

## DEPARTMENT OF PHYSICS



**Dr. Tannecia Stephenson, BSc, PhD UWI**  
Head of Department

### OVERVIEW

The primary initiatives undertaken by the Department of Physics in 2017–2018 were the development of new undergraduate renewable energy and electronics courses and programmes as well as the revision of existing electronics programmes. Marketing initiatives were also pursued and a mentorship programme for level 1 students launched.

### UNDERGRADUATE CURRICULUM AND STUDENT EXPERIENCE

Two new courses were approved for offer in the 2017–2018 academic year. They are Essentials of Renewable Technologies and Solutions (PHYS2701) and Advanced Renewable Energy Technologies and Solutions (PHYS3701). Courses will be open to all students of The UWI. A new minor in Renewable Energy Management was developed and is pending approval by The UWI Academic Quality Assurance Committee (AQAC).

Proposals for revisions to the undergraduate electronics programme were developed and included (i) revision of Major in Electronics; (ii) revision of the B.Sc. in Electronics and Computer Science and (iii) a new B.Sc. in Electronics System Analysis and Design. Proposals are pending approval by AQAC.

Course evaluations continue to yield positive feedback generally across all courses. However, course numbers at the preliminary and introductory levels continue to decline. The internship course, Physics in Practice (PHY3400) launched in 2016 enabled internship placements for two (2) students during summer 2018.

The Physics and Engineering Honours Society continues to laud the excellent performance of physics and engineering students each semester. In 2017–2018 approximately thirty (30) Physics students and thirty-seven (37) Engineering students were inducted. Approximately 30 students completed the requirements for majors in the Department. One student graduated with First Class Honours.

## **STAFF**

The Department of Physics expanded its staff complement. Dr. Masao Ashtine, Lecturer in Renewable Energy and Climate Studies, joined the staff in January 2017. Other new staff include: Miss Shantel Gordon (Office Attendant), Mr. Devon Lewis (Technical Assistant), Miss Leonie Stull (Secretary) and Miss Stephanie Hazle (Marketing Consultant).

## **RESEARCH AND GRADUATE ACTIVITY**

There are five (5) active Research Groups that continue to attract research grants and consultancies and to publish in their respective disciplines. Research areas include Statistical and Dynamic Downscaling of Climate Data, Evaluation of Renewable Energy Technologies and Modelling Renewable Energy Resources, Examination of the effect of wireless devices used on human health in realistic environments, Compact Stars in General Relativity and Astrophysics. BioGlass, Novel Application of

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Optics, Human Speech Recognition, the Detection of essential, toxic and radioactive elements in biological samples and Characterization of Materials post a fire event and Satellite Prototype Development.

The Department produced twenty-three (23) publications. Six of the publications were co-authored by Graduate Students.

The Department participated in the Annual Research Days held February 2018. Recipients of awards included:

- *Professor Mitko Voutchkov* – Most Outstanding Researcher for the seven publications;
- *Dr. Venkateswara Penugonda* – Best Research Publication – paper entitled “Structural Investigations on  $P_2O_5$ -CaO-Na $_2$ O-K $_2$ O: SrO Bioactive Glass Ceramics”;
- *The Climate Studies Group Mona (CSGM)* – Most Outstanding Research Activity for its Project “The State of the Jamaican Climate 2015”.

Graduate enrolment was thirty-two (32) research students and twenty-six (26) M.Sc. students. Several students participated in international and local conferences and international exchanges.

A Ph.D. was awarded to Miss Phylicia Ricketts and three M.Phil.’s were awarded to Mr. Davaugh Sanderson, Miss. Natalie Mclean and Ms. Rochelle Walters. The first M.Sc. degree in Renewable Energy Management was awarded to Miss Christene Campbell. Two M.Sc.’s in Medical Physics were also awarded.

## INTERNSHIPS

Mr. Anthony Bryan, undergraduate student pursuing a major in Electronics participated in the Huawei Seeds for the Future 2017 Internship Programme October 27–November 11, 2017. The 2-week study visit to China included a one week visit to the Huawei Headquarters in Shenzhen. Dr. Candice Delisser, an undergraduate Physics major and Mr. Nevord Robinson, a final year Medical Physics major were selected for a 2-week course of study at the Sophia University in Japan in January 2018.

