

## 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 2016–2017 academic year as well as continuing as Acting Head of the Earthquake Unit. Dr Arpita Mandal continued as coordinator of Graduate Students in the Department, Dr David Miller coordinated examinations, Dr Sherene James-Williamson coordinated outreach, and Dr Kevon Rhiney and Dr Thomas Stemann coordinated the Geography and Geology programmes respectively.

Dr Kevon Rhiney took a one year leave of absence, and Dr Rose-Ann Smith oversaw his teaching duties for the year. Dr. Kevin Rhiney formally resigned as Lecturer in the Department at the end of the year, but is still engaged with the Department in running research projects and co-supervising research students. 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. Ms Jullian Williams continued as a research assistant for the Head of Department, but resigned at the end of the year.

The Department continued to offer its full curricula of courses in Geography and Geology during the 2016–2017 academic year despite staffing restrictions. Once again, some staff members had to undertake excessive teaching loads in order to accommodate this.

Dr Mandal organized two workshops on mobile data collection using the Open Data Kit (ODK) app at the Department of Geography and Geology in September and November 2016. The work involved training disaster coordinators and parish representatives on using the ODK app to collect disaster data and upload these on an open source platform for use by stakeholders in planning and policy making. Dr Mandal attended and conducted training workshop on capacity building in the utility and application of the Tropical Storm Model along with Hydrologic and Hydraulic models for CARICOM countries in the Eastern and Southern Caribbean Region. This was funded by USAID and Caribbean Community Climate Change Centre (CCCCC/5Cs). Under this initiative, workshops were conducted in St Kitts and Nevis (19–28 April 2017), St Lucia (19–30 June 2017) and Barbados (24 July– 4 August 2017).

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 16, 2017) and UWI Research Days (February 1–3, 2017). The department hosted 30 and 50 students and their teachers, respectively.

The Museum saw approximately 500 persons this year from UWI Research Days and School visits. The Museum through the Department sponsored GreenCamp 2016 from August 8–11, 2016. The planned activities, initially scheduled for August 1–4 and 8–11 were disrupted by heavy rains associated with Tropical Storm Earl (later became Hurricane Earl). The department sponsored the space for the hosting of the camp. The camp activities centred around environmental issues and solutions –

reduce, reuse and recycle; alternative sources of energy; composting among others.

## PAPERS PRESENTED

- **Mike J. Burn** and S. E. Palmer. (2017). “Harmonizing marine and terrestrial paleoclimate archives to better understand Caribbean climate dynamics.” Oral Presentation. 38th Scientific Conference of the Association of Marine Laboratories of the Caribbean. Merida, Mexico, May 20–26.
- **Taneisha C.P. Edwards**. “Sea-level rise, Quaternary geologies and coastal erosion: A case study for Kingston, Jamaica.” Oral Presentation. Lecture Series, UWI in Action: Mitigating the Impact of Climate Change and Environmental Challenges, 31st October 2016, UWI regional headquarters, Kingston, Jamaica.
- **Yucel Deniz Erdal**, Juan Carlos Silva-Tamayo, Brain Richardson and **Simon F. Mitchell** “Sedimentology, stratigraphy and chemostratigraphy of Eocene-Miocene carbonate successions in the western Caribbean: the Swanswick and Somerset formations, Jamaica.” Poster Presentation. Session No. 340 – Booth # 312, Sediments, Carbonates (Posters), Wednesday, 28th September 2016: 9:00 AM-6:30 PM, Exhibit Hall E/F (Colorado Convention Center), GSA Annual Meeting in Denver, Colorado, USA, Abstract published in *Geological Society of America Abstracts with Programs*. Vol. 48, No. 7, doi: 10.1130/abs/2016AM-286530.
- **Sherene A. James-Williamson**, K. Weise and D. Shirley. “Teaching children to document heritage: the intangible heritage pilot project.” Oral Presentation. Museums Association of the Caribbean Conference held 9–12th October 2016, Grand Cayman, Cayman Islands.
- **Robert Kinlocke**. (2017). “Mobile Data Collection for Disaster Management.” Mobile Data Collection Workshop for Disaster Management Practitioners in the Public sector, 11–12th November 2016, Department of Geography and Geology, UWI, Mona.
- **Arpita Mandal** and A. Nandi. “Hydrological modelling to estimate

runoff and infiltration in Southeastern Appalachian Debris Flow Complex.” Oral Presentation. 3rd North American Symposium on Landslides, June 2017, Roanoke, Virginia.

