



**70 years** of Service,  
**70 years** of Leadership



# **The Caribbean Academy of Sciences**

in collaboration with Caribbean Academy Sciences Jamaica (CASJ) and  
The University of the West Indies, Mona, as part of  
The UWI's 70th anniversary and  
CAS' 30<sup>th</sup> anniversary celebrations.

**21st General Meeting and Conference**  
**Mona Visitors' Lodge and Conference Centre,**  
**Kingston, Jamaica**  
**November 27 – 30, 2018**

**Abstract Submission Deadline**  
**31st August 2018**

**“Science, Technology and Innovation:  
Vehicles for a  
Knowledge Based Economy”**

**Abstracts for Oral and Poster presentations in all areas  
of medical, natural or social sciences are invited**

# CAS Meetings and Conferences

The inauguration of CAS was marked by an international seminar on “Science, Development and Society” at the Central Bank Auditorium in Port of Spain, Trinidad on 16<sup>th</sup> and 17<sup>th</sup> May 1988. Regional dignitaries attending the inauguration included Sir John Compton, the then Chairman of the Commonwealth Caribbean Heads of Government, Senator Michael Williams, President of the Senate of Trinidad and Tobago and Honourable Winston Dookeran, Minister responsible for Science and Technology in Trinidad and Tobago. Academies of Sciences worldwide either sent representatives or messages of congratulations to the Academy. The seminar itself was a resounding success. The keynote address was given by Professor W J Whelan of ICSU who represented Professor M G K Menon. Feature addresses were given by Professor Lalor who spoke on behalf of the disciplines of Natural Sciences; Professor H. Phelps who spoke on behalf of the Engineering Sciences; Professor Rolf Richards who spoke on behalf of the Medical Sciences; Mr. Frank Barsotti, a leading regional economist who spoke on behalf of the Social Sciences; Dr. Hayden Blades of CARICOM who spoke on behalf of the Agricultural Sciences and Dr. C H D Madagza, the representative of President Odhiambo of the African Academy of Sciences who spoke on “Some Experiences of the African Academy of Sciences”.

#	Year	Location
1	1988	Trinidad and Tobago
2	1990	Trinidad and Tobago
3	1991	Jamaica
4	1992	Barbados
5	1993	Trinidad and Tobago
6	1994	Guyana
7	1996	Tobago
8	1997	Barbados
9	1998	Guadeloupe
10	1999	Suriname
11	2000	Cuba
12	2001	Guyana
13	2002	Jamaica
14	2004	Trinidad and Tobago
15	2006	Guadeloupe
16	2008	Grenada
17	2010	Antigua and Barbuda
18	2012	Barbados
19	2014	Tobago
20	2016	Guadeloupe
21	2018	Jamaica

## Current CAS Executive (2016-2018):

President:	Emeritus Professor Winston Mellowes	wamello@yahoo.com
Secretary	Dr. Jo-Anne Sewlal	joannesewlal@gmail.com
Foreign Secretary	Emeritus Professor Robert Lancashire	rjlanc@caswi.org
Treasurer:	Dr. Mark Wuddivira	mark.wuddivira@sta.uwi.edu
P.R.O.	Dr. Patricia Sealy	patricia.sealy2@sta.uwi.edu

## Information

The 21<sup>st</sup> General Meeting of The Caribbean Academy of Sciences (CAS) will be held at the The UWI Mona Campus. The now Biennial Conference will commence on the morning of November 27, 2018, with the Opening Ceremony.

The theme of this year's conference is **"Science, Technology and Innovation – Vehicles for a Knowledge Based Economy"**. The conference will attract academics and professionals from tertiary institutions, public and private sectors of Jamaica and the wider Caribbean region. We are planning to make this Conference really remarkable by involving oral and poster presentations from not only graduate students but also undergraduate research students as well and to showcase it as a part of the celebrations of the 70th anniversary of The UWI.

A second major objective of the conference is to provide an opportunity, **via parallel scientific sessions**, for experts from the region's Universities, Research Centres and Industry to come together to present their research, industrial and developmental findings for critical analysis. The scientific programme will consist of plenary lectures by invited experts, and short papers of 15 minutes as well as poster presentations by participants. Presentations may be in any area of medical, natural or social science, including: Agriculture, Medicine, Veterinary Medicine, Anatomy, Physiology, Chemistry, Biochemistry, Biology, Biotechnology, Energy, Food Science, Geography, Computing, Physics, Engineering, Education, Sociology, Psychology, Political Science and Management Science, Economics and Health Economics.

