



DEPARTMENT OF GEOGRAPHY & GEOLOGY

Departmental Report August 2020 - July 2021

Dr. Donovan Campbell · Head of Department

WORK OF THE DEPARTMENT

At the beginning of the 2019/2020 academic year, the Department established a 5-year strategic plan (2019-2024) around six priority areas: staffing and administration; teaching and undergraduate curriculum; research and postgraduate programmes; finance and resource mobilization; outreach, visibility, and linkages and; infrastructure and work environment. The strategic plan is established on a vision for progressive and transformational change to support novel and societally relevant research and teaching while engendering a culture of staff success and happiness. For the year 2020-2021, the department focused on four main initiatives: revision of the Geography undergraduate programme, completion of the departmental websites, strengthening its geospatial capabilities, and establishing strategic research partnerships. Drs. Michael Burn and Thomas Stemann continued their roles as coordinators for the Geography and Geology programmes respectively. Dr. David Miller continued as examinations coordinator. Dr. Arpita Mandal continued to serve as Graduate coordinator. Dr. Thera Edwards served as coordinator for outreach activities. Prof. Simon Mitchell returned from sabbatical leave and reassumed his regular academic duties. Mr. Kevin Tankoo was appointed as the Research Fellow/Seismologist in the Earthquake Unit. Ms. Verdine Stephenson went on preretirement leave and will officially retire in December 2021. Ms. Camille Wint was appointed as interim Administrative Secretary in the Earthquake Unit. With the exception of the Tropical Land Management (GEOG 3334), the Department ran a full set of courses for the year despite the challenges of

the COVID-19 pandemic. The academic staff seamlessly transitioned their teaching and course assessment methods online and have adapted well to the limitations brought on by the coronavirus pandemic. One objective of the 2019-2024 strategic plan is to raise the visibility and profile of the Department. The launch of our new and improved website in March (2021) was a major achievement towards this objective. Over the past year, the department (led by Dr. Burn) worked closely with the University's ICT team to redesign and implement the Department's website and social media channels. This has been a major objective of the department for the last decade, and its achievement is a solid platform for the department to showcase its work - thereby deepening engagement with students, staff, and the wider society.

Dr. Robert Kinlocke was appointed chairman of the Board of Directors of SAJE Property Services Limited. SAJE Property is a corporate agency that has been investing in real estate for well over 30 years. Dr. Shaneica Lester was appointed to the Board of the Water Resources Authority (WRA) and will serve until 2024. The WRA has a mandate to regulate, allocate, conserve, and otherwise manage the water resources of Jamaica. Dr. Lester was also appointed to serve as a member of the Land Development and Utilization Commission (LDUC). The LDUC has a mandate to ensure that such agricultural land is, as far as possible, properly developed and utilized. Dr. Sherene James-Williamson was reappointed as Honorary Treasurer for the Jamaica Historical Society. The society aims to conserve historical evidence of Jamaican buildings, artefacts, and documents, and to promote the study of history in Jamaica. She was also reappointed Editor of the Caribbean Journal of Earth Science. She was part of a multidisciplinary team who was awarded the Principal's Award for the project with the greatest multidisciplinary-cross faculty collaboration "A Review of a Tertiary Level Institution's Initiative for Enhancing Education in STEM at the Secondary School Level. Journal of Education and Development in the Caribbean."

Dr Arpita Mandal, Dr Rose-Ann Smith, Dr Taneisha Edwards, Dr Robert Kinlocke & Prof. Simon Mitchell received the UWI Principal's Research Day Award 2020 for the Project with the Greatest Business/Economic/Development Impact for 2019/2020. Dr Rose-Ann Smith completed the BSafe Certificate of Achievement, United Nations Department of Safety and Security, E-Learning Course. Dr. Thera Edwards received a Certificate of Contribution from the Inter-American Development Bank (IDB) & World Justice Project for contribution to the Environmental Governance Indicators in Latin America and the Caribbean 2020 report.