- **Arpita Mandal**, Simon F. Mitchell and M. Curtis. “Climate variability and impact on water resources for Jamaica with special emphasis on the Kingston basin.” Oral Presentation. Session No. 310, T110, Hydrogeological and Geomorphological Responses to El Niño, Extreme Weather Events, and Landscape Disturbances, Wednesday, 28th September 2016: 1:30 PM-5:30 PM, Mile High Ballroom 3B (Colorado Convention Center). GSA Annual Meeting in Denver, Colorado, USA. *Geological Society of America Abstracts with Programs*. Vol. 48, No. 7, doi: 10.1130/abs/2016AM-287285.
- **S. E. Metcalfe**, J. A. Holmes, Mike J. Burn, C. S. Lane and S. P. Horn. “Palaeolimnological records of climate change in the Central American – Intra-America Seas region over the last 2000 years.” Oral Presentation. 5th PAGES Open Science. Meeting, 9–13 May 2017, Zaragoza, Spain.
- **Simon F. Mitchell**. “The mid Cenozoic carbonate platform of the Nicaraguan Rise: importance of carbonate productivity, volcanism and tectonics.” Oral Presentation. Session No. 296, Sediments, Carbonates, Wednesday, 28th September 2016: 1:30 PM-5:30 PM, Room 401 (Colorado Convention Center). GSA Annual Meeting in Denver, Colorado, USA. Abstract published in *Geological Society of America Abstracts with Programs*. Vol. 48, No. 7, doi: 10.1130/abs/2016AM-287240.
- **Simon F. Mitchell**. “Ten fun things about the geology of Jamaica.” Oral Presentation. Natural History Society of Jamaica, invited lecture celebrating 75 years of the Society, 10th November 2016, Botany Seminar Room, UWI Mona Campus, Kingston, Jamaica.
- **Simon F. Mitchell**. “Understanding the Eocene of Jamaica.” Oral Presentation. AGM, Geological Society of Jamaica, 3rd June, 2017, Department of Geography and Geology, University of the West Indies, Mona, Jamaica.

- **Natalie S. Robinson** and Simon F. Mitchell. “Larger Foraminifera from the platform margin of Jamaica during the Eocene.” Oral Presentation. Session No. 104-T132. Microfossil Proxies in Earth History, Monday, 26th September 2016: 8:00 AM-12:00 PM, Room 505 (Colorado Convention Center). GSA Annual Meeting in Denver, Colorado, USA, Abstract published in *Geological Society of America Abstracts with Programs*. Vol. 48, No. 7, doi: 10.1130/abs/2016AM-276930.
- **Kevon Rhiney**. “Beyond Human Geographies: Insecurity and non-human agents.” Oral Presentation. 2nd CARSICC Postgraduate Conference and Network Meeting, 6–7 December 2016, University of Leeds, Leeds UK.
- **Kevon Rhiney**. “Livelihood Insecurities of Caribbean Farmers to Global Change.” Oral Presentation. 42nd Caribbean Studies Association Conference, 7th June 2017, Nassau, Bahamas.
- **Kevon Rhiney**. “Assessing the Potential Impacts of Projected Climate-induced Stresses on the Cocoa and Tomato Subsectors in Jamaica.” Oral Presentation. Annual Meeting of the American Association of Geographers (AAG), 9th April 2017, Boston, MA, USA.
- **Robert W. Scott**, Thomas Steuber, Simon F. Mitchell and Peter W. Skelton. “Global changes in rudist bivalve diversity and effects on early Cretaceous Gulf Coast communities.” Oral Presentation. Session: T3. Advances in Sedimentology, Stratigraphy, and Geochemistry of Carbonates and Mixed Carbonate Clastic Systems. Geological Society of America, South-Central Section – 51st Annual Meeting, 13–14 March 2017, Omni San Antonio, Hotel at the Colonnade, San Antonio, Texas, USA.
- **Rose-Ann. J. Smith** and Robert Kinlocke. (2017) “Integration of Mobile Devices for Field based Learning.” Teaching with 21st Century Technologies Conference, 7th April 2017, The University of the West Indies, Mona Campus, Jamaica.

## PUBLICATIONS

### Books and Journals

**David Barker**, D. McGregor, **Kevin Rhiney** and **Thera Edwards** (2016) “*Global Change and the Caribbean: Adaptation and Resilience*”, UWI Press, 289 pp., Kingston, Jamaica. (print).

