

## 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 2017–2018 academic year as well as continuing as Acting Head of the Earthquake Unit. Dr Arpita Mandal went on sabbatical leave and Mr Kevin Tankoo undertook her teaching for the year. Dr David Miller continued to coordinate examinations, as well as acting as coordinator of Graduate Students for the year. Dr Sherene James-Williamson coordinated outreach, and Dr Mike Burn and Dr Thomas Stemann coordinated the Geography and Geology programmes, respectively. Dr Sherene James-Williamson acted as Outreach Coordinator for the Faculty of Science and Technology.

Dr. Kevin Rhiney was still engaged with the Department in running research projects and co-supervising research students. Dr Rose-Ann

Smith, Mr Robert Kinlock and Miss Taneisha Edwards were further employed to teach in Geography and Geology respectively, and Dr Donovan Blissett taught a course in the Department on a part-time contract. Mr Roshuan Brown took over as research assistant for the Head of Department, and Ms Stephanie Parker was appointed as research assistant for Dr Sherene James-Williamson.

The Department continued to offer its full curricula of courses in Geography and Geology during the 2015–2016 academic year despite staffing restrictions. Yet again, some staff members had to undertake excessive teaching loads in order to accommodate this.

The Department hosted a mapathon in collaboration with the National Spatial Data Management Division (Ministry of Economic Growth and Job Creation) during GIS Day (November 15, 2017) and UWI Research Days (February 7–9, 2017). The Department also hosted several workshops geared towards high school teachers and students: CAPE Geography workshops January 15–19, 2018; CSEC Geography exam Prep April 28 & 29, 2018; CAPE Teacher SBA planning & designing workshop July 2–4, 2018.

Dr Arpita Mandal received EKACDM Staff Exchange scholarship for 3 months (from April to May and July to August, 2018) as a part of the IDRC Canada EKACDM Project under the Institute of Sustainable Development, UWI Mona. As a part of this scholarship she visited the University of Waterloo, Ontario Canada as a Visiting Researcher (Full Time) in the Department of Civil Engineering. She worked on IDF curves for Jamaica using Multiple Regression models as well as learnt new Hydrological Model called RAVEN and tested on a watershed in Jamaica. She worked with Prof Soulis from April to May and then with Dr James Craig from July to August 2018. Dr Arpita Mandal conducted teaching workshop on Hydrological modelling tools, HEC HMS for students and academic staff at the Department of Geosciences, East Tennessee State University, August 2017. She also attended and conducted workshop on National Training on CARIWIG tools (Hydrological and Hydraulic modelling tools, HEC HMS and HEC RAS) for stakeholders

of Guyana. The workshop was funded by Caribbean Community Climate Change Center and USAID. September (Guyana), 2017.

The Geology Museum saw approximately 500 persons this year from UWI Research Days, GIS Day and School visits. Two summer camps were run: (1) The Geology Museum through the Department sponsored Plant Jamaica Green Camp 2017 from August 7–11 and 14–18, 2017; and (2) The Geology Museum hosted its inaugural heritage camp “Kulcha Konnection Camp” from July 16 to 27, 2018.

Emeritus Professor David Barker was invited to present the keynote address at the 1st International Conference on Island Economies, held 14th–15th November, in the city of Haikou on the tropical island of Hainan, People’s Republic of China. The conference was co-organized by the Hainan Foreign and Overseas Chinese Affairs Office; the Institute of Island Studies, University of Prince Edward Island; the University of Malta; and the UNESCO Chair in Island Studies and Sustainability.

The Department was well-represented at Research Days, with two posters: (1) Sherene A. James-Williamson and Stephanie Parker. 2018. “Site suitability modeling for siting of sanitary landfills in Jamaica, West Indies.” (Collaborators: Walter Williams and Rohan Richards, formerly of the National Spatial Data Management Division); and (2) Sherene A. James-Williamson and Stephanie Parker. 2018. “Using Absence Heritage to provide earthquake awareness and preparedness.” (Collaborators: Lesley-Gail Atkinson-Swaby and Lloyd Wright, formerly of the Jamaica National Heritage Trust).

## **PAPERS PRESENTED**

- David Barker. 2017. “Agricultural and rural issues on small islands in a period of global change” (oral presentation). 1st International Conference on Island Economies, held 14th–15th November, in the city of Haikou on the tropical island of Hainan, People’s Republic of China.
- Michael J. Burn. 2018. “Environmental Change in the Caribbean:

