



FORECAST VIRTUAL CONFERENCE 2022



10 - 12
AUG
2022

Science & Technology

a D.R.I.V.E.R. of transformation

DEVELOPMENT | RESILIENCE | INNOVATION | VISION | ENTREPRENEURSHIP | RENEWAL

First joint conference of the Faculties of The University of the West Indies (Cave Hill, Mona, St. Augustine) in collaboration with the University of Technology, Jamaica

PROGRAMME BOOKLET

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Principals' Welcome

Professor Dale Webber

Pro Vice-Chancellor and Principal
Mona Campus, The UWI

The Principals of the UWI Cave Hill, Mona and St Augustine campuses are very pleased to welcome you to FORECAST 2022, the first joint conference of the science faculties of the University of the West Indies (Cave Hill, Mona and St Augustine) and the University of Technology, Jamaica. The theme of the conference is, “Science and Technology: a D.R.I.V.E.R. of Transformation”.

At a time when the United Nations has designated 2022 as the International Year of Basic Sciences for sustainable development, it is very fitting that our University leads the discourse on science and research matters to underscore our relevance and applicability to all sectors of society. The Faculty of Science and Technology at the University of the West Indies has strategically positioned itself as the “go to place for science, research, innovation and solutions”, partnering with the public and private sectors to foster growth and development. Our University has made great strides, with emphasis on **Development, Resilience, Innovation, Vision, Entrepreneurship** and **Renewal**, key drivers for the change that our society and the world needs.

I commend the various faculties and the University of Technology, Jamaica for amalgamating its resources in a bold effort to bolster science and research awareness in the region. Your commitment to positively impacting the landscape of our nations will undoubtedly foster unprecedented synergies and associations.



President's Welcome

Professor Colin Gyles

Acting President

University of Technology, Jamaica

It is my pleasure to join in warmly welcoming all participants and presenters to the FORECAST 2022 Conference. University of Technology, Jamaica is honoured to be partnering with The University of the West Indies Mona, Cave Hill and St. Augustine campuses for hosting this significant regional discussion forum. We wholeheartedly welcome this discussion concerning the transformative role that science and technology must play in the socio-economic development of our nations in the region.

This conference is timely and relevant, given that the year 2022 has been designated by the United Nations as the International Year of Basic Sciences for Sustainable Development. University of Technology, Jamaica is pleased to be part of this strategic partnership through the FORECAST conference and we anticipate that these discussions will serve to advance the objectives of this declaration by the United Nations.

As the Caribbean region and other global economies seek to rebound from the ravages of the COVID-19 pandemic, the deliberations that have been scheduled over the next two days of this conference are well poised to bring renewed regional focus on the challenges faced by the region. It is good that simultaneously, the conference will also offer innovative and sustainable solutions to these challenges and will underscore the role of current and emerging science and technology tools in this regard.

UTech, Jamaica over the course of its 64-year history has been a major contributor to regional development through research and innovation to provide solutions to numerous societal problems in the country and the wider Caribbean region. These have been in areas including science, health, engineering, architecture, information communication technologies and other areas.

We welcome the FORECAST conference discussions that will delve into the areas of **Development** for a sustainable future, **Resilience** and mitigation strategies, **Innovation** for productivity, **Vision** for greater harmony, **Entrepreneurship** for empowerment, poverty alleviation and progress and renewal, and **Research** as the cornerstone of a progressive society.

We look forward to the wealth of thoughts and ideas that will be shared by the cadre of expert speakers over the course of the two-day conference. The outcomes of the FORECAST Conference will undoubtedly add to the stock of new knowledge and practice in stimulating regional growth and development and an enhanced quality of life for our citizens.

I again offer warm welcome to all participants to FORECAST 2022 and wish for you an enriching and informative conference.



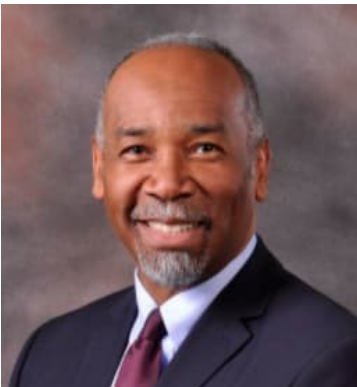
Dr Jeanese Badenock

Dean, Faculty of Science
and Technology
The UWI Cave Hill

Deans' Welcome

The Science and Technology Deans of the Cave Hill, Mona and St Augustine Campuses of The University of the West Indies (UWI) warmly welcome everyone to the Frontiers of Research and Caribbean Science and Technology, FORECAST virtual conference, 2022.

Forecast 2022 is the first joint conference of the Science and Technology Faculties of the UWI (Cave Hill, Mona and St Augustine Campuses) and the University of Technology, Jamaica. The theme of the conference is Science and Technology: A Driver of Transformation. This forum will showcase Caribbean researchers' focus on the challenges facing the region and the entire globe and the role of Science & Technology in providing sustainable solutions. We will showcase our passion for Science and its relevance in our communities. The use of innovative and creative approaches to shaping development through research and contributing to framing future-focused policy making will be on full display.