**Note that the Academy's General Meeting, open to all financial members, takes place on Tuesday, 27 November 2018 from 1.30 – 4.30 p.m.**

## Organisation

### CAS PRESIDENT

Emeritus Professor Winston Mellowes (UWI)

### CASJ PRESIDENT

Emeritus Professor Tara Dasgupta (UWI)

### ORGANIZING COMMITTEE

Novelette Sadler-McKnight, Craig Perue, Tara Dasgupta,  
Robert Lancashire, Nagarani Ponakala, Kerri-Ann Wilson, Neela Badrie, Elaine Brouers.....

### SCIENTIFIC COMMITTEE

Kit Fai Pun, Chair, Lilliam Alvarez, Mark Wuddivira, Robert Lancashire .....

## List of confirmed Plenary Lecturers:

1. Professor Richard Catlow, FRS, Foreign Secretary Royal Society, (UK), *Materials for Renewable Energy Technologies.*
2. Professor John Hildebrand FNAS, Foreign Secretary of the National Academy of Sciences, (USA) -*Rethinking STEM Higher Education in the 21<sup>st</sup> Century*
3. Dr Douglas MacMartin (Cornell University, USA) - *Geoengineering and Climate Change*
4. Professor Paras Prasad (University at Buffalo, USA) – "*Convergence of Science: Linking Nanotechnology and Photonics with Chemistry and Biology, to Impact on Energy, health care and Economic Development*"
5. Professor Daniel Burgos (Universidad Internacional de la Rioja, Spain and UNESCO, France ) - *Is Transgenic Learning a Radical Boost for Innovative Education?*
6. Professor Kamal Abdur-Rashid (President and Chief Technology Officer, Kamal Pharmachem Inc., Canada) – *New Approaches for the Manufacture of Pharmaceutical Products.*
7. Dr. Parris Lyew-Ayee Jr (Mona Geoinformatics Institute Director) - *Data-Driven Decision Making: Practical Observations from the Public and Private Sectors in Jamaica*
8. Professor Jamboor K. Vishwantha, (University of North Texas Health Science Center, USA) *Mentorship and Networking for Scientific Advancement and a Diverse Research Workforce.*
9. Professor Melvin A Pascall (Food Science and Technology, The Ohio State University, USA) confirmed. *Innovations in the Food and Agriculture Industry with an Emphasis on Packaging*
10. Dr. David McBean, Executive Director of MSBM, Confirmed, *Technology & Science - The Promise of An Easier Life .*

*Brief Biographical information on the Plenary Speakers will be available in the Final Announcement.*

A session is being organised with the theme:

**Cracking the Code to Gender Disparities in Creating a Knowledge Based Economy: Increasing Female Participation in STEM.**

Key presenters in this session will provide a global perspective and then academics or political representatives from the Caribbean and other countries will highlight the situation with STEM in their countries. The outcome from the session will be to identify a committed team that can produce a status report with recommendations to reduce whatever disparities are uncovered and improve productivity in Latin America and the Caribbean.

## ABSTRACTS FOR ORAL AND POSTER PRESENTATIONS ARE INVITED

### Preparation of Abstracts

Each oral and poster presentation to be made during the conference requires an Abstract to be submitted. The deadline for all Abstracts is 30 June 2018. These should be sent to KitFai.Pun@sta.uwi.edu (Attn.: Professor Kit Fai Pun) for review, a copy should also be sent to conference@caswi.org. **Undergraduate and Postgraduate Students submitting Abstracts of their presentations should indicate this as it may help in securing funding from your territory.**

One author should preferably be a member of the Academy.\* *Note that CAS members pay a reduced Registration fee as an additional encouragement to join.*

Abstracts must be typed to fit on a single sheet of A4 or letter size paper using Calibri or Times New Roman in Microsoft Word 2007 as a minimum. The title should be in 12-point font and everything else in 11-point font.