- Insights from Jamaica, the land of wood and water” (oral presentation). Department of Geosciences, UMass Amherst, 26th July 2018.
- Michael J. Burn. 2018. “Environmental Change in the Caribbean: Insights from Jamaica, the land of wood and water” (oral presentation). Coastal Systems Group, Woods Hole Oceanographic Institute, 2nd August 2018.
  - K. Coates, D. Gordon-Smith, Michal J. Burn, J. Smol and S. Palmer. 2018. “Sedimentary records of anthropogenic impacts and climate variability from a tropical, urban estuary: a 150-year palaeoenvironmental reconstruction of Kingston Harbour, Jamaica” (oral presentation). UWI Research Days, January 2018.
  - Taneisha C. P. Edwards and Simon F. Mitchell. 2017. “Petrogenesis and Geochemistry of Eocene Dolostones from Jamaica” (Oral Presentation), Goldschmidt Conference, August 2017, Paris, France.
  - Taneisha C. P. Edwards and Simon F. Mitchell. 2017. “Evidence of Neotectonics on a microtidal beach in Jamaica” (Oral Presentation). IGCP Project 639 Sea Level Change from Minutes to Millennia Conference, September 2017, Durban, South Africa.
  - Taneisha Edwards and Simon F. Mitchell. “Coastal morphodynamics affected by beachrocks: observations from selected beaches in Jamaica, W. I.” (Oral). EGU 8–13th April, 2018, Austria Center Vienna, Austria. Abstract published in Geophysical Research Abstracts, Vol. 20, EGU2018-17701-1.
  - Sherene A. James-Williamson and Stephanie Y. Parker. “Earthquakes and Heritage: The Case of pre- and post-1907 Kingston Earthquake” Museums Association of the Caribbean Conference, Miami, Florida, USA, October 23–26, 2017.
  - Sherene A. James-Williamson and Stephanie Y. Parker. “Limitations to the siting of landfills in Jamaica” West Indies. Faculty of Science and Technology 11th Conference, Kingston, Jamaica April 25–27, 2018.
  - Arpita Mandal, P. Dunk, M. Curtis and J. Sidial. “Extreme events

affecting water resources in the Hope River watershed in Jamaica: use of Westpro for baseflow separation and its long term trend” Geological Society of America Annual Meeting, Seattle, October 2017.

- Arpita Mandal, D. Smith, A. Nandi, J. Sidial, A. Reid and S. Watson. “Hydrometeorological hazards in Small Island Developing States of the Caribbean: Case study from Jamaica”. International Conference on Sustainable Development, Columbia University, NY, Sept 2017.
- Simon F. Mitchell. “100 million years of tectonics and sedimentation in Jamaica” (Oral Presentation). Invited Talk: Friday April 27th 2018, Southern Methodist University (SMU), Texas, USA.
- Simon F. Mitchell. “Is Jamaica at risk of an earthquake or tsunami?” (Oral Presentation). The American Chamber of Commerce’s Presidents’ breakfast on disaster risk reduction, 8th June 2018, Jamaica Pegasus Hotel, New Kingston, Jamaica.
- Simon F. Mitchell. “A Larger Benthic Foraminiferal Zonation for the Eocene of the Central American Region” (Oral Presentation). Forams 2018, 17th–22nd June, 2018, Edinburgh, Scotland.
- Simon F. Mitchell. “Tectonic blocks and basin evolution from the late Cretaceous to Paleogene in eastern Jamaica” (Oral Presentation). AAPG Hedberg Research Conference, Monday 2nd July to Thursday 5th July 2018, Sigüenza, Spain.
- Simon F. Mitchell. “Eocene basin development and sedimentation patterns in central and western Jamaica” (Oral Presentation). AAPG Hedberg Research Conference, Monday 2nd July to Thursday 5th July 2018, Sigüenza, Spain.
- Simon F. Mitchell and Edward Robinson. “The evolutionary origin of the larger foraminifer ‘*Lepidocyclina*’ in the Americas” (Oral). The Micropalaeontological Society Annual Conference 2017, 15–16th November 2017, The Natural History Museum, London.
- Natalie Robinson and Simon F. Mitchell. “A Foraminiferal Palaeoecology

of a Mid-Eocene Carbonate ramp within the Caribbean” (Poster). The Micropalaeontological Society Annual Conference 2017, 15-16th November 2017, The Natural History Museum, London.

- Natalie Robinson and Simon F. Mitchell. “Quantitative and qualitative evaluation of mid Eocene *Yaberinella* from Jamaica and implications for trans-Atlantic migration in the Eocene” (Poster Presentation). Forams 2018, 17th–22nd June, 2018, Edinburgh, Scotland.
- Rose-Ann Smith. “Nah bury foot to go dig arrowroot: The Past, Present and Future of Arrowroot in St. Vincent and the Grenadines”. American Association of Geographers Conference, 10–14 April 2018, New Orleans, USA.
- Kevin R. Tankoo and Simon F. Mitchell. “Reservoir Porosity and Stratigraphy of Eocene-Miocene Successions, North-Central, Jamaica: Onshore Analogues for Petroleum Systems on the Eastern Nicaraguan Rise” (Oral Presentation). American Association of Petroleum Geologists (AAPG)/Society of Exploration Geophysicists (SEG) International Conference and Exhibition, 15th–8th October, 2017, Excel, London, U.K.