Dr Brian Cockburn

Dean, Faculty of Science
and Technology
The UWI St. Augustine

The next three days will include plenary lectures by invited experts, oral and poster presentations by participants including our students, workshops, the second grand student innovation challenge with a theme of Water this year for secondary and tertiary student teams, and a high-level panel on the third and final day on "post COVID-19 challenges facing CARICOM scientific solutions". Participants would be provided with networking virtual spaces for engagement.



Professor Michael Taylor

Dean, Faculty of Science
and Technology
The UWI Mona

Our deep gratitude goes to our organizing committee and the many committee members who have worked tirelessly over the past few months to ensure the success of this conference. We also thank our many sponsors, speakers, moderators, presenters, chairpersons and participants as well as our high-level panelists for participating and ensuring these three days are scientifically and technologically exciting, engaging and impactful.

Welcome and do enjoy our conference!



Dean's Welcome

Kamilah Hylton, Ph.D.
 Dean, Faculty of Science and Sport
 University of Technology, Jamaica

Disease, conflict, poverty, climate change.....The list of ills that prevail in the global society are unending and beckon us to re-think and re-imagine our current approaches. COVID-19 has surely confirmed that as we are faced with new and emerging problems that are increasingly complex and know no boundaries – we must become increasingly agile and creative in our solutions. Therefore, multifaceted and interdisciplinary research and collaborations must be a key component in evaluating problems and devising innovative and sustainable solutions that can impact society. Higher Education Institutions are expected to be the hubs for the creation of this new knowledge that should drive development and transform society. Consequently, the Faculty of Science and Sport at the University of Technology, Jamaica is proud to be collaborating with the University of the West Indies in hosting the inaugural Frontiers of Research in Caribbean Science and Technology (FORECAST) Conference.

As Jamaica seeks to position itself to simultaneously achieve Vision 2030 and Sustainable Development Goals, we are cognizant of the role to be played by research in providing critical data that must guide policy development and subsequent development imperatives. This conference seeks to provide participants with the opportunity to immerse themselves in critical discourse on the role science and technology must play in the design of a resilient, innovative and sustainable Caribbean future.

I therefore invite you to engage with us as we bring together some of the sharpest minds in the region to share new ideas and strategies for utilizing science and technology to disrupt the status quo and bring us closer to having well-developed societies and robust economies.



Conference Chair's Welcome

Curtis Busby-Earle, PhD

Senior Lecturer of Computer Science and
Associate Dean for Graduate Studies and Research
Faculty of Science and Technology, The UWI Mona

It is my pleasure and privilege today to extend to you all a very warm welcome to the Frontiers of Research in Caribbean Science and Technology, our FORECAST conference.

This conference is the first of its kind, a multi-institutional event orchestrated by the science and technology faculties of The UWI Mona, Cave Hill and St. Augustine campuses and the faculty of science and sport at the University of Technology in Jamaica.

FORECAST is the culmination of many months of collaborative activities among the members of the aforementioned faculties, and I would like to take this opportunity as the chair to express my deepest gratitude to all of my colleagues whose tireless efforts have led us to realise the staging of this momentous event, and to our deans and other members of our institutions' management teams for their support.

This is a timely gathering and meeting of the minds, and it is our hope that FORECAST will provide opportunities for networking, discussing science, hypotheses, results and experiments all towards finding solutions to our region's most challenging problems.

As a D.R.I.V.E.R of transformation I anticipate a most engaging conference as we had over seventy (70) abstracts submitted for either poster or oral presentations under the general topics of development, resilience, innovation, vision, entrepreneurship and renewal. Full paper versions of a few of these abstracts will be reviewed and subsequently included in a special issue of the Journal of Arts, Science and Technology.

We also have an excellent selection of keynote and plenary speakers, informative workshops and what promises to be a thought-provoking panel discussion with a few of our region's leaders. We also look forward to the presentations by the finalists of our grand innovation challenge.

I hope you find the conference to be a rewarding experience and upon reflection, that it was time well spent.



Keynote Speaker

Dr. the Rt Hon. Keith Mitchell

Former Prime Minister of Grenada &
Former Lead Head of Government in the CARICOM Quasi Cabinet with
responsibility for Science and Technology, including ICT

Former Prime Minister of Grenada, Dr. the Right Honourable Keith Claudius Mitchell was born to Dowlyn and Catherine Mitchell in Brizan, St. George.

He received his primary education at the Happy Hill R.C. School and the J.W. Fletcher Memorial School. He went on to the Presentation Brothers College then on to the University of the West Indies, Cave Hill Campus, where he gained a Bachelor of Science Degree in Mathematics and Chemistry in 1971, followed by a Master’s Degree from Howard University in 1975 and a Doctorate in Mathematics and Statistics from American University in 1979.