**Typing should be fully justified, with 2.5 cm or one-inch margins at the top and at each side; a minimum of 2.5 cm or one inch must be left at the bottom of the page. The entire abstract, including title, name of the author(s), affiliation(s), text and acknowledgements should be typed within these limits.**

The Abstract title should be centred and typed in **bold**, 'title style' in Calibri or Times New Roman (12\_point font). On the next line the Author(s) name(s), (lower case, 11-point font, in **BOLD**) should be written as First name, middle initial(s) followed by family name(s). Author(s) name(s) must be centred and separated by semicolons, underlining the name of the person who will present the paper. On the next line (i.e. no extra line spaces) the Institution(s) of the author(s) must be typed in italics (NOT IN BOLD) and centred. When authors originate from different institutions the authors and the institutions should be numbered using superscripts to the top right of the names and the top left of the institutions.

Following this, the email address of at least the presenter should be included.

The body of the Abstract (without any sub-headings) should start two line spaces below the institutional identification. The text should be typed using one and a half line spacing with an extra space separating paragraphs. Paragraphs should NOT be indented.

**It is suggested that Abstracts include: A definition of the problem, a working hypothesis, main methods or techniques employed, results, discussions and conclusions.**

This should be followed by **Keywords**



**Abstract Submission Deadline  
31st August 2018**

## Sample Abstract

### A SIMPLE MATHEMATICAL MODEL FOR SLAKING SENSITIVITY ASSESSMENT IN TRINIDADIAN SOILS UNDER INTENSE RAINFALL

Mark N. Wuddivira<sup>1</sup>; Reynold J. Stone<sup>2</sup>; and Edwin I. Ekwue<sup>3</sup>

<sup>1,2</sup>Faculty of Science and Agriculture and <sup>3</sup>Faculty of Engineering, The University of the West Indies, St. Augustine, Trinidad and Tobago, West Indies.

<sup>1</sup>Email: wuravnakka@yahoo.com

<sup>2</sup>Email: Reynold.Stone@sta.uwi.edu

<sup>3</sup>Email: ekwue@eng.uwi.tt

**Abstract:** A knowledge of soil slaking sensitivity (SS) as measured by aggregate stability, seal formation and erodibility is necessary for the selection of appropriate soil management practices to avoid soil structure deterioration with resultant runoff, seal formation and erosion. This is especially important in areas with high intense rainfall and intermittent dry spells like the humid tropical Caribbean region. Unfortunately, field and laboratory assessments of SS are tedious, time consuming and expensive. Therefore, a simple mathematical model that provides a rapid assessment of SS was developed using readily available soil data of fourteen Trinidadian soils, namely, clay content, organic matter content, exchangeable sodium percentage and cation exchange capacity. The model was subsequently tested on nine other agriculturally important Trinidadian soils and performed with a high degree of accuracy as the predicted values were in close agreement with measured values ( $r = 0.93$ ). The model is therefore recommended for use in Trinidad. However, more comprehensive testing is required on a broader range of Caribbean soils prior to its more widespread application in the Caribbean region.

**Keywords:** Soil slaking sensitivity, mathematical model, rainfall, Water stable aggregates, rapid wetting

## Preparation of Posters

Posters should be a maximum of 112 cm x 112 cm (44" x 44").

A maximum of two posters per person will be allowed.

The following information should appear on each poster:

- |  |   |
|--|---|
| <b>a. Title</b>                                  | <b>b. Poster number (As assigned)</b>       |
| <b>c. Name(s) of Author(s)</b>                   | <b>d. Name of each Author's Institution</b> |
| <b>e. Email address of presenter</b>             | <b>f. Abstract</b>                          |
| <b>f. Introduction</b>                           | <b>g. Methods</b>                           |
| <b>h. Results (including Tables and Figures)</b> | <b>i. Discussion</b>                        |
| <b>j. Conclusions</b>                            | <b>k. References</b>                        |

## Publication Policy

All Abstracts accepted for the Conference will be published in the CAS e-Journal.

In addition, CAS extends an invitation to authors to have their full papers published in the CAS e-Journal. Note however that CAS reserves the right to reject any paper it deems unsuitable for publication in its journal.

The deadline for the submission of **full papers is 14 December 2018**.

Persons wishing to have their full papers published should upload their manuscripts directly to the CAS e-Journal; to do so please follow the instructions for preparation and uploading at <http://www.caswi.org.jm/ejournal>

Those without UWI Mona accounts will need to create a free account for the journal to log in.

