

# DEPARTMENT OF GEOGRAPHY AND GEOLOGY

Professor Simon F Mitchell, B.Sc. Hull, Ph.D. Liverpool – Head of Department



## WORK OF THE DEPARTMENT

Professor Simon F. Mitchell continued as head of the Department for the 2018-2019 academic year as well as continuing as Acting Head of the Earthquake Unit. Dr Mike Burn went on sabbatical leave and Dr S. Yoshi Maezumi undertook his teaching for the year. Dr David Miller continued as examinations coordinator. Emeritus Professor David Barker was appointed for a year to teach on the Geography program. Mr Kevin Tankoo was employed as an assistant lecturer to teach the course Petroleum Geology on the Geology Programme. Dr Robert Kinlock left the Department and Mr Alex Moulton was appointed for the year to cover his duties. Dr Arpita Mandal resumed her duties as coordinator of Graduate Students. Dr Sherene James-Williamson coordinated outreach, and Dr David Miller and Dr Thomas Stemann were section heads for the Geography and Geology programmes, respectively. Dr Sherene James-Williamson continued in her position as Associate Dean for Outreach in the Faculty of Science and Technology. The Department ran a full set of courses for the year despite having several vacant positions.

Dr Donovan Campbell continued his work as Lead Author for the Sixth Assessment Report for the Intergovernmental Panel on Climate Change (IPCC). He attended the First Lead Author Meeting for the IPCC Sixth Assessment Report in South Africa (21–25 January 2019), and the Fourth Lead Author Meeting for the IPCC in Colombia (11–15 February 2019).

Dr Mike Burn received the Mary Sears Award from Woods Hole Oceanographic Institution in August 2018 which allowed him and his graduate student, Romario Anderson, to visit the Coastal Geosystems Group in the University of Massachusetts at Amherst to develop collaborative links, exchange ideas about long term records of environmental change, and to develop research capacity within the Department. In June 2019 a dendrochronology laboratory was established to enhance capacity in palaeoclimatology within the Department in collaboration with Drs. S. Maezumi

(Amsterdam) and Csank (University of Nevada, Reno) and funded by a National Geographic Grant to Drs. Maezumi and Burn. The Caribbean Environments Research Group (CERG) was established to facilitate and market interdisciplinary research on the broad theme of Environmental Change.

Work continued on various research projects in the Department including: the World Bank Project “Assessment and Economic Valuation of Coastal Protection Services Provided by Mangroves in Jamaica” and the IDB project “Sediment Budget Monitoring of the Upper Rio Minho Basin.”

Staff were involved in various workshops and meetings throughout the year. Dr Arpita Mandal attended and presented at the Caribbean Modellers Meeting, 6-8th August 2018, UWI Dept of Physics. Dr. Sherene James-Williamson was a panelist at the “Virtual Museums in the Caribbean: Experience and Opportunity” at the International Museums Conference on 9th November 2018, and a panelist at the International Museums Conference Roundtable at Cave Hill, Barbados, 9th November 2018.

Various staff members presented at the Brown Bag seminars in the Department, including: Dr. Sherene James-Williamson: “The Musings of a geologist in love with archaeology” on the 21st February 2019; Dr Thera Edwards: “A Diamond in the Rough: the Royal Holloway Aerial Photograph Collection” on 15th March 2018.

The Department had many outreach activities during the year. The Department hosted a mapathon in collaboration with the National Spatial Data Management Division (Ministry of Economic Growth and Job Creation) during GIS Day (14th November 2018) and UWI Research Days (February 7, 2019). During the UWI Research Days (6–8, February 2019) the Department had a research booth manned by students from the UWI Geological and UWI Geographical societies. The UWI Geology Museum saw approximately 600 persons this year from UWI Research Days, GIS Day and School visits.

The Rio Minho sediment project (Arpita Mandal (PI), Simon Mitchell (Research Scientists), David Miller, Donovan Blissett, Rupert Green, Brian Lynch, Melissa Curtis, Kristina Dougherty, Peta-Gay Harris, Denese Francis) received the Principal’s Award for attracting the most money (US\$214,189) at UWI Research Days in February, 2019. Miss Melisa Curtis received the Graduate Scholar Award at ESRI User Conference in San Diego from 8–12, July, 2019. Miss Shaughna-Lee Steel was selected to participate in the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) Youth Workshop from the 27–28th June 2019 in São Pedro, Brazil.

Professor Edward (Ted) Robinson donated a Table Stereoscope and a Screenscope to the Department.