Dr. Donovan Campbell was appointed by the United Nations as one of 25 global experts to lead the World Oceans Assessment (WOA) from 2021-2025. The Group of Experts will coordinate hundreds of experts from around the world (pool of experts) to prepare the integrated assessment of the world's ocean at the global level. The WOA is the major output of the third cycle of the Regular Process for Global Reporting and Assessment of

the States of the Marine Environment, including Socioeconomic Aspects. Dr. Campbell was also appointed as an Associate Editor for the journals of Climate Risk Management and the International Journal of Climate Change Strategies and Management.

Dr Thera Edwards and Donovan Campbell were appointed as Lead Authors for Grenada's National Ecosystem Assessment. Dr Edwards is serving as a Lead Author for Chapter 7 'Scenarios and pathways to a Sustainable Future' and Review Editor for Chapter 1 Setting the Scene: why a national Ecosystem Assessment and how will it contribute to better decision-making. Dr. Campbell is serving as a Lead Author for Chapter 3 - 'What is the current and projected value of coastal, marine, freshwater and agricultural ecosystem services for the Grenadian economy and human well-being? And chapter 4 - 'How do Grenada's ecosystems contribute to climate resilience (food and water security, disaster resilience, climate change adaptation/mitigation)?

Drs. Rose-Ann Smith and Arpita Mandal served as co-facilitators for the Disaster Risk Financing for Development of Small Island Developing States (SIDS) Course by The University of the West Indies Open Campus and CCRIF SPC. Dr. Arpita Mandal completed a training in Synthetic Aperture Radar (SAR) from the Caribbean Institute for Meteorology and Hydrology (CIMH) Barbados November 2020. She also completed a training on LiDAR data as a part of Pilot Project on Climate Resilience, IDB-CIF -UWI MONA Project: Training in Use of LIDAR and Related Data Products. Dr. Sherene James-Williamson participated in the First Aid to Cultural Heritage in the Caribbean: Building awareness, readiness and response webinar Series. She also participated in the Annual General Meetings for the Museums Association of the Caribbean AGM and the Geological Curators' Group.

Drs. Thera Edwards and Sherene James-Williamson, as Map Curator and Museum Curator respectively, assisted in the formation and development of the 'Curators Collective'. The Curators Collective comprises staff members of UWI Mona Campus with responsibility for various collections. The group's purpose is to identify synergies among the University's diverse research, teaching & material collections and to lobby for solutions to effectively improve collections management, research & teaching.

ACCESS

STUDENTS

One of the goals of the 2019-2024 strategic plan is to "fashion a geography and geology curriculum that promotes exposure to progressive and transferable technical and practical skills". A key output of this goal is the approval of the revised Geography undergraduate

programme. Student feedback over the years suggests that a reconfigured geography major will appeal to students wishing to exit academia after a first degree. The revised programme will offer broad exposure to a wider range of courses and opportunities for students to tailor course combinations in geography, which are better aligned to their chosen career path.

The revised Major will make the compulsory 6-credit undergraduate thesis optional by providing access to a new internship course (GEOG3433 Geography Internship and Work Experience) that will enable students to gain valuable work experience. While the integration of a new internship course and a broader choice of applied undergraduate third-year options into the revised Geography Major will meet the needs of students wishing to develop their careers outside of academia, the proposed Applied Major in Geography (BA/BSc) programme will cater for those students wishing to build their research capacity and embark on postgraduate research careers.

Student numbers

Undergraduate				Postgraduate	
<i>Geography</i>		<i>Geology</i>		MPhil Geography	
Year I	74	Year I	61	MPhil Geology	
Year II	29	Year II	25	Ph.D. Geography	
Year III	26	Year III	23	Ph.D. Geology	

RESEARCH AND GRADUATE ACTIVITY

The Department made significant strides towards reviving/rebranding its research units. The Department has three research units: Marine Geology Unit, Unit for Disaster Studies, Earthquake Unit. Of the three, only the Earthquake Unit is currently active. Staff consultation during the development of the strategic plan revealed four priority groups/clusters of research interest: disaster studies, geospatial research, water resources, and, coastal environments. For the 2020-2021 academic year, the department continued the process of reviving the Unit for Disaster Studies (UDS), establishing the Geospatial Support Group (GSG) and, formalize the Caribbean Environments Research Group (CEREG) and the Water Studies Group (WSG).