**For further information contact:**

Emeritus Professor Robert Lancashire: [rjlanc@caswi.org](mailto:rjlanc@caswi.org)

## DRAFT Conference Time Table (November 2018)

Day 1	27 November	9.00 am – 9.30 am	Registration
Day 1	27 November	10.00 am – 10.30 am	Opening Ceremony
Day 1	27 November	11.00 am – 4.00 pm 1.30 pm – 4.30 pm	Main Conference CAS General Meeting
Day 1	27 November	6.30 pm– 9.30 pm	Cocktail Reception (Free to all Conference and Pre-conference Participants)
Day 2	28 November	8.30 am– 6.00 pm	Main Conference: Oral and Poster Presentations
Day 3	29 November	7.30 pm	Conference Banquet: (Free to all Conference and Pre-conference Participants)
Day 3	29 November	8.30 am– 4.30 pm	Main Conference: Oral and Poster Presentations
Day 4	30 November**	8.30 am– 4.30 pm	Main Conference Shopping, Sight Seeing Tours (subject to demand)

Plenary lectures will be allocated 60 minutes including time for Q/A.

Sessional lectures will be allocated 30 minutes including time for Q/A.

General Lectures will be allocate 20 minutes including time for Q/A.

## Registration

Registration for the Conference can be done by EMAIL or FAX. Note that Registration will only be considered to have been completed on receipt of the appropriate fee.

### Registration Fees

(Payable in US Dollars)	Before 31 July 2018 US\$	After 31 July 2018 US\$
<b>Members</b>	\$250.00	\$275.00
<b>Non-Members *</b>	\$300.00	\$325.00
<b>Students</b>	\$100.00	\$125.00
<b>Daily</b>	\$100.00	\$100.00
<b>Guest (accompanying person)</b>	\$50.00	\$50.00

\*Note: Current Membership Fee for CASJ is US \$ 25

## Accommodation

A selection of hotels for the conference are listed below: Special rates apply to registered participants. **Please indicate that you will be attending the CAS conference at The UWI when booking.**

### On campus

**Mona Visitors' Lodge** – 14 rooms Reserved for Plenary Speakers

**138 Student Living** – **under US 100 per night**, breakfast at the Mona Visitors' Lodge;  
reservations need to be made through the Lodge to obtain Breakfast included in the price

Mona Visitors' Lodge and Conference Centre and 138 Student Living	Contact: Sandra Blair san- dra.blair@uwimona.edu.jm
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### Off Campus Options where prices range from US \$120-200

#### per night including breakfast and all taxes:

**Christar Villas Hotel**, 99A Hope Road, Kingston 6, Phone: (876) 978-3933 ,978-8066-71 (2 km)

Email: christarvillas@gmail.com

<http://www.christarvillashotelja.com/>

*Christar Villas can be booked by the Mona Visitor's Lodge, to include breakfast at the Lodge.*

**The Jamaica Pegasus**, 81 Knutsford Blvd, Kingston 5 Phone: (876) 926-3690 (8.7 km)

Email: reservations@jamaicapegasus.com

<http://www.jamaicapegasus.com/>

**The Courtleigh**, 85 Knutsford Blvd, Kingston 5, Phone: (876) 936-3570

Email: sales@courtleigh.com (8.6 km)