The Department hosted two interns from the Caribbean Catastrophe Risk Insurance Facility (CCRIF) during August–September 2017. Interns were Miss Danielle Nurse (Barbados) and Anila Maharaj (Trinidad).

### **STAFF RESEARCH VISITS**

Dr. Phylicia Ricketts conducted short term research at the University of Ottawa, Centre for Advanced Research in Environmental Genomics (CAREG) - Canada from June 1–July 31, 2018. The programme included using various lab equipment to measure Mercury, Arsenic, Selenium and omega fatty acids in Jamaican fish samples. The results were used to develop a fish consumption advisory for Jamaica. The research was funded by The Royal Society. Dr. Tanya Kerr participated in a training and research visit to University of Waterloo, Ontario, Canada to do modelling of compartment fire dynamics on July 23–August 7, 2018. Dr. Venkateswara Penugonda participated in a research visit to FunGlass - Centre for Functional and Surface Functionalized Glass at Alexander Dubček University of Trenčín, Slovakia from July 1–August 27, 2018. The aim of the visit was to conduct glass science research on Bismuth-Borate-Tellurite Glasses. Visit was funded by The UWI and the Slovakian Government National Scholarship Programme.

### **MARKETING AND OUTREACH**

The annual Physics CAPE Workshop was held in Kingston at the UWI, Mona Campus January 9–12 and 19, 2018 and at the UWI, Western Jamaica Campus on January 16–17, 2018. Over the 7 days, over 800 students from over 20 schools participated in lectures and laboratory sessions for Unit 1, Simple Harmonic Motion, and for Unit 2, Operational Amplifiers. Facilitators were from the Department of Physics and the Mona School of Engineering and included lecturers, undergraduate students, postgraduate students, and alumni. The organization was done in collaboration with other Departments within the Faculty of Science and Technology. The Department of Physics also launched a new website and Facebook page during the academic year.

## **PUBLIC FORUMS**

The Vice Chancellor's Office in collaboration with the Departments of Economics and Physics and The Institute for Sustainable Development hosted a panel discussion on "Irma and Maria: Relief, Reconstruction and Reparations" on October 19, 2017 in the Council Room at Regional Headquarters, The UWI, Mona. Professor Taylor presented on "Making sense out of Irma and Maria from a Science Perspective".

The Department of Physics in collaboration with the Department of Economics, UWI, International Monetary Fund, and the Caribbean Policy Research Institute hosted a Policy Discussion Forum entitled "Hurricane and The Caribbean Risk, Resilience and Response" on October 23, 2017 at The UWI Regional Headquarters. The policy discussion forum explored areas such as storm impact on growth and sustainable development, changing storm frequency and intensity, disaster management and regional response.

## **WORKSHOPS AND CONFERENCES HOSTED**

The Department of Physics participated in the 11th Faculty of Science and Technology Conference held April 25–27, 2018 in the Faculty of Science and Technology. The Department had 13 oral and 9 poster presentations including 3 displays and was integral in hosting two of the special sessions. Five representatives from the Department also served on the Organizing Committee and four representatives were members of the Secretariat. Drs. Tannecia Stephenson and Daniel Fokum were co-chairs of the conference. Messrs. Jayaka Campbell, Phillip Logan, Andre Gordon, Andrew Johnson and Jeremy Hall were winners of the Conference's inaugural Grand Innovation Challenge Competition for their concept Squad-E. Miss Pietra Brown, Miss Candice Charlton and Miss Christina Douglas were finalists in the Grand Innovation Challenge Competition and received one of the consolation prizes. Their concept was entitled Climate Lifestyle Application.

A 2-week Workshop on Crop Simulation Modelling was held July 16-

27, 2018. Twenty-six participants from six (6) Caribbean islands participated. Organizers were Drs. Dale Rankine (Department of Physics) and Jane Cohen (Department of Life Sciences). Two Climate Workshops were hosted July 23–25, 2018. The first workshop held July 23–24, was in partnership with the University of Bristol under the Cyclone Risk in Small Island States (CRISIS) initiative. A Caribbean Climate Modellers' Consortium Meeting was held July 25 and reviewed advances made in the Caribbean Climate Science Agenda. Meetings were organized by teams from The UWI and Bristol.