As a young adult, Dr. Mitchell taught at the Presentation Brothers College, his alma mater and was also a Mathematics Professor at Howard University. He also started his own consulting firm in Washington, D.C., and provided consultancy services to many Government Departments and private corporations in the United States.

In 1984, Dr. Mitchell was elected Member of Parliament for St. George North West, and has held the seat in each subsequent election since then. He was elected Political Leader of the New National Party (NNP) in 1989. In 1995, Dr. Mitchell successfully led the party to victory in general elections, winning eight of fifteen seats in the House of Representatives. He assumed office as Prime Minister on June 22 that year. Election victories in 1999, 2003, 2013 and 2018, including an unprecedented sweep of the polls on three occasions, meant that Dr. Mitchell served as Prime Minister a record five times.

Dr. Mitchell also served as Minister of National Security, Public Administration, Youth Development, Home Affairs, Information and Communications Technology and Disaster Management. In addition to his domestic responsibilities, Dr. Mitchell served as the Chairman of the OECS Authority and Chairman of the Regional Security System Council of Ministers.

Dr. Mitchell will deliver the Keynote address at FORECAST 2022.



Plenary Speaker

Dr. Judith Lang

Coral Scientist

Atlantic and Gulf Rapid Reef Assessment Program

Judith (Judy) Lang, a marine ecologist who has been energised by reefs in Jamaica and the wider Caribbean for over 60 years, provided the initial description of a mechanism by which coral compete for space in nature. She helped develop the Atlantic and Gulf Rapid Reef Assessment (AGRRA) protocols in the late 1990s and, as its Science Coordinator since 2005, has prepared many of its instructional materials.

After a devastating stony coral disease spread from Florida to Caribbean in 2017-2018, AGRRA's efforts were diverted to helping our regional colleagues respond to this disaster. When long-spined sea urchins, the region's major reef herbivore, began dying across the eastern and northern Caribbean (including Jamaica) in spring 2022, AGRRA remobilised to collaboratively create the open, inclusive, *Diadema* Response Network.



Plenary Speaker

Professor Emeritus Ishenkumba Kahwa

Professor of Supramolecular Chemistry
The UWI, Mona

Ishenkumba Kahwa served as a Professor of Supramolecular Chemistry at The University of the West Indies (The UWI), Mona Campus. He held several leadership positions at the University including Dean, Faculty of Science and Technology (formerly Faculty of Pure and Applied Sciences) from 2008 to 2013 and Deputy Principal, Mona Campus from 2013-2018. He served The UWI for 31 years and following his retirement in 2018, the title of "Professor Emeritus" was conferred upon him for the significant contributions he made to the development of the Department of Chemistry and The UWI as a whole.

Professor Emeritus Ishenkumba Kahwa, among his many achievements, established a laser laboratory at The UWI Mona, which at present includes powerful lasers, super-cold facilities and associated electronic and computational instruments. In addition, he led the development and establishment of a new suite of B.Sc, M.Sc, M.Phil and Ph.D. programmes in Occupational and Environmental Safety and Health (OESH). The programmes began in September 2006 at Mona and at the St Augustine Campus in 2009.

Prof. Emeritus Kahwa is very much engaged in the development of science, technology and innovation (STI) in Jamaica and the Caribbean and co-led the STI policy review/development in Jamaica. He also served as a member of the CARICOM STI Committee established by the Dr. the Rt Hon. Keith Mitchell, the CARICOM Prime Minister in charge of STI, to chart out the strategies needed by CARICOM to achieve rapid economic and social development using STI. He is the co-author of the CARICOM STI Chapter of the UNESCO World Science Report (2020), published every five years, since 2005.

Prof. Emeritus Kahwa is also Honorary Consul for Tanzania in Jamaica.



Plenary Speaker

Dr. Andrew Russell

Principal Software Engineer
Nvidia

Andrew Russell grew up in Jamaica and went to MIT for undergraduate and PhD studies. He has been doing research and development in the field of displays and image processing for the past 25 years.

He is now at Nvidia, where he is part of the Black Nvidian Network. At Nvidia he works on making more beautifully rendered images by coupling traditional signal processing algorithms with the power of AI. While at Magic Leap, he improved their AR display by leading the system integration of the dimmer, which enables VR mode, as well as tracking and defining low-latency inputs paths from subsystems such as head-pose and eye-tracking. During his time at Google, Andrew played a key role in starting Project Starline, where he headed up the creation of a retina-resolution autostereoscopic display for 3D video conferencing. He has also helped improve DLP displays at Texas Instruments and LCOS displays at Syndiant.

Andrew has over 50 patented inventions based on his contributions to making displays more beautiful.

SIGNATURE FEATURE

2nd **STUDENT GRAND
INNOVATION CHALLENGE** *Finals* > *Water*

Clean water and renewable energy are essential resources for people and the environment throughout the world. To this end, the United Nations Member States have adopted the 2030 Agenda for Sustainable Development, at the heart of which are the 17 Sustainable Development goals (SDGs). Of these 17 goals, three are concerned with sustainable production, maintenance and consumption of water. As the COVID-19 pandemic drags on, it becomes increasingly clear that safely managed drinking water, sanitation and hygiene services are vital to human health. Unless progress picks up speed - dramatically - billions of people will still lack these essential services in 2030.