Graduate students Ms. Shaughna-Lee Steel, Ms. Kristinia Dougherty, Nathalie Ennis-Palmer, and Mr. Lance Scott successfully completed their PhD upgrade transfers. Shaughna-Lee's research is focussed on An Assessment of Community Resilience to Rainfall Hazards In The Rio Grande Valley, Jamaica; Kristinia - Assessment of soil health in nutmeg agroecosystems of Grenada; Nathalie - An Assessment of Land Management Strategies and the

Resilience Capacity of communities around the Blue and John Crow Mountains Protected Area; and Lance - Climate risk and weather index insurance in Jamaica: An assessment of rural farmers across different agro-climate zone.

Dr. James-Williamson through the Bringing Geoheritage to Life IGCP 718 Project, invited Paula Naomi Irapta as a Research Associate (Volunteer). Miss Irapta is initially connected with the project from July 1, 2020 until June 30, 2021 and will assist Dr. James-Williamson with her projects on Geoheritage, Geoparks in SIDS and Absence Heritage Working Group.

PUBLICATIONS

Peer-reviewed

- **Burn, M.** (2021). On the interpretation of natural archives of Atlantic tropical cyclone activity. *Geophysical Research Letters*, e2021GL092456. <https://doi.org/10.1029/2021GL092456>. (IF: 4.65)
- **Campbell, D** (2020). Environmental change and the livelihood resilience of coffee farmers in Jamaica: A case study of the Cedar Valley farming region. *Journal of Rural Studies*. <https://doi.org/10.1016/j.jrurstud.2020.10.027> (IF:2.38)
- **Campbell, D., Moulton, A., Barker, D., Malcolm, T., Scott, L., & Spence, A.** et al. (2021). Wild Food Harvest, Food Security, and Biodiversity Conservation in Jamaica: A Case Study of the Millbank Farming Region. *Frontiers In Sustainable Food Systems*, 5. <https://doi:10.3389/fsufs.2021.663863> (IF: 3.95)
- Heller, C.A., Michelutti, N., **Burn, M.J.**, Palmer, S.E. and Smol, J.P. (2021): The response of diatom assemblages in a Jamaican coastal lagoon to hurricane and drought activity over the past millennium. *The Holocene*, 1-7. <https://doi.org/10.1177/09596836211019095> (IF: 2.58)
- **Mandal, A., Gordon-Smith, D. & Harris, P** (2020). Groundwater availability and security in the Kingston Basin, Jamaica. In Mukherjee, A., Scanlon, B., Aureli, A., Langan, S., Guo, H., McKenzie, A. (Eds.). *Global Groundwater: Source, Scarcity, Sustainability, Security and Solutions*, 1st ed. Elsevier. <https://www.elsevier.com/books/global-groundwater/mukherjee/978-0-12-818172-0>
- **Mitchell, S. F.** (2021). Rudist bivalves (Hippuritoidea) from the Clifton Limestone (Lower Campanian) of western Jamaica and a reassessment of the genus *Vaccinites* in the Americas. *Carnets Geol.*, 21 (14), 315-341. <http://paleopolis.rediris.es/cg/21/14/>

[CG2114.pdf](#) (IF: 1.17)