## PUBLICATIONS

### Books and Journals

- **James-Williamson, Sherene A.** and Jolliffe, L. *Caribbean Museums, Volume 2/3*.
- **James-Williamson, Sherene A.** and Donovan, Stephen K. 2018. *Caribbean Journal of Earth Science*, Volume 50.
- **James-Williamson, Sherene A.** 2018. *Caribbean Journal of Earth Science*, Volume 49.
- **David Barker.** 2017. *Caribbean Geography*, Volume 22, 71 pp.

### Refereed Book Chapters and Journal Articles

- Donovan Campbell. 2018. “Assessing Vulnerability to Climate Change Across Agroecological Zones in Jamaica: Insights for

- Community-Based Adaptation Strategies,” In C. Becford (Ed.) “Agriculture, Food and Food Security; Some Contemporary Global Perspectives”, Nova Science Publishers, Inc. (NOVA) pp. 8–30.
- S. M. Alexander, G. Epstein, Ö. Bodin, D. Armitage and **Donovan Campbell**. 2018. “Participation in planning and social networks increase social monitoring in community based conservation.” *Conservation Letters*, 2018, e12562. <https://doi.org/10.1111/conl.12562>
  - K. Farmer, J. Hyppolite, **S. A. James-Williamson** and N. Urquhart (2018). “A History of Connections, A Future of Collaborations: The Museums Association of the Caribbean.” *International Review of African American Art*. 28, 2, pp. 37–46.
  - **S. A. James-Williamson**, K. Weise and D. Shirley. (2018). “Teaching Children to Document Heritage: The intangible heritage pilot project.” *Caribbean Museums*, Volume 2–3, pp. 45–52.
  - E.R. Locatelli, D. E. G. Briggs, **T. A. Stemann**, R. W. Portell, H. G. Means, **S. A. James-Williamson**, **S.A.** and S. K. Donovan. (2017). “Leaves in marine turbidites illuminate the depositional setting of the Pliocene Bowden shell beds, Jamaica.” *Geology* 46 (2), pp. 131–134.
  - A. Skrivaneck A. Dutton, **T. A. Stemann**, K. Vyverberg, J. X Mitrovica. (2018). “Evidence of tectonism based on differential uplift of the Falmouth Formation of Jamaica.” *Geological Society of America Bulletin* 130(5-6), pp. 707–720.
  - **Rose-Ann Smith**. (2018). “Risk perception and adaptive responses to climate change and climatic variability in northeastern St. Vincent.” *Journal of Environmental Studies and Sciences*, 8(1), pp 73–85.

### Technical Reports

- E. Thomas-Hope, **R. Kinlocke**, T. Ferguson, C. Heslop-Thomas & B. Timmers. The Urban Food System of Kingston, Jamaica. Waterloo, ON: Hungry Cities Partnership. Hungry Cities Report, No. 4, pp. i–34 (2017).

## **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) Special Report on climate change, desertification, land degradation, sustainable land management, food security and greenhouse gas fluxes in terrestrial ecosystems.
- Academia Representative: Office of the Prime Minister's Environment Working Group under the Partnership for a Prosperous Jamaica (PPPJ) initiative.
- Caribbean Representative: selected as Caribbean representative to participate in an international programme on Governance, Institutions and Water Metabolism.
- Small Island Developing States (SIDS) representative: selected to participate in a Global Marine Science Summit focused on coastal resilience and the Blue Economy.

### **Sherene James-Williamson**

- Editor – *Caribbean Journal of Earth Science*
- Editor – Caribbean Museums
- Board Member, 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**

- **Dr Arpita Mandal**, Prof Mona Webber, Ms Patrice Francis and Mr Camillo Trench, **Dr Rose Ann Jasmine Smith**, **Dr Robert Kinlocke**, **Ms Taneisha Edwards** and **Prof Simon Mitchell**. “Assessment and Economic Valuation of Coastal Protection Services Provided by Mangroves in Jamaica”, World Bank: 90,000 USD, November 2017, project duration: 18 months.

- **Dr Arpita Mandal, Prof Simon Mitchell, Dr Robert Kinlocke, Dr Donovan Blissett and Dr David Miller.** “Sediment Budget Monitoring of the Upper Rio Minho Basin”, IDB: 215,000 USD, February 2018, project duration: 23 months.
- **Simon F. Mitchell.** “Nicaragua Rise Correlation Project”. CaribX consultancy: 45,000 USD, June 2018, Project duration 18 months.
- **Michael J. Burn** received an award from the Mary Sears Endowed Visitor Program at Woods Hole Oceanographic Institution (WHOI) of US\$ 5000 to nurture research collaboration with Jeff Donnelly (WHOI) and Dana MacDonald (UMASS) following the visit of the RV Atlantis to Jamaica in August 2016.

## **STUDENTS**

### **Undergraduate Students: Geography**

Year I	110
Year II	44
Year III	25

### **Undergraduate Students: Geology**

Year I	70
Year II	37
Year III	22

### **Postgraduate Students**

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