### **Infrastructure Upgrade:**

Renovations to the Material Science lab and the Support Staff Computer Room and Washroom were completed.

### **Pre-Labour Day Project**

Pre-Labour Day activities were undertaken on Friday, May 11, 2018. Activities included the addition of plants to the quadrangle area, installation of irrigation systems and additional outdoor seating for students, and painting of the face wall of the Virtual Lab as well as the picket fences surrounding the garden at the entrance of the Department.

### **Recognition and Awards**

Mr. Delando Grant was recognized at the Annual Faculty Awards Ceremony held in March 2018 for graduating with the highest GPA (4.14) across all FST disciplines.

The University of the West Indies Mona Robotics Team comprised of Yekini Wallen-Bryan (Coach & Student Advisor), Kriston Kong (IEEE chair), Stefan Holness (Co-Hardware Captain), Brandon Campbell (Co-Hardware Captain), Shane Smith, Jourdan Dunkley and Kaycilee Wright placed third in the IEEE 2018 SouthEastCon Hardware(Robotics) Competition on April 18–22, 2018. The IEEE 2018 SouthEastCon Hardware (Robotics) Competition facilitated participants from over 60

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Universities from the IEEE region. Universities had to build a fully autonomous robot, so that once the robot was powered on, it would have a mind of its own and execute its task without any human control. This is the 3rd consecutive year that UWI Mona has successfully made it to the finals.

### STAFF AWARDS:

Miss Marva Anderson was awarded Distinguished Worker Award Service Staff (UAWU) at the Annual Faculty Awards Ceremony held on March 22, 2018. Miss Natalie Mclean was also a recipient of the Distinguished Worker Award (MONATS) for Administrative and Laboratory Services. Dr. Venkateswara Penugonda placed second in the Jamaica Joint Committee for Tertiary Education (JCTE) Educator of the year-2017.

### DEPARTMENTAL STATISTICS

**Table 1:** Total Undergraduate Student Registrationsm

	Semester 1	Semester 2
Preliminary	77 (79)	56 (65)
Introductory Physics	146 (144)	102 (143)
Year 2	106 (115)	94 (126)
Year 3	57 (63)	72 (75)
<b>Totals</b>	<b>386 (401)</b>	<b>324 (409)</b>

\*Values in bracket are corresponding values for the previous year.

### Post Graduate Student Enrolment:

Postgraduate student enrolment is outlined below:

M.Phil. – Twenty-seven (27) Students (F\T and P\T); Ph.D. – Five (5) Students; M.Sc. – Twenty-six (26) Students (all year).

## Prizes Awarded

The Professor John Lodenquai Prize for Introductory Physics: Jarvis Hayman; Level II Physics Bursaries: Mario Braham & Nashell Wright  
Michael Tharmanathan Physics Bursary: Andrew McCartney

## Significant Funding

Mr. Dudley Williams was awarded a grant of J\$2.1 million from the Environmental Foundation of Jamaica for the project entitled: “Radiative Cooling: A Climate Adaptation Strategy for the Agro-Industry”.

## PUBLICATIONS

### Books & Monographs

- P. Syam Prasad, **P. Venkateswara Rao**: “Structural and Luminescence Properties of Tellurite Glasses for Laser Applications” Springer International Publishing AG, part of Springer Nature 2018 R. El-Mallawany (ed.), Tellurite Glass Smart Materials, ISBN: 978-3-319-76567-9

### Refereed Journal Articles

- **R. Koon Koon**, R., and Ufondu, L. 2017. “A Thermal Analysis into the Region of Regina, Saskatchewan, Canada for Geothermal Energy Prospecting”. *International Advanced Research Journal in Science, Engineering, and Technology*, 4 (9), pp 88–94, DOI10.17148/IARJSET.2017.4913. **IF 0.93**
- **R. Koon Koon**, R., and Haraksingh, I. 2017. “Subsurface temperature analysis along the Williston Basin, Canada for geothermal energy prospecting”. *International Journal of Advanced Science and Research*, 2 (5), pp 27–32.
- S. Cunningham, P. Green, H. Christensen, J.J. Atria, **A. Coy**, M. Malavasi, L. Desideri and F. Rudzicz, 2017. “Cloud-Based Speech