- **Mitchell S.F.** (2020). - Exceptionally well-preserved silicified hippuritid rudist bivalves from the lower Maastrichtian of Puerto Rico. - *Carnets Geol.*, Madrid, vol. 20, no. 18, p. 333-366. DOI 10.2110/carnets.2020.2018. Open access <http://paleopolis.rediris.es/cg/20/18/index.html> (IF: 1.17)
- **Mitchell, S.F.** (2020). Chapter 11, Belemnites, pp. 266-288 in D. Martill and S. Etches (Eds.), *Fossils of the Kimmeridge Clay. Volume 1. Palaeontological Association Field Guides to Fossils No. 16* (ISBN 978-0-901702-74-6), xii + 436 pp, 178 text-figs, Palaeontological Association, London (December 2020).
- **Mitchell, S.F.**, Gunter, G. and Mulder, W. (2020). The palaeoecological significance of tubes, ribs, pallial canals and flanges in caprinoid rudist bivalves. *Palaeogeography, Palaeoclimatology, Palaeoecology* (Available online 13 October 2020). <https://doi.org/10.1016/j.palaeo.2020.110078> (IF: 2.83)
- Palmer, S.E., **Burn, M.J.** & Holmes, J. (2020). A multiproxy analysis of extreme wave deposits in a tropical coastal lagoon in Jamaica, West Indies. *Nat Hazards*. <https://doi.org/10.1007/s11069-020-04284-2> (IF: 3.65)
- **Stemann A. & Robinson N.** (2020). A solitary coral-larger benthic foraminifera association from the late Eocene of Jamaica. *Bollettino della Società Paleontologica Italiana* 59, ONLINE ACCESS: http://paleoitalia.org/media/u/archives/Stemann_Robinson_2020_BSPI_ONLINE.pdf (IF: 1.19)
- **Edwards, T** and E. Robinson (2021). Remains of the Heyday: the Fort and Port at Carlisle Bay, Jamaica. *Jamaica Journal* 38(1-2): 68-75
- **Edwards, T** and D. McGregor (2019). Aerial Photographs: The new UWI Mona aerial photograph collection as a teaching and research resource: case studies of land scape change in Montserrat and Grand Cayman. *Caribbean Geography* 24: 82(Printed January 2021)

Technical Reports

- **Mitchell, S. (2020)**. Eocene correlation between Jamaica and the western Nicaragua Rise using larger benthic foraminifers. Technical report prepared for CaribX, 20th August 2020, 65 pp. with 5 large enclosures.
- Montoute, M & **Mandal, A** (2021). Perspectives Paper – Impact of land use change on water resources, availability, and water quality in Saint Lucia. The Global Water Partnership-Caribbean (GWP-C). https://e6e28ca6-0a47-4f46-bcfa-9fd652141de1.filesusr.com/ugd/938a78_450a38d3b1c148e39b36e925f05513ab.pdf

ALIGNMENT

PAPERS PRESENTED

- **Edwards, T (2020)**. Hidden in Plain Sight: Discovering the Secrets of Maps and Aerial Photographs. Presentation in the Department of Library and Information Studies INFO-Talks Department Seminar Series. November 18, 2020 via Zoom.
- **Edwards, T (2020)** - 'Decolonizing Jamaican History: The role of forests in Jamaica's environmental coming of age' at the 3rd Webinar in The Jamaican Historical Society's "Decolonising Jamaican History: An Unfinished Project" Webinar Series. October 29, 2020 via Zoom.
- **Edwards, T (2020)** - Women in Disaster Risk Reduction and Climate Change Research Seminar. Presentation at the International Disaster Risk Reduction Day Panel Discussion. October 13, 2020 via Zoom and YouTube
- **Edwards, T., and Edward R. (2020)** - Establishing a Historical Rate of Shoreline Recession for Southern Clarendon, Jamaica. Oral Presentation at the 2nd GIS User Conference Jamaica, Sept 24, 2020
- **Edwards, T. (2020)** - Women in Disaster Risk Reduction and Climate Change Research Seminar. Presentation at the International Disaster Risk Reduction Day Panel Discussion. October 13, 2020 via Zoom and YouTube
- **Edwards, T. (2020)** - 'Decolonizing Jamaican History: The role of forests in Jamaica's environmental coming of age' at the 3rd Webinar in The Jamaican Historical Society's "Decolonising Jamaican History: An Unfinished Project" Webinar Series. October 29, 2020 via Zoom.