Today, our local, regional, and global resources are under pressure due to increasing water scarcity and population growth. Demand for water is rising due to climate change effects, urbanization and increasing pressure from agriculture, industry and the energy sector. Decades of misuse, poor management and the over-extraction and contamination of freshwater and groundwater supplies have exacerbated water stress and deteriorated water-related ecosystems. This, in turn, affects human health, economic activities, and food and energy supplies. Urgent action is needed to shift the current trend.

This year's Grand Innovation Challenge sees three finalists presenting their innovation, addressing the SDGs 6, 11 and 14, concerning water.

Conference Feature

WORKSHOPS

Workshop 1

Elsevier: How to write a great scientific paper, and have it published in a good journal

Elsevier is a Netherlands-based academic publishing company specializing in scientific, technical, and medical content. Its products include a number of top-tiered international journals the online citation database Scopus, the SciVal tool for measuring research performance. This publishing house works across all areas of STEM and its products and services also include digital tools for data management, instruction, research analytics and assessment. The company runs several workshops aimed at capacity building with their stakeholders and users. During this master class participants will acquire knowledge to improve their writing skills and confidence, understand better what editors look for in papers, and receive recommendations to increase the chances of being published in a peer-reviewed journal. The workshop will be given Anthony Newman who has a wealth of experience in training junior scientists to publish top quality research papers.

Workshop 2

Brookhaven National Laboratory: Become a user and collaborator with BNL and CFN

Brookhaven National Laboratory delivers discovery science and transformative technology to power and secure the nation's future. Primarily supported by the U.S. Department of Energy's (DOE) Office of Science, Brookhaven Lab is a multidisciplinary laboratory with seven Nobel Prize-winning discoveries, 37 R&D 100 Awards, and more than 70 years of pioneering research. The laboratory is open to users from all countries and areas of STEM. The workshop will give an introduction to the capabilities of the laboratory, how to access facilities and collaboration tips for working with BNL scientists.

Workshop 3

Huawei: Global 5G Industry - Development and Market Insights

This workshop will explore:

1. 5G industry development: Describe the 5G industry development in terms of the scale of 5G commercial networks, spectrum evolution direction, and terminal

maturity, and introduce Huawei's special contributions to global 5G development.

2. 5G commercial applications: Introduce mature 5G application cases from the perspectives of 2C, 2B, and 2H, and analyze the application prospects of 5G in various industries.
3. Suggestions on 5G development in Jamaica: Provide suggestions on 5G industry development in Jamaica from aspects such as spectrum evolution, site reconstruction, and business development.

Workshop 4

LifeSavers Wipes: Bench top to the conveyor belt: steps toward the commercialization of scientific innovations

The majority of scientific discoveries remain confined to dissertations and peer review publications where they remain hidden from their possible industrial applications. Given the challenges offered by current global events: environmental pollution, climate change effects, diseases, the need for more rapid transmission of scientific discoveries from the realm of postgraduate dissertations and research papers to industrial applications is most critical. Hence, the need for a clear road map, allowing the connection of both pure and applied scientific discoveries to their industrial applications is obvious. Of course, for this to be achieved, a clear understanding of the constituent steps of such a process is germane. This brief workshop aims to map a possible path for achieving the aforementioned central goal, using previous experiences and examples.

Workshop 5

Elsevier: Learn about the tool that can help you to find journals that could be best suited for publishing

In this class you will learn about the tools that can help you to find journals best suited for publishing.

DAY 0

Tuesday 9 August, 2022

Schedule

4:00 – 6:00 pm JA / 5:00 – 7:00 pm EC

Orientation and Ice Breaking Session

- Tour of Gather Town and Q&A
- System Check/Demo
- Ice Breaker Sessions

Virtual Conference Information

FORECAST 2022 conference activities are being hosted on gather.town. The gather.town conference facility contain spaces for viewing Poster Presentations, viewing Grand Innovation Challenge video submissions, meeting with Conference Sponsors, a Zoom Lecture Hall for keynotes, workshops, and contributed talk sessions, and more.

If you have never used gather.town before, then please have a look at the [Guest Guide to Gather](#) to learn how to move around (using your keyboard arrow keys) and interact with people and objects (pressing the "x" key) in this digital environment.

Note: We strongly recommend using a Google Chrome browser on a desktop or laptop computer. You will need to permit the browser to access your camera and microphone to be able to see and speak with attendees.

Other key gather.town information is available at <https://www.mathdept.org/forecast2022>.