**David Barker** (Editor). *Caribbean Geography*, Volume 21, September 2016, 86 pp.

### Refereed Book Chapters and Journal Articles

- Allison Bain, Anne-Marie Faucher, Lisa M. Kennedy, Allison R. LeBlanc, **Michael J. Burn**, Rebecca Boger and Sophia Perdikaris. (2017). “Landscape transformation during Ceramic Age and Colonial Occupations of Barbuda, West Indies.” *Environmental Archaeology*, 11 pp., <http://dx.doi.org/10.1080/14614103.2017.1345115>.
- **David Barker**. (2017). “Indigenous Knowledge.” *The International Encyclopedia of Geography*. In D. Douglas Richardson, N. F. Castree, M. F. Goodchild, A. Kobayashi, W. Weidong Liu and R. A. Marston (Eds.), John Wiley & Sons, Ltd, DOI: 10.1002/9781118786352.wbieg0119.
- **David Barker** and D. McGregor. (2016), “Retrospect and Prospect: The British-Caribbean Geography Seminar Series” In D. Barker, D. McGregor, K. Rhiney and T. Edwards (Eds), *Global Change and the Caribbean: Adaptation and Resilience*, pp. 271–286, UWI Press, Kingston, Jamaica.
- **Taneisha C. P. Edwards** and **Simon F. Mitchell**. (2017). “Trace fossils in clastic beachrocks at the Yallahs Salt Ponds, Jamaica: implications for beachrock cementation.” *Journal of Coastal Research*.
- H. Glas, G. Deruyter, D. P. Maeyer, **Arpita Mandal**, **Sherene James-Williamson**. (2016). “Analyzing the sensitivity of a flood risk assessment model towards its input data.” *Natural Hazards and Earth System Sciences*, Vol. 16, pp. 2529–2542

- H. Glas, M. Jonckheere, **A. Mandal**, **S. James-Williamson**, D. P. Maeyer and G. Deruyter. (2017). “A GIS based tool for flood damage assessment and delineation of a methodology for future risk assessment: case study of Annotto Bay, Jamaica.” *Natural Hazards*, DOI: 10.1007/s11069-017-2920-5.
- **Sherene A. James-Williamson**, M. Aratram and P. E. Green. (2016). “Protecting Geoheritage in the Caribbean: Insights from Jamaica West Indies.” *Geoheritage*, Vol. 9 (2), pp. 195-209. DOI 10.1007/s12371-016-0195-y.
- **Robert Kinlocke** and C. Fingal Robinson. (2016). “Challenge, change and the expression of social capital in Kingston, Jamaica and rural St. Lucia.” In D. Barker, D. McGregor, K. Rhiney and T. Edwards (Eds), *Global Change and the Caribbean: Adaptation and Resilience*, pp. 137–160, UWI Press, Kingston, Jamaica,
- **Arpita Mandal** and A. Nandi. (2017). “Hydrological modelling to estimate runoff and infiltration in Southeastern Appalachian Debris Flow Complex.” In J. V. De Graffand and A. Shakoor (Eds.), *Landslides: Putting Experience, Knowledge and Emerging Technologies into Practice*, AEG Special Publication No. 27, pp. 502–513.
- D. McGregor, **David Barker**, **Kevin Rhiney** and **Thera Edwards**. (2016). “Adaptation and Resilience: Changing Caribbean Perspectives.” In Barker, D., McGregor, D., Rhiney, K. and T. Edwards (Eds), *Global Change and the Caribbean: Adaptation and Resilience*, pp. 3–20, UWI Press, Kingston, Jamaica.
- **Simon F. Mitchell** and **Taneisha C. P. Edwards**. (2016). “Geology of the Maastrichtian (Upper Cretaceous) succession of the Jerusalem Mountain Inlier in western Jamaica.” *Caribbean Journal of Earth Science*, Vol. 48, pp. 29–36.
- **Simon F. Mitchell**, Richard N. Abbott, Suresh Bhalai, Shonel Dwyer, **Taneisha C. P. Edwards**, Amir Mohamed, Natalie Ferguson, Norman Harris, Stefon Harrypersad, Orane Hepburn, Cheyne Howell, **Sherene A. James-Williamson**, Kenrick Mcfarlane, Nicole Nembhard, Stephanie Parker, Jared Quintal, Andre Reid, Odane Reid, Natalie Robinson, Sarah Shirt, **Thomas Stemann**, Herona Thompson,

Michael White, **Julian C. B. Williams**, Leighton Williams. (2016). “Revision of Jamaican lithostratigraphic nomenclature decided at a stratigraphic workshop of the Jamaican Stratigraphic Committee at the 60th Anniversary of the Geological Society of Jamaica.” *Caribbean Journal of Earth Science*, Vol. 48, pp. 37–45.