<http://courtleigh.com/>

**The Liguanea Club**, Knutsford Blvd, Kingston 5, (876) 926-8144-6 (8.6 km)

Email:salesmanager@theliguaneacub.com

<https://www.theliguaneacub.com/>

**The Knutsford Court**, 16 Chelsea Ave, Kingston 5, Phone: (876) 929-1000 (8.2 km )

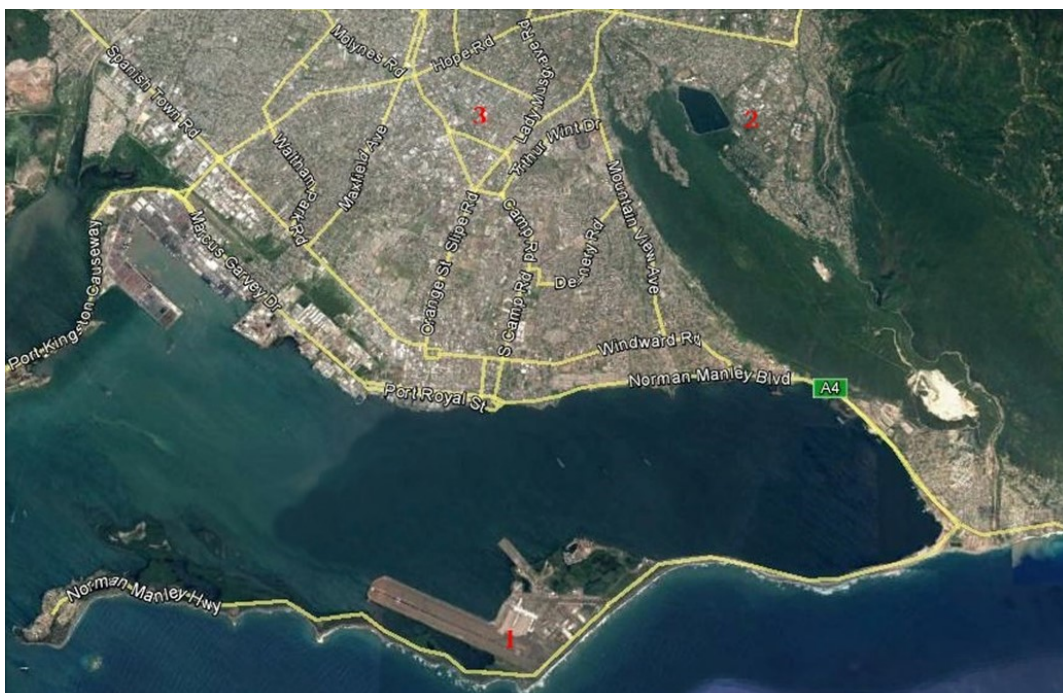
Email: sales@knutsfordcourt.com

<http://www.knutsfordcourt.com/>

**Hotel Four Seasons**, 18 Ruthven Road, Kingston 10, Jamaica (876) 926 8805 (9.0 km)

Email: reservations@hfsjm.com

<http://www.hotelfourseasonsjam.com/>



1 Norman Manley International Airport    2 The UWI, Mona Campus    3 Hotel District in New Kingston

## **Entitlements of Fee-Paying Participants**

In addition to conference literature, payment of conference fees entitles participants to lunch and snacks served during the refreshment breaks. The Opening Ceremony and Cultural Evening are free to all Registered Participants.

## **Method of Payment**

Payment can be made by US Dollar account of The Caribbean Academy of Sciences, Jamaica Account No. 404346989 at The National Commercial Bank, UWI Campus Branch, Mona Jamaica (Swift JNCBJMFX Overseas transfer not advised due to both Foreign and local Charges). Persons holding Jamaican \$ Accounts may pay the US Dollar equivalent to the NCB Jamaican Dollar Account No.401035737. Credit card facilities will be available at Registration so for overseas delegates this is the best option.

**All participants should travel to the Conference with their proof of payment.**

RETURN COMPLETED REGISTRATION FORM AND FEES TO:

Caribbean Academy of Sciences, Jamaica (CASJ)

Conference Secretariat

2 Plymouth Crescent

The University of the West

Indies

Mona, Kingston 7

Jamaica, West Indies

Tel/Fax: (876) 977-7764

For Conference updates,

visit the CAS website: [http://www.caswi.org/cas\\_home/cas-general-meetings](http://www.caswi.org/cas_home/cas-general-meetings)

**Persons interested in attending the Conference are requested to complete the registration form and return it to the CAS Secretariat.**

Caribbean Academy of Sciences, Jamaica  
2 Plymouth Crescent  
The University of the West Indies  
Mona Campus  
Kingston 7  
Jamaica



(CASJ) Secretariat  
Englebert Davis  
englebert@caswi.org  
Tel/Fax: 876-977-7764  
876-935-8788  
<http://www.caswi.org>  
<http://www.caswi.org.jm>

21<sup>st</sup> General Meeting  
The Caribbean Academy of Sciences  
Kingston, Jamaica  
27-30 November 2018

**“Science, Technology and Innovation:  
Vehicles for a Knowledge Based Economy”**

Title: Mr. Mrs. Ms. Dr. Prof. Other (specify):

Surname:

Discipline:

First Name:

Phone:

Institution:

Fax:

Address:

E-Mail:

	Yes	No		Yes	No	Oral	Poster
Presenting a Paper?			Abstract submitted?			Presentation preference:	

Subject to demand, shopping, sightseeing tours and day trips can be arranged for those attending the conference.

I am interested in:                      shopping                      sightseeing trip                      day trip