DAY 1

Wednesday 10 August, 2022

Schedule

8:00 – 9:25 am JA / 9:00 – 10:25 am EC

OPENING CEREMONY: (Zoom)

Welcome and Introductory Remarks

Dr. C. Busby-Earle
Conference Chair

Greetings

Professor Sir Hilary Beckles
Vice-Chancellor, The University of the West Indies

Professor Colin Gyles
Acting President, University of Technology, Jamaica

Introduction of Keynote Speaker

Dr. Kamilah Hylton
Dean, Faculty of Science and Sport, UTech Jamaica

KEYNOTE ADDRESS

Science and Technology and its Application to Regional Development

Dr. The Rt. Hon. Keith Mitchell

Former Prime Minister of Grenada
Former Lead Head of Government in the CARICOM Quasi Cabinet
with responsibility for Science and Technology, including ICT

Vote of Thanks

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

9:25 – 9:45 am JA / 10:25 – 10:45 am EC

BREAK

DAY 1

Wednesday 10 August, 2022

Schedule

9:45 – 11:30 am JA / 10:45 am – 12:30 pm EC

Session 1: Development [D]

Chair: Dr. Peter Ruddock, UTech Jamaica

Co-Chair: Phillipia Morgan, Undergraduate Student, UTech Jamaica

Presentations

- **Proposal for the commercial production of essential oils in Tobago using supercritical fluid extraction**
Sharad Maharaj, The UWI STA & Univ of Trinidad & Tobago
- **Comparative nutritional and molecular characterization of *Themeda arguens* (piano grass) from central Jamaica**
Max Wellington, Northern Caribbean University & Trent
- **Validation of a small-scale cacao fermentation method for niche marketing**
Naailah Ali, The UWI STA
- **A dietary risk exposure assessment of pesticide residues found in commonly consumed foods in Trinidad and Tobago**
Winnette Collimore, The UWI STA
- **The effect of gruesome crime scenes on the personal and professional lives of forensic crime scene investigators in Jamaica**
Delton Gordon, UTech Jamaica

11:30 am – 12:30 pm JA / 12:30 – 1:30 pm EC

WORKSHOP 1: ELSEVIER

How to write a great scientific paper, and have it published in a good journal

Presenters: Anthony Newman, Tatiana Castro

12:30 – 1:00 pm JA / 1:30 – 2:00 pm EC

LUNCH

DAY 1

Wednesday 10 August, 2022

Schedule

1:00 – 2:45 pm JA / 2:00 – 3:45 pm EC

Session 2: Resilience [R]

Chair: Dr Kayon Barrett, Tarleton State University
 Co-Chair: Marco-Dean Brown, Graduate Student, The UWI Mona

Presentations

- **Environmental modeling of organic pollutant distribution in Jamaica**
Kayon Barrett, Tarleton State University
- **Small-RNA Next Generation Sequencing, a tool for the discovery of the virome of Jamaican crops**
Deiondra Tai, The UWI Mona
- **A survey of native and invasive alien live bearing fish species in Jamaican rivers**
Kerri-Ann Bennett, The UWI Mona, Oklahoma Germany
- **Bioprospecting and biopiracy in the Caribbean: Challenges and opportunities**
Sylvia Mitchell, The UWI Mona & Wild Caribbean
- **Investigating the use of natural extracts of Piperaceae in control of adult *Aedes aegypti* mosquitoes**
Chelsea Frank, The UWI Mona

2:45 – 3:00 pm JA / 3:45 – 4:00 pm EC

BREAK

3:00 – 4:00 pm JA / 4:00 – 5:00 pm EC

WORKSHOP 2: BROOKHAVEN NATIONAL LABORATORY

Become a user and collaborator with BNL and CFN

Presenters: Priscilla Antunez, Lisa Miller

4:00 – 6:00 pm JA / 5:00 – 7:00 pm EC

Poster Session

Presentation and Judging of Posters

DAY 2

Thursday 11 August, 2022

Schedule

8:00 – 9:00 am JA / 9:00 – 10:00 am EC

Plenary Session 1

Chair: Professor Mona Webber, The UWI Mona
 Co-Chair: Shakira Banks, Undergraduate Student, UTech Jamaica

PLENARY

Caribbean coral reefs are in deep trouble, but it's not yet terminal

Dr. Judith Lang

Coral Scientist

Atlantic and Gulf Rapid Reef Assessment Program

Vote of Thanks

Mrs Marcia Creary Ford, The UWI Mona

9:00 – 9:15 am JA / 10:00 – 10:15 am EC

BREAK

9:15 – 10:15 am JA / 10:15 – 11:15 am EC

WORKSHOP 3: HUAWEI

Global 5G Industry Development and Market Insights

Presenter: Ms. Candice Wu, 5G Solution Expert for the Latin America Region

DAY 2

Thursday 11 August, 2022

Schedule

10:15 – 11:00 am JA / 11:15 am – 12:00 pm EC

Session 3: Innovation [I]

Chair: Dr Sylvia Mitchell, The UWI Mona
 Co-Chair: Desireina Delancy, Graduate Student, The UWI Mona