- **Kevon Rhiney, Donovan Campbell and David Barker.** (2016). “Geographies of Vulnerability and Resilience of Rural Farming Communities in Jamaica to Climate Variability and Change: A comparative Analysis.” In D. Barker, D. McGregor, K. Rhiney and T. Edwards (Eds.), *The Caribbean Region: Adaptation and Resilience to Global Change*, pp. 89–114, UWI Press, Kingston, Jamaica.
- **Kevon Rhiney**, A. Eitzinger, A. D. Farrell and M. A. Taylor. (2017). “Assessing the vulnerability of Caribbean farmers to climate change impacts: a comparative study of cocoa farmers in Jamaica and Trinidad.” In E. Thomas-Hope (Ed.), *Climate Change and Food Security: Africa and the Caribbean*, pp. 59–69, Routledge, London and New York.
- **Rose-Ann Smith.** (2016). “Social Capital and Rural Resilience among the Garifuna Communities in Northeastern St. Vincent.” In D. Barker, D. McGregor, K. Rhiney and T. Edwards (Eds.), *Global Change and the Caribbean: Adaptation and Resilience*, pp. 161–178, UWI Press, Kingston, Jamaica.
- Thomas Steuber, Robert W. Scott, **Simon F. Mitchell**, Peter W. Skelton. (2016). “Part N, revised, volume 1, Chapter 26c: Stratigraphy and diversity dynamics of Jurassic–Cretaceous Hippuritida (rudist bivalves).” *Treatise Online* 81, pp. 1–17, 7 fig., 1 table.

### Technical Reports

- **Mike J. Burn** and R. Anderson. (2017). “A peat density survey of a mangrove wetland near New Court, Trelawny, Jamaica.” pp. 1–37, Commissioned by EnviroPlanners Ltd. on behalf of Royalton White Sands Resort.



## **PUBLIC SERVICE**

### **David Barker**

- External Examiner in Geography for the Joint Board of Teacher Education (JBTE).
- Editor, *Caribbean Geography*.
- Convenor, *CAPE Geography*.
- Editorial Committee *CaribXplorer Magazine*.
- Editorial Board *Caribbean Quarterly*
- Council member, Jamaican Geographical Society

### **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 (PPJ) 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.

### **Taneisha C. P. Edwards**

- Non-Departmental philanthropic activities: April 2016 to Present: Hosting the Caribbean Women Honors and Empowerment Groups

Kingston Chapter and maintain management duties as Assistant District Manager for the Kingston Chapter. This is a global initiative started in Toronto Canada and now establishing a presence in over 50 cities across the globe with a mandate to empower minorities, and especially women and girls. EmpowerHer Chat series every other month, held at various locations, Kingston Jamaica. website: [blackwomenawards.com](http://blackwomenawards.com)

**Sherene James-Williamson**

- President, 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**

- Elected to the Technical Committee of Global Water Partnership Caribbean (GWP-C)
- Council Member, 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*.
- Member, National Committee on Coastal Zone Management (NCOZM).

- Chairman, Jamaican Stratigraphic Committee.

**Kevon Rhiney**

- External Examiner, College of Agriculture, Science and Education
- External Examiner, Joint Board of Teacher Education
- Editorial Board, *Caribbean Geography Journal*
- Council Member, Jamaican Geographical Society
- Member of the Steering Committee for the Climate Change Action Training (CCAT) Programme (USAID-funded Ja REEACH Project).
- Steering Committee Member, Global Water Partnership – Caribbean (GWP-C)
- Vision 2030 Jamaica – National Development Plan Thematic Working Group, Environment and Natural Resources Management/Sustainable Urban & Rural Development.
- Member, Inter-American Development Bank (IADB) Civil Society Consulting Group (ConSoc) Jamaica – *The Environment, Energy and Infrastructure* Thematic Group
- National Fisheries Policy Steering Committee: Climate Change and Disaster Risk Management sub-committee
- Elected to the Steering Committee for the Global Water Partnership (GWP-C)
- Re-appointed as co-chair for the Global Water Partnership (GWP-C) Technical Committee

**INCOME GENERATION**

Kevon Rhiney attracted funding for Crop Resilience-Crop Suitability Modelling. Pilot Program for Crop Resilience (PPCR), funded by the Ministry of Economic Growth & Job Creation and the Inter-American Development Bank. Amounting to J\$22,735,240.00. Collaborators: Aidan Farrell (UWI St. Augustine), Anton Eitzinger (CIAT), Leslie Simpson (Independent consultant) and Andre Haughton (UWI Mona).

The Earthquake Unit received a contribution of J\$104,000,000.00 (=US\$) towards seismic equipment, construction of accelerometer and seismic stations, upgrading the central control room and capacity building. The money was part of the World Bank Loan and administered by the Jamaica Social Investment Fund (JSIF).

## **STUDENTS**

### **Undergraduate Students: Geography**

Year I	129
Year II	40
Year III	29

### **Undergraduate Students: Geology**

Year I	96
Year II	42
Year III	22

### **Postgraduate Students**

MPhil Geography	6
MPhil Geology	6
PhD Geography	4
PhD Geology	2