Technology for Assistive Technology Applications (CloudCAST)”, *Studies in Health Technology and Informatics*, 242, pp.322–329. **IF 0.54**

- M. Malavasi, E. Turri, J.J. Atria, H. Christensen, R. Marxer, L. Desideri, **A Coy**, F. Tamburini, P. Green, 2017. “An Innovative Speech-Based User Interface for Smarthomes and IoT Solutions to Help People with Speech and Motor Disabilities”. *Studies in Health Technology and Informatics*, 242, pp.306-313. **IF 0.54**
- M. Bakir, M. A. W. Lawrence, **M. Ferhat**, R. R. Conry “Spectroscopic, Electrochemical and X-ray Crystallographic Properties of a Novel Palladium (II) Complex of Thioamide Deprotonated di-2-pyridyl Ketone Thiosemicarbazone (dpktsc-H)”. *Journal of Coordination Chemistry*. <http://dx.doi.org.10.1080/00958972.2017.1374379>. **IF 1.703**
- N A. Mahammedi, **M. Ferhat**, T. Chikyow, T. Tsumuraya “Prediction of Optically-Active Transitions in the Type-VIII Guest-Free Silicon Clathrate Si46: A Comparative Study of its Physical Properties with the Type-I Counterpart Through First-Principles”. *Journal of Applied Physics* 122, 205103, 2017. <https://doi.org/10.1063/1.4999985>. **IF: 2.101.**
- L. Srinivasa Rao, T. Venkatappa Rao, Sd. Naheed, **P. Venkateswara Rao**, 2018: “Structural and Optical Properties of Zinc Magnesium Oxide Nanoparticles Synthesized by Chemical Co-precipitation”. *Materials Chemistry and Physics*, 203, 133-140. **IF 2.084**
- Ch. Vijaya Kumari, V. Ravi Kumar, P. Sobhanachalam, **P. Venkateswara Rao**, G. Sahaya Baskaran c, N. Veeraiah, 2018: “In Vitro Degradation Studies on Bioactive Calcium Fluoroborophosphate Glasses Mixed with Some Modifier Oxides-influence of Therapeutically Active Vanadium Ions”. *Materials Chemistry and Physics*, 205, 376-390. **IF 2.084**
- **M. A. Taylor, L.A. Clarke**, A. Centella, A. Bezanilla, **T.S. Stephenson, J.J. Jones, J.D. Campbell**, A. Vichot, and J. Charlery, 0: “Future Caribbean Climates in a World of Rising Temperatures: The 1.5 vs

2.0 Dilemma”. *J. Climate*, **0**, <https://doi.org/10.1175/JCLI-D-17-0074.1>. **IF 4.805**

- K. Kahlouche, R. Jijie, I. Hosu, A. Barras, T. Gharbi, R. Yahiaoui, G. Herlem, **M. Ferhat**, S. Szunerits and R. Boukherroub “Controlled modification of electrochemical microsystems with polyethylenimine/reduced graphene oxide using electrophoretic deposition: Sensing of dopamine levels in meat samples” *Talanta*, 178, pp 432, 2018. <http://dx.doi.org/10.1016/j.talanta.2017.09.065>. **IF 3.545**
- L. Down, **M. A. Taylor**, and **K. Stephenson**, 2018: Introduction, *Caribbean Quarterly*, 64:1, 3-4, DOI: 10.1080/00086495.2018.1435285.
- **K. Stephenson**, **M. A. Taylor**, **T. S. Stephenson**, A. Centella, A. Bezanilla & J. Charlery, 2018: “The Regional Climate Science Initiative”, *Caribbean Quarterly*, 64:1, pp 11–25, DOI: 10.1080/00086495.2018.1435314
- **T. S. Stephenson**, **M. A. Taylor**, A. R. Trotman, C. J. Van Meerbeeck, V. Marcellin, K. Kerr, **J. D. Campbell**, J. M. Spence, G. Tamar, M. Hernández Sosa, and **K. Stephenson**, 2018: [Regional Climates] Caribbean [in State of the Climate in 2017]. *Bull. Amer. Meteor. Soc.*, 99 (8), S200-203 **IF 7.929**
- **L. Henderson**, and **M. Ferhat**, 2018. “Investigating the Effect of Rare-Earth Photoanode Doping on Dye-Sensitised Solar Cell Electrical Performance”. *Materials Science Forum*, 928, pp 123-129, DOI: <https://doi.org/10.4028/www.scientific.net/MSF.928.123>. **IF 0.28**
- D. Batic, M. Nowakowski, and **K. Redway**, 2018. “Some exact quasi-normal frequencies of a massless scalar field in the Schwarzschild space-time”. *Phys. Rev. D*, 98, 024017, DOI: 10.1103/PhysRevD.98.024017. **IF 3.93**
- **D. Sanderson**, **M. Voutchkov** and N. Benkeblia, “Bioaccumulation of cadmium in potato tuber grown on naturally high Levels soil cadmium in Jamaica”, *Science of the Total Environment*, 649, **2018**, 909–915. **IF 4.900**