**PAPERS PRESENTED**

- Mike J. Burn and S. E. Palmer. “Harmonizing marine and terrestrial palaeoclimate archives to reconstruct hurricane activity in the Caribbean.” 20th International Union for Quaternary Science (INQUA), Dublin, 25–31st July 2019.
- Mike J. Burn. “Environmental Change in the Caribbean: Insights from the Land of Wood and Water.” Invite Lecture, Woods Hole Oceanographic Institution, Woods Hole. MA, USA, und August 2018.
- S. E. Palmer and Mike J. Burn. “A multi proxy analysis of extreme wave deposits in a tropical coastal lagoon in Jamaica, West Indies.” 20th International Union for Quaternary Science (INQUA), Dublin, 25–31st July 2019.
- Rupert Green. “Crowdsourcing for hazard mapping: using mobile technology and crowdsourcing to capture hazard data.” 2nd International Conference on Disaster Risk Reduction in the Caribbean, 24th July 2019.
- Sherene James-Williamson and Rupert Green. “Using GIS as a tool for selecting suitable sites for museums in the Caribbean for Sustainable development and Disaster Risk Reduction.” International Museums Conference “Itinerant Identities: Museum Communities/Community Museums” (Organized in collaboration with EU-LAC-Museums, the University of the West Indies (UWI), and the Barbados Museum & Historical Society), 6–9th November 2018.
- S. Yoshi Maezumi. “Legacies from the Past. An Interdisciplinary Approach to Reconstruct Past Human Land Use.” New Frontiers in Anthropocene Archaeology. Jena, Germany, 2019.
- M. Arienzo, S. Yoshi Maezumi, N. Chellman and J. Iriarte. “Evidence of Anthropogenic Modification of the Landscape Through Biomass Burning from an Amazon Lake Sediment Core.” 20th International Union for Quaternary Science (INQUA), Dublin, 25–31st July 2019.
- S. Yoshi Maezumi, W. Gosling, C. McMichael, J. Iriarte, R. Smith, F. Mayle, M. J. Power. “Examining the Role of Natural and Anthropogenic Fire Activity on the Biogeographic Distribution of the Amazonian Rainforest Ecotone (ARE).” Invited Speaker. 20th International Union for Quaternary Science (INQUA), Dublin, 25–31st July 2019.
- Arpita Mandal. “Application of ArcGIS and its components for Hydrological Studies in Jamaica.” ESRI User Conference, San Diego, 8–12th July 2019.
- ErcanÖzcan, Simon F. Mitchell, György Less, Edward Robinson, Jonathan R. Bryan, Johannes Pignatti and Ali Osmani Yücel. “A revised suprageneric classification of American orthophragminids.” (Poster Presentation). European Geological Union (EGU2019), Vienna, Austria, 7–12th April 2019.

- Simon F. Mitchell. “Eocene platform and basin development on the Upper Nicaraguan Rise.” Petroleum geology of Mexico and the northern Caribbean, The Geological Society, Burlington House, London, 14–16 May 2019.

## PUBLICATIONS

### Books and Journals

- David Barker. 2018. *Caribbean Geography*, Volume 23, 76 pages.
- Sherene James-Williamson. 2018. *Caribbean Journal of Earth Science*, Volume 49, 43 pp.
- Sherene James-Williamson. 2019. *Caribbean Journal of Earth Science*, Volume 51, 6 pp. (in progress).

### Refereed Book Chapters and Journal Articles

- Z. Guido, C. Knudson, **Donovan Campbell** and J. Tomlinson. 2019. “Climate information services for adaptation: what does it mean to know the context?” *Climate and Development*, <https://tandfonline.com/doi/abs/10.1080/17565529.2019.1630352>
- J. Gregorio de Souza, M. Robinson, **S. Yoshi Maezumi**, D. Schaan, D. Urrego, F. Mayle, B. Whitney, F. Cruz, V. Novello, D. Alves, J. M. Capriles, S. Rostain, J. Apaestegui, H. Hooghiemstra, J. Hoggarth, M. Power and J. Iriarte. 2019. “Climate change and cultural resilience in late pre-Columbian Amazonia.” *Nature Ecology and Evolution*.
- M. M. Arienzo, **S. Yoshi Maezumi**, N. J. Chellman and J. Iriarte. 2019. “Pre-Columbian Fire Management Linked to Refractory Black Carbon Emissions in the Amazon.” *Fire*.
- **Simon F. Mitchell**. 2018 “The Chalk Group (Upper Cretaceous) of the Northern Province, eastern England – a review.” Proceedings of the Yorkshire Geological Society, 9 August 2018, <https://doi.org/10.1144/pygs2017-010>.
- **Simon F. Mitchell**. 2018. “Comment on Gold et al. “The biostratigraphic record of Cretaceous to Paleogene tectono-eustatic relative sea-level change in Jamaica.”” *Journal of South American Earth Sciences*, doi: 10.1016/j.jsames.2018.06.011
- E. Özcan, **Simon F. Mitchell**, G. Less, E. Robinson, J. R. Bryan, J. Pignattie and A. O. Yücela. 2019. “A revised suprageneric classification of American orthophragminids with emphasis on late Paleocene representatives from Jamaica and Alabama.” *Journal of Systematic Palaeontology*, 29 pp. DOI: 10.1080/14772019.2018.1539778
- P. W. Skelton, E. Gili, T. Steuber, R. W. Scott and **Simon F. Mitchell**. 2019.

