasmine CESARS successfully defended her PhD thesis in mathematics entitled "*Statistical Inference and Stochastic Differential Equations. Applications in hydrology*". She was supervised by Pr Jean VAILLANT and Dr Silvere Paul NUIRO.

On December 20, 2019, Ms Antonine PHIGAREAU successfully defended her PhD thesis in mathematics entitled "*Divisibility of exponential sums, mixed sums and their functions L*".

She was supervised by Dr. BLACHE Régis.

Article Submitted by:

Pr Jean VAILLANT

"Professor Dasgupta was a gentle giant who always made difficult concepts and situations so easy to understand and accept. Whether as a teacher, a supervisor, a Head of Department or as a colleague he was an inspiration and a motivator. The UWI will miss Tara".

Pro-Vice Chancellor and Principal of The UW/ Mona Campus, Professor Dale Webber

"Professor Dasgupta worked tirelessly to build the scientific capacity of The UWI and the Caribbean region. Throughout his career he also forged critical partnerships with local, regional and international entities e.g. Tanuad International, bringing regional and international expertise, capacity and recognition to the Department of Chemistry".

Dr Michael A. Taylor, Dean of the Faculty of Science and Technology, The University of the West Indies, Mona Campus.

"Prof Dasgupta taught me inorganic chemistry at N2 and N3 in the Faculty of Natural Sciences, UW/ Mona. After completing a MPhil in Physics in 1993 he offered me the post of NMR Engineer in the Chemistry Department where I honed my skills for a similar post at Columbia University in January 1997. Prof Dasgupta had always been very supportive of my academic and professional growth and was very instrumental in my return to Jamaica from Intel Corporation in 2006 to take up the role of HOD in Electronics Unit and Senior Lecturer in Physics Dept. He strongly supported all my endeavours and was extremely confident in my abilities, which laid the foundation for the development of Engineering at the UWI Mona. Rest in peace my friend!"

Dr Paul Aiken, Chief Executive Officer,

Mona-Tech Engineering Services Ltd and Former Dean of the Faculty of Engineering

Professor Tara Dasgupta was a distinguished scholar and as one of his students, I benefitted from his incredible intellect and experience.

His scholarship has been highly impactful at The University of the West Indies, nationally, regionally and internationally. Over his illustrious career, he has mentored many undergraduate and graduate students, many of whom are all over the world.

Dr Richard A. Taylor, Lecturer in Inorganic Materials Chemistry, Department of Chemistry, Faculty of Science and Technology, The University of the West Indies, St. Augustine Campus

REMEMBERING PROFESSOR EMERITUS TARA DASGUPTA



Professor Emeritus

Tara Prasad Dasgupta , CD

The UWI mourns with the rest of the scientific community, the loss of a great man of science, Professor Emeritus Tara Prasad Dasgupta.

Tara Prasad Dasgupta, a Professor of Inorganic Chemistry was born on January 29, 1941 and transitioned on April 20, 2020.

He joined The UWI family in 1974 as a lecturer in physical chemistry in the Faculty of Natural Sciences (now Faculty of Science and Technology). He was appointed as the Head of the Department of Chemistry for the period of 1992-2002 and under his leadership, the research infrastructure of the Department of Chemistry was significantly improved with state of the art equipment that helped contribute to vibrant research programmes.

Always a man of science, Professor Dasgupta's research interests included: Inorganic Reaction Mechanisms which extended to Synthesis and Reactivity of Novel Polynuclear Complexes; Electron Transfer involving Biological Reductants; Toxic substances in Foods; Degradation of pesticides in tropical ecosystems; and Nitric Oxide releasing compounds and their biological applications - to name a few.

He served in numerous other capacities, including: Head of the Electronics Unit in the Faculty, Head of the Jamaica Racing Commission (JRC) Testing Laboratory and as manager of the Mechanical Engineering Workshop on campus. In 1995 Professor Dasgupta established The UWI's Pesticide Research Laboratory to help monitor the levels of pesticides in agricultural products and organic pollutants in the environment.