## Reports

- Climate Studies Group, Mona (CSGM), 2017: “State of the Jamaican Climate 2015: Information for Resilience Building” (Summary for Policy Makers). Produced for the Planning Institute of Jamaica (PIOJ), 16 Oxford Road, Kingston 5 Jamaica. 42 pp.
- Climate Studies Group, Mona (CSGM), 2017: “State of the Jamaican Climate 2015: Information for Resilience Building” (Full Report). Produced for the Planning Institute of Jamaica (PIOJ), Kingston Jamaica. 187 pp.
- Climate Studies Group, Mona (CSGM), 2017: “Belize: Historical Trends and Future Climate Changes”.

## Peer-reviewed Conference Proceedings

- **Masao Ashtine**, 2018. Gust parameterizations used to estimate shutdown periods of wind farms. Poster. 11th Faculty of Science and Technology Conference, Kingston Jamaica, April 25–27, 2018.
- **Alrick Brown, Tannecia Stephenson, Jayaka Campbell** and Arpital Mandal, 2018. Move it to the left, move it to the right: A SMASH-ing Hurricane Tool for decision makers. Oral. 11th Faculty of Science and Technology Conference, Kingston Jamaica, April 25–27, 2018.
- **Kandyce Brown** and **Victor Douse**, 2018. Improving the skid resistance and reflectance of the road surface using crushed recycled glass. Oral. 11th Faculty of Science and Technology Conference, Kingston Jamaica, April 25–27, 2018
- **Lawrence Brown, Mitko Voutchkov** and Paul Whitfield, 2018. Cosmic Ray Muons flux and its relation to dry season rainfall over Jamaica. Poster. 11th Faculty of Science and Technology Conference, Kingston Jamaica, April 25–27, 2018.
- **Pietra Brown** and **Michael Taylor**, 2018. Mapping climate change impacts on key economic sectors. Poster. 11th Faculty of Science and Technology Conference, Kingston Jamaica, April 25–27, 2018.

- **Candice Charlton, Tannecia Stephenson and Michael Taylor**, 2018. Examining drought and bushfire activity in Jamaica using the Keetch-Byram drought index. Poster. 11th Faculty of Science and Technology Conference, Kingston Jamaica, April 25–27, 2018
- **Jayaka Campbell, Michael Taylor, Tannecia Stephenson, Kimberly Stephenson**, Abel Centella and Arnoldo Bezanilla. Imminent, distant or unlikely. Evaluating Paris Accord thresholds for the Caribbean from a high-resolution regional climate model ensemble. Oral. 11th Faculty of Science and Technology Conference, Kingston Jamaica, April 25–27, 2018.
- **Alton Daley**, 2018. An in-depth investigation into Jamaica's Wave Energy Resources using Buoy, Altimetric and Modelled Data. Oral. 11th Faculty of Science and Technology Conference, Kingston Jamaica, April 25–27, 2018
- **Christina Douglas, Tannecia Stephenson and Michael Taylor**, 2018. Investigating Jamaican rainfall decadal variability, its linkage to the Atlantic and Pacific Oceans and projections using PRECIS and CMIP5 Climate Models. Poster. 11th Faculty of Science and Technology Conference, Kingston Jamaica, April 25–27, 2018.
- **Mario Eunick and Louis-Ray Harris**, 2018. Investigating the Behaviour of Wireless Signals in Indoor Environments. Poster. 11th Faculty of Science and Technology Conference, Kingston Jamaica, April 25–27, 2018
- **Adwalia Fevrier-Paul**, Adedamola Soyibo, Nimal DeSilva, Sylvia Mitchell and **Mitko Voutchkov**. Evaluation of whole blood elemental trends in end stage renal disease patients in Jamaica. Poster. 11th Faculty of Science and Technology Conference, Kingston Jamaica, April 25–27, 2018
- **Adwalia Fevrier-Paul**, Adedamola Soyibo, Nimal DeSilva, Sylvia Mitchell and **Mitko Voutchkov**. Effect of Haemodialysis on trace element status in whole blood of Jamaican End Stage Renal Disease Patients. Poster. 11th Faculty of Science and Technology Conference, Kingston Jamaica, April 25–27, 2018.