Presentations

- **Discovery of rare and novel variants associated with breast cancer in Trinidadian families using whole-exome sequencing**
Alana Clare, The UWI STA & Genetics Trinidad
- **Psychedelic-assisted psychotherapy – preparing your target using psycho historiography: A Jamaican perspective**
Winston De La Haye, The UWI Mona & Kingston Public Hospital

11:00 am – 12:00 pm JA / 12:00 pm – 1:00 pm EC

WORKSHOP 4: LIFESAVERS WIPES

Bench top to the conveyor belt: Steps toward the commercialization of scientific innovations

Presenter: Dr. Peter Nelson

12:00 – 12:30 pm JA / 1:00 – 1:30 pm EC

LUNCH

12:30 – 1:30 pm JA / 1:30 – 2:30 pm EC

Plenary Session 2

Chair: Dr. Michael Forde, The UWI St. Augustine
 Co-Chair: Michaela Edwin, Graduate Student, The UWI St Augustine

PLENARY

Are CARICOM Countries innovating into the Fourth Industrial Revolution?

Professor Emeritus Ishenkumba Kahwa
 Professor of Supramolecular Chemistry, The University of the West Indies

Vote of Thanks

Dr. Zeyar Min, UTech Jamaica

DAY 2

Thursday 11 August, 2022

Schedule

1:30 – 3:15 pm JA / 2:30 – 4:15pm EC

Session 4: Vision [V]

Chair: Professor Samson Omoregie, UTech Jamaica
 Co-Chair: Jason Solomon, Graduate Student, UTech Jamaica

Presentations

- **Development of a simple automated image-based sun position tracking algorithm**
Craig Rattray, The UWI Mona
- **Science, Technology and Innovation (STI) Policy: A necessary artifact for the SIDs of the Caribbean**
Andrea Barrett, UTech Jamaica
- **West Indies originated USPTO invention with *pro se* prosecution are a competitive missing link in regional and global science and industry**
Anthony Dellinger, Anguilla & Greensboro (North Carolina)
- **The impact of areawide integrated pest management programmes in Jamaica**
Lisa Myers Morgan, RADA & Ministry of Agriculture and Fisheries
- **A preliminary investigation into the local management of isolated bacteria implicated in malodour (Halitosis) in Mandeville, Jamaica**
Tillack Hardeen, Church Teachers' College, UTech Jamaica, Northern Caribbean University

3:15 – 3:30 pm JA / 4:15 – 4:30 pm EC

BREAK

3:30 – 5:00 pm JA / 4:30 – 6:00 pm EC

2nd Student Grand Innovation Challenge

Welcome and Overview Chair: **Dr Zeyar Min**, UTech Jamaica

Panel of Judges **Evan Cayetano** (IDB), **Andrew Canon** (NWC), **Peter Nelson** (The UWI Mona), and **Shane Austin** (The UWI Cave Hill)

Submissions

- **Conserving Every Drop: Innovative Water Resource Management Strategies**
Melissa Curtis, Matthew Rahamut Mentor: Stephanie Parker
- **Vae Victis Piston Flush**
Juan McIntosh, Demoy Lindo Mentor: Dr. Coneil Roye
- **VECTOR-1**
Nkrumah Fong, Floyd James, Brittany Morris, Tamika Allen, Kemo Fong

DAY 3

Friday 12 August, 2022

Schedule

8:00 – 9:00 am JA / 9:00 – 10:00 am EC

Plenary Session 3

Chair: Dr. Mechelle Gittens, The UWI Cave Hill
 Co-Chair: Yanique Morris, Undergraduate Student, UTech Jamaica

PLENARY

Innovation in the age of the Metaverse

Dr. Andrew Russell
 Principal Software Engineer, Nvidia

Vote of Thanks **Dr. Marcia Blair-Thomas, UTech Jamaica**

9:00 – 9:15 am JA / 10:00 – 10:15 am EC

BREAK

9:15 – 11:00 am JA / 10:15 am – 12:00 pm EC

Session 5: Entrepreneurship [E]

Chair: Dr. Marcia Blair-Thomas, UTech Jamaica
 Co-Chair: Melinda Levy, Graduate Student, UTech Jamaica

Presentations

- **Functional group gating of dibenzo-18-crown-6 towards the development of lead (ii) ion sensing electrodes**
Deneikah Jackson, The UWI Mona
- **A token-based smart contract management (TSM) DApp for vehicle loans**
Koffka Khan, The UWI STA
- **An ACO-based algorithm for heterogeneous computing environments using priority queues**
Jeffrey Elcock, The UWI CH
- **Using sea surface temperatures in the Pacific Niño zones to predict dry weather during the optimal growing season in Portland**
Jeff Von Kuster, College of Agriculture, Science and Education (Jamaica)
- **Utilizing geographic information processing systems for analysis, management and repositioning of the Jamaican ginger industry**
Marcia Blair-Thomas, UTech Jamaica & Newracle Technologies

DAY 3

Friday 12 August, 2022

Schedule

11:00 am – 12:00 pm JA / 12:00 – 1:00 pm EC

WORKSHOP 5: ELSEVIER (2)