“Rudists in the Revised Bivalvia ‘Treatise Online’.” In: M. Boughdiri, B. Bádenas, P. Selden, E. Jaillard, P. Bengtson and B. Granier (Eds.), *Paleobiodiversity and Tectono-Sedimentary Records in the Mediterranean Tethys and Related Eastern Areas. Advances in Science, Technology & Innovation (IEREK Interdisciplinary Series for Sustainable Development)*, Springer, Cham. DOI: 10.1007/978-3-030-01452-0\_6

### Technical Reports

- **Donovan Campbell**, S. Palmer and S. Lee. 2018. “Portland Bight Protected Area (PBPA) Fish Sanctuary Feasibility Assessment.” Caribbean Community Climate Change Centre & Caribbean Coastal Area Management Foundation, Kingston, Jamaica.
- **Donovan Campbell**, G. Poissonnier and S. Lee. 2018. “Creating Economic and Social Opportunities for Fishing Communities.” Deloitte – Inter-American Investment Corporation (IIC), Washington DC, USA.
- J. Eyzaguirre, **Donovan Campbell** and A.-G. Gardiner. 2018. “Toward Climate-Smart Practices across the Fish Value Chain – Knowledge-Attitudes-Practice.” Ministry of Economic Growth & Job Creation. Kingston, Jamaica.

### PUBLIC SERVICE

#### David Barker

- Editor, *Caribbean Geography*
- Convenor, CAPE Geography
- Editorial Committee *CaribXplorer Magazine*
- Editorial Board *Caribbean Quarterly*

#### Mike Burn

- Editorial Board Member for the peer-reviewed journal *Scientific Reports*, for Springer Nature.

#### Donovan Campbell

- IPCC Lead Author: selected to participate as a lead author for the Intergovernmental Panel on Climate Change (IPCC) for the Sixth Assessment Report (AR6)

#### Taneisha C. P. Edwards

- President, Geological Society of Jamaica

#### Sherene James-Williamson

- Editor – *Caribbean Journal of Earth Science*

- Editor, *Caribbean Museums*
- Honorary Treasurer, Jamaican Historical Society
- Immediate Past President, Museums Association of the Caribbean
- Board Member, Museums Association of the Caribbean
- Chair, Education & Training Committee, Museums Association of the Caribbean
- Committee Member. GIS Enterprise Licence Agreement Management Support & Advisory Committee, National Spatial Data Management Division
- UWI Representative for the EU-LAC Virtual Museums Project
- UWI Representative, Land Information Council of Jamaica, National Spatial Data Management Division
- UWI Representative, National Restoration Committee, Mines and Geology Division
- Committee Member, National Declarations Committee, Jamaica National Heritage Trust

#### **Arpita Mandal**

- Member of the Technical Committee of Global Water Partnership Caribbean (GWP-C)
- President, Geological Society of Jamaica

#### **Simon F. Mitchell**

- Scientific Committee, International Congress on Rudist Bivalves.
- Scientific Committee, Caribbean Geological Conference.
- Editor, *UWI Contributions to Geology*.
- Language Editor, *Carnets de Geology*.
- Chairman, Jamaican Stratigraphic Committee.

#### **Kevin Tankoo**

- AAPG Latin America & Caribbean Region Chapter undergraduate mentor and project advisor.

#### **INCOME GENERATION**

- **Michael Burn** and **S. Yoshi Maezumi**, August, 2018. National Geographic Society's Committee for Research and Exploration for the Project 'Jamaica a Last Island Frontier: The Legacy of Natural and Anthropogenic Disturbance in the Caribbean.' Funded value: US\$10,000.
- **Michael Burn**, August 2018. Woods Hole Oceanographic Institution (WHOI)

Mary Sears Visitor Program Award ‘Developing a program of research and teaching with Jamaica’. Grant Number: 27002794, Funded value: US\$7,436.

- **Donovan Campbell**, December 2018–March 2019. Related Ecological and Socio-Economic Impact Assessments and Monitoring System for Dominica, St. Vincent and Jamaica. ESSA – Inter-America Development Bank. Role: Social Science Expert/Regional Coordinator:. Funded value: US\$20,000.

## **STUDENTS**

### **Undergraduate Students: Geography**

Year I	92
Year II	33
Year III	35

### **Undergraduate Students: Geology**

Year I	70
Year II	28
Year III	29

### **Postgraduate Students**

MPhil Geography	6
MPhil Geology	7
PhD Geography	6
PhD Geology	3