- **Sheldon Grant**, 2018. The El Nino-Southern Oscillation (ENSO) phase and Tropical North Atlantic Sea Surface Temperature Anomalies on Wet Season Onset Dates (WSOD) in the eastern Caribbean. Oral. 11th Faculty of Science and Technology Conference, Kingston Jamaica, April 25–27, 2018.
- **Louis-Ray Harris, Jevaughn Dixon, Brandon Campbell, Sean McBean, Michael Mullings, Lenworth Cooke and Michael Holness**, 2018. The Caribbean in Space: Can We Do It?. Oral. 11th Faculty of Science and Technology Conference, Kingston Jamaica, April 25–27, 2018.
- **Leaford Henderson and Marhoun Ferhat**, 2018. Fabricaiton and electrochemical characterization of rare-earth doped sensitized solar cells. Oral. 11th Faculty of Science and Technology Conference, Kingston Jamaica, April 25–27, 2018
- **Craig Rattray**, 2018. Novel low-cost image-based solar tracker via Maximum Intensity Mapping. Oral. 11th Faculty of Science and Technology Conference, Kingston Jamaica, April 25–27, 2018
- **Karlus Redway and Venakteswara Penugonda**, 2018. Quasi-normal modes of non-commutative geometry inspire black hole solutions. Oral. 11th Faculty of Science and Technology Conference, Kingston Jamaica, April 25–27, 2018
- **Phylisia Ricketts, Mitko Voutchkov, Andre Gordon** and Christopher Knight, 2018. Assessment of the mercury exposure using skin lightening products in Jamaica. Poster. 11th Faculty of Science and Technology Conference, Kingston Jamaica, April 25–27, 2018.
- **Kimberly Stephenson, Michael Taylor** and Byron Wilson, 2018. Using Generalized Linear Mixed Modelling to project faunal abundance in a Caribbean dry forest under climate change. Oral. 11th Faculty of Science and Technology Conference, Kingston Jamaica, April 25–27, 2018
- **Yekini Wallen-Bryan**, 2018. Realization of a universal low-cost remote monitoring system for commercial photovoltaic energy

systems: Application in the Caribbean. Oral. 11th Faculty of Science and Technology Conference, Kingston Jamaica, April 25–27, 2018.