Learn about the tool that can help you to find journals that could be best suited for publishing

Presenter: Tatiana Castro

12:00 – 1:00 pm JA / 1:00 – 2:00 pm EC

LUNCH

1:00 – 2:45 pm JA / 2:00 – 3:45 pm EC

Session 6: Renewal [R]

Chair: Dr. Alexa Redway, UTech Jamaica

Co-Chair: Freida Kauffmann, Graduate Student, The UWI St Augustine

Presentations

- **A Density Functional Theoretical (DFT) and experimental study of the hydrolytic degradation behaviour and spectroscopic properties of some Benzylideneanilines**
Tahjna Robertson, The UWI Mona
- **Synthesis and antiplasmodial evaluation of pyridinecarboxamides and thiocarboxamides**
Alexa Redway, UTech Jamaica, The UWI Mona, Australia National University
- **First record of exotic terrestrial flatworms (Tricladida: Geoplanidae) *Bipalium vagum* and *Dolichoplana striata* with confirmation of *Platydemus manokwari* in Jamaica**
Marco-Dean Brown, The UWI Mona
- **Emerging trends in data utilising longitudinal analysis**
Tamika Royal-Thomas, The UWI Mona
- **Excited-state intermolecular proton transfer (ESIPT) and intra molecular energy transfer (IMET) in a novel Lanthanide Metal-Organic Framework (Ln-MOF) material with ratiometric tunable photoluminescence and sensing capabilities for metal ions and nitroaromatic pollutants**
Zeyar Min, UTech Jamaica, The UWI Mona & The UWI STA

DAY 3

Friday 12 August, 2022

Schedule

2:45 – 3:00 pm JA / 3:45 – 4:00 pm EC

BREAK

3:00 – 4:30 pm JA / 4:00 – 5:30 pm EC

HIGH LEVEL PANEL DISCUSSION “Post COVID-19 Challenges facing CARICOM – Scientific Solutions”

Moderator: Mrs Paula-Ann Porter-Jones
Broadcaster/Communications Consultant

Panelists

- The Hon. Floyd Green, Minister without Portfolio in the Office of the Prime Minister, Government of Jamaica
- Dr. The Rt. Hon. Keith Mitchell, Former Prime Minister of Grenada
- Professor Colin Gyles, Acting President, UTech, Jamaica
- Professor Clive Landis, Pro Vice-Chancellor and Principal, The UWI, Cave Hill
- Professor Dale Webber, Pro-Vice-Chancellor and Principal, The UWI, Mona
- Professor Rose-Marie Belle Antoine, Pro Vice-Chancellor and Principal, The UWI, St. Augustine

4:30 – 4:45 pm JA / 5:30 – 5:45 pm EC

BREAK

4:45 – 5:30 pm JA / 5:45 – 6:30 pm EC

Closing and Awards Ceremony

Chair: Dr. Andrew Lamm, UTech Jamaica

Summary of Conference **Dr Andrew Lamm**
Vice Dean, Faculty of Science and Sport, UTech Jamaica

Presentation of Awards **Professor Samson Omoregie**
Head, School of Natural and Applied Sciences, UTech Jamaica

Vote of Thanks and Closing Remarks **Professor Michael Taylor**
Dean, Faculty of Science and Technology, UWI Mona

Poster Submissions

Abstract Number	Title	Presenting Author	University/Institution
1	Comparative GC-MS analysis and biological activities of fruit extracts of <i>Melothria pendula</i> L. and <i>Coccinia grandis</i> (L.) Voigt (Cucurbitaceae) from Trinidad	Marian Watson	The UWI STA & Univ of Trinidad & Tobago
2	Tomatoes from the greenhouse vs. open field: which are safer?	Rohanie Maharaj	The UWI STA & McGill Univ
3	A comparison of the quality of commercially available potable water to public water supplies	Rohanie Maharaj	The UWI STA
4	Preliminary evaluation of hygienic practices of street food vendors in Barbados	Rohanie Maharaj	The UWI STA
5	Temperature and chemical induced conformational changes in purified PEPC: Studies on intrinsic/extrinsic fluorescence and circular dichroism spectroscopy	Chinthapalli Bhaskar Rao	The UWI Mona, Arba Minch Univ, Univ of Hyderabad
6	Simulation driven investigation of the effect of SnS, ZnO and MnO layers on a GaAs/AlGaAs heterojunction Solar Cell	Davinder Pal Sharma	The UWI STA
7	Climate stress inertia: a policy messaging response to farmer powerlessness and passivity cognitions in drought extremes in a Jamaican case study	Sarah Buckland	The UWI Mona
8	Twitter disaster response framework	Emilie Ramsahai	The UWI STA & The UWI Five Islands
10	A baseline assessment of Lionfish (<i>Pterois</i> sp.) population dynamics, distribution, and diet within the Montego Bay Marine Park, Jamaica during January - December 2018	Christopher May	Montego Bay Marine Park Trust
11	Next generation sequencing of geminiviruses in Jamaica	Chantal Marriott	The UWI Mona & Univ of Arizona
12	Assessing the impact of the COVID-19 pandemic in Jamaica: Physical activity participation, weight gain, and the mental health perception	Van Der Rowe	UTech Jamaica
13	Host preference, impact of host transfer and insecticide susceptibility among <i>Aphis gossypii</i> group (order: Hemiptera) in Jamaica	Desireina Delancy	The UWI Mona
14	Using larval morphology to distinguish Sarcophagidae flies of forensic importance in Jamaica	Rochelle Daley	The UWI Mona
15	Nutritional analysis of Jamaica's <i>Hibiscus abdariffa</i> (sorrel) calyxes, seeds, and leaves	Paul Gyles	Northern Caribbean Univ
16	The microbial analysis of survival strategies for opportunistic oral pathogens in the oral cavity	Gad Onywere	Northern Caribbean Univ
17	Nearing a tipping point: heat-stress and small-scale poultry farming in Jamaica	Dudley Williams	The UWI Mona
18	To be or not to be: inducers, inhibitors and implications for transport decarbonisation in a small island	Danielle Evanson	The UWI CH
19	Increased preference of habitat heterogeneity and structural complexity with predatory threat in seagrass fish species	Nikki Bramwell	UTech Jamaica, Univ of Technology Sydney, Utah State Univ
20	Identification and expression analysis of sweet potato auxin signaling genes involved in root tuber initiation	Sarah R. Mathura	The UWI STA