He was elected a Fellow of the Royal Society of Chemistry, London and Caribbean Academy of Sciences, as well as the International Union of Pure and Applied Chemistry. His eminence in the field of science earned him an invitation from the Noble Prize Committee of Sweden to nominate candidates for this prestigious award. At his home campus, for three consecutive years, he received the Vice-Chancellor's award and Principal's award for his outstanding research work.

Through his work, the Department of Chemistry has been recognised regionally and internationally for its outstanding research work in Reaction Mechanisms with over 100 papers published in this field. He supervised over 50 graduate students (35 Ph.D. and 18 M.Phil). This renowned scholar and researcher is included in several biographical reference books such as Who's Who in the World, Who's Who in the Commonwealth, International Book of Honour, Men of Achievement and Personalities in the Caribbean. Throughout his career he forged critical partnerships with local, regional and international entities e.g. Tanuad International, bringing regional and international expertise, capacity and recognition to the Department of Chemistry. Leading up to his retirement (September 2006) in addition to his duties in Chemistry, he contributed to the School of Education (B. Ed Secondary Distance Project).

Following his retirement, the title of "Professor Emeritus" was conferred upon him by The University of the West Indies (2009) and in 2013 the title of "Honorary Research Fellow". The Jamaican Government conferred the Honour of the order of Distinction in the rank of Commander (CD) in recognition of his significant contribution to science, education and research in 2013 and in 2019 he was presented with the Musgrave Silver Medal, again in recognition for his many contributions to science, education and research.

He was a Founding Member of the Caribbean Academy of Sciences, Jamaica - an independent non-profit charitable organization legally registered with the Government of Jamaica for promoting science and technology in Jamaica (founded in 2010), and he was a former President of the Regional Caribbean Academy of Sciences. He was most recently involved in the creation of The Centre for Advanced Research in Renewable Energy (CARRE) and the first Net Zero Energy Building (NZEB) in the Caribbean as one of the principal investigators.

The significance of Prof Dasgupta's contribution to science and his lifetime of work at The UWI is second to none. He will be missed. As The UWI community mourns his passing, our thoughts and prayers are with his family and colleagues at this difficult time. He is

REMEMBERING DR. JO-ANNE NINA SEWLAL



Dr. Jo-Anne Nina Sewlal

The Caribbean Academy of Sciences mourns the loss of Dr. Jo-Anne Nina Sewlal. Jo-Anne was nominated and selected for the TWAS/CAS Award as a young scientist in 2009. She completed her PhD within two years. As a zoologist at The University of the West Indies (UWI), St. Augustine, Dr. Jo-Anne Sewlal was the recipient of the NIHERST 2012 Award for Excellence in Science and Technology for Junior Scientist for her impressive studies to date.

Dr. Sewlal showed remarkable support for CAS serving as Secretary to the Executive. She promoted CAS with industrial professionals and many joined as a result. She was actively engaged in mentoring efforts through her work with children on weekends, publications on bee-keeping and other areas of biodiversity. Jo-Anne founded the Pt. Fortin Chess Centre which was an active collaboration with the Ministry of Education. She also contributed to news on the Environment in the Tobago News. She taught part-time in the Department of Biological Sciences at UWI, St. Augustine. Her research on spiders is well documented.

**The Caribbean Academy
of Sciences**
www.caswi.org

**CAS Executive
President**
Professor Emeritus Winston
Mellowes

Foreign Secretary
Professor Emeritus Robert
Lancashire

Treasurer
Professor Neela Badrie

PRO
Dr. Mark Wuddivira

Secretary
Petal Punalall Jetoo



Save the Date

March 2021 is the suggested date Guyana's hosting of the CAS 22nd Biennial Conference and General Meeting. Further details will be provided .

Guidelines for the submission of articles

- I. Articles should not exceed 1000 words (1 1/2 pages)
- II. Images should be submitted as separate files

Articles should be submitted to:

1. pjetoo@gmail.com
2. secretariat@caswi.org

Note: Editors reserve the right to edit the length.