- **Rochelle Walters, Michael Taylor, Tannecia Stephenson, Kimberly Stephenson and Jayaka Campbell.** Past, present, persistent: An evaluation of Caribbean drought and its drivers. Oral. 11th Faculty of Science and Technology Conference, Kingston Jamaica, April 25–27, 2018.
- **Stefan Watson and Andre Coy,** 2018: Automatic Speech Recognition and Literacy: The development of models for the Jamaican Child. Oral. 11th Faculty of Science and Technology Conference, Kingston Jamaica, April 25–27, 2018.
- **Wilson Marltan and Venkateswara Penugonda,** 2018. Improvements in analysis and optimization of Bismuth-Barium-Borate Glasses with the use of numerical methods. Poster. 11th Faculty of Science and Technology Conference, Kingston Jamaica, April 25–27, 2018
- **Candice Charlton, Tannecia Stephenson, and Michael Taylor,** 2018. Investigating wildfire risk for a small island and the potential use of remotely sensed data: A Jamaica case study. Geophysical Research Abstracts, 20, EGU2018-16713-1, 2018; EGU General Assembly 2018.
- **Dale Rankine,** Jane Cohen, Cicero Lallo, **Michael Taylor, Jayaka Campbell,** and **Tannecia Stephenson,** 2018. Caribbean Food Security-The Future of Livestock in a Warmer Climate. Geophysical Research Abstracts, 20, EGU2018-1292, 2018; EGU General Assembly 2018.
- **Kimberly Stephenson, Michael Taylor,** and Byron Wilson, 2018. Modelling the Impact of Climate Change on a Caribbean Dry Forest Fauna. Geophysical Research Abstracts, 20, EGU2018-1276, 2018; EGU General Assembly 2018.
- G. Naga Raju, Ch. Chandrakala, **P. Venkateswara Rao,** Valluri. Ravi Kumar, P. Syam Prasad and P. Srinivas Roa “*Dielectric and Structural properties of PbO-Sb2O3-SiO2: Cr2O3 glass system*”, 2018. Proceedings of the National Conference on Materials for specific

Applications (MFSA 2018), Gokaraju Rangaraju Institute of Engineering and Technology (GRIET) 29–30th January 2018, Hyderabad India.

## **PUBLIC SERVICE**

### **Dr. Masao Ashtine**

- Member of the Energy and Environment Committee of the Private Sector Organization of Jamaica.

### **Dr. Andre Coy**

- Convener, Physics Panel for Caribbean Examination Council
- Reviewer Journals, IEEE Transactions on Audio, Speech and Language Processing, Computer Speech and Language, Instrumentation Science & Technology;
- Member IEEE Signal Processing Society;
- Member IEEE Communications Society;
- Member STEM Integration Committee – Ministry of Education;
- Advisor to the Ministry of Education – Core Curriculum Unit.

### **Dr. Victor Douse**

- Chairman, Cement Technical Committee, Bureau of Standards;
- Technical Assessor, Jamaica National Agency for Accreditation (JANAAC)
- Chairman, Aggregates Technical Committee;
- Vice Chairman, Building and Associated Materials Committee.

### **Dr. Leary Myers**

- Member of Hazardous Substances Regulatory Authority

### **Dr. Tannecia Stephenson**

- Member of Coordinated Regional Climate Downscaling Experiment Science Advisory Team

- Member, Steering Committee, Pilot Programme for Climate Resilience (Caribbean)
- Member of the Task Team on Guide to Climatological Practices (TT-GCP) of the World Meteorological Organization Fifth Open Panel of the Commission for Climatology (CCI) Experts (OPACE 5)
- Member of the World Meteorological Organization Extremes Committee

**Professor Michael Taylor**

- Member, Board, Water Resources Authority;
- Member, Climate Change Advisory Board, Ministry of Land, Water, Environment and Climate Change;
- Member, International Science Panel of VAMOS/CLIVAR;
- Member, Steering Committee, Pilot Programme for Climate Resilience (Caribbean);
- Reviewer Journals: *Journal of Geophysical Research*, *International Journal of Climatology*, *Journal of Climate*, *Climate Dynamics*, *Theoretical and Applied Climatology*, *Tellus A*.
- Coordinating Lead Author of the Intergovernmental Panel on Climate Change Special Report on Global Warming of 1.5°C

**Professor Mitko Voutchkov**

- Member, Board, International Centre for Environmental Nuclear Science (ICENS)
- Member, Jamaica's Energy Council, Ministry of Science Technology, Energy and Mining;
- Member of the Editorial Board of the West Indies Medical Journal
- Life Member, International Society of Environmental Geochemistry and Health;
- Chairman, Technical Advisory Committee “In-situ Methods for Characterization of Contaminated Sites”, International Atomic Energy Agency (IAEA);



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- IAEA Technical Co-operation Expert in Nuclear Physics.
- IAE Regional Co-ordinator of medical Physics Programme

### **Dr. Venkateswara Penugonda**

- Editorial Board Member for the Journal of Engineering Publication House
- Life member in Luminescence Society of India (LSI)