Poster Submissions

Abstract Number	Title	Presenting Author	University/Institution
22	Co-habitation of ESBLs and plasmid-mediated AmpCs in uropathogens at a tertiary care hospital in the Caribbean	Steven Stone	The UWI Mona & University Hospital
23	Options for controlling for phosphorus during low temperature Bayer processing of Jamaican bauxites	Nijole Young	The UWI Mona
24	Evaluation of the inter-annual variability of site-corrected daily global horizontal solar irradiation in Trinidad and Tobago	Xsitaz Chadee	The UWI STA
25	Physical, thermal, optical, shielding and elastic moduli parameters of Bi ₂ O ₃ -B ₂ O ₃ -TeO ₂ glass system doped with Fe ₂ O ₃	André McGlashan	The UWI Mona
26	The impact of land management on soil health in Jamaica: a case study of the Millbank farming region	Adrian Spence	The UWI Mona & Univ of Tennessee
27	Facing cancer occurrences and lethality: the potential of lesser galangal (<i>Alpinia officinarum</i> Hance Jam1) as an antiproliferative agent	Samson Omoregie	UTech Jamaica & Northern Caribbean Univ
28	Antimicrobial potential of <i>Allium sativum</i> in the presence and absence of heat stress	Joneshia Bryan-Thomas	UTech Jamaica & Northern Caribbean Univ
29	Accelerating a clean energy transition in Jamaica – how climate and people benefit	Ruth Potopsingh	UTech Jamaica, Caribbean Maritime Univ & Min of Economic Growth & Job Creation
30	Simulation of COVID-19 in a Caribbean Island using multi-agent systems	Sébastien Regis	French West Indies Univ
31	Ethanol extracts of <i>Bidens pilosa</i> (Spanish needle) increase glucose absorption by yeast cells	Raeann Simmonds	Northern Caribbean Univ
32	Opine and lactate dehydrogenase of the intertidal sea snails of Genus: Nerita and their response to differing environmental conditions	Spencer St. John	The UWI CH
34	Foliar disease detection and quantification using image analysis tools	Vijayanandh Rajamanickam	The UWI STA
35	Estuarine river system: A comparative study of benthic macro-invertebrate communities and physico-chemical properties of the upper and lower regions of Salt River, Clarendon, Jamaica	Troy Franklin	The UWI Mona
36	The effect of dangerous prey on Anoline hatchlings in Jamaica	John Hall	UTech Jamaica
37	<i>Marisa cornuarietis</i> (Linnaeus, 1758) (Gastropoda: Ampullariidae): a new addition to the freshwater malacofauna of Jamaica with health and economic implications	Marco-Dean Brown	The UWI Mona
38	Phytochemical screening, proximate analysis, and mineral composition of ultrasonic extract of Annatto (<i>Bixa orellana</i> L.) seed extract	Modupeola Abayomi	The UWI Mona
39	Over three (3) decades of research on Jamaican plant extracts: the case for safer agrichemicals and linkage to pharmaceuticals including potential supplementary treatments of COVID-19 infections in Jamaica	Marcia Blair-Thomas	UTech Jamaica, Univ of Pennsylvania, Cornwall Regional Hospital
40	The larvicidal activity of a magnoliid species against <i>Aedes aegypti</i> mosquito larvae	Kevon Stewart	The UWI Mona
41	An evaluation of chemical preservation methods for extension of the shelf-life of fresh-cut East Indian mango slices	Andrea Goldson-Barnaby	The UWI Mona

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