- **Green R., Mandal A., Blissett, D., Miller, D., and Mitchell, S.** (2020) "GIS based Erosion Modelling : Case study of The Upper Rio Minho Watershed, Jamaica" Oral Presentation at the 2nd GIS User Conference Jamaica, Sept 24, 2020
- **James-Williamson, S.** (2020) – "The impact of Covid-19 on Caribbean Museums" A sector presentation by the Museums Association of the Caribbean. August 6, 2020, at the American Association of African American Museums Annual Conference (Virtual) August 5-8, 2020.
- **James-Williamson, S.** (2021) – "Using AI for Geoheritage and Geohazard Resilience". Presented at the UNESCO Cluster Office for the Caribbean and the Broadcasting Commission of Jamaica, AI for the Caribbean Initiative Forum 2: Opportunities to accelerate human progress for Sustainable Development held February 18-19, 2021.
- **James-Williamson, S.** (2021) - "Using the Great Kingston 1907 Earthquake to Redefine Absence Heritage". Presented at the UNESCO IGCP Project Geoheritage 692 Webinar Series held February 23, 2021. Presentation entitled "Using the Great Kingston 1907 Earthquake to Redefine Absence Heritage"
- **Kinlocke, R., Mahabir, A., Anderson, R., Smith, R., Dougherty, K. & Madho, C.** (2020) "Media bias and social polarisation: A qualitative exploration of the public discourse towards vulnerable social groups during the COVID-19 pandemic in Kingston, Jamaica". Race, Ethnicity and Place Virtual Conference, October 21-23, 2020
- **Mahabir, A and Kinlocke, R.** (2020) - Mapping Hope: Examining the Psychosocial Geographies of Inequity and Exclusion in the Urban Ghetto. Oral Presentation at the 2nd GIS User Conference Jamaica, Sept 24, 2020
- **Mandal, A., Curtis, M., Edmunds, P., Holmes, P., Pounder, C.** (2020) "Impact of Land-use change on water resources of Yallahs and Hope watersheds: Use of a GIS based Decision Support System" Oral Presentation at the 2nd GIS User Conference Jamaica, Sept 24, 2020
- **Mandal, A., and Curtis, M.** (2021) - 'Water Resources and Flood Risk under a Changing Climate: Case Studies from Jamaica' at the Commonwealth Science Conference 2021. The conference is Co-organised by the Royal Society and the African Academy of Sciences, and funded by the Global Challenges Research Fund, the Commonwealth Science

Conference 2021 and was held virtually from 22-26 February 2021.

- **Mitchell, S.F** (2020) "Comparing the flints in the English Chalk with the flints in the White Limestone of Jamaica" Invited Talk. Friday 11th September 2020, The Geologists' Association, Burlington House, London (by Zoom).
- **Smith, R.** (2021) - "Disaster risk reduction, resilience building and climate adaptation in the Caribbean" at the Royal Society Commonwealth Science Conference, February 22- 26, 2021 (Virtual).
- **Mitchell, S.F** (2021) "Landslides in the Gordon Town – Irish Town area: geology, causes, triggers, types and consequence" Invited Talk. Wednesday 3rd March 2021, Science for Today Public Forum, Faculty of Science and Technology, UWI Mona, presentations and panel discussion (by Zoom).
- **Mitchell, S.F** (2021) "The Cretaceous history of Jamaica" Invited Talk. Thursday 17th June March 2021, Yorkshire Geological Society (by Zoom).

PUBLIC SERVICE

Dr. Shaneica Lester

- Board member - The Water Resources Authority
- Member - The Land Development and Utilization Commission

Prof. 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.

Dr. Sherene James-Williamson

- Editor – Caribbean Journal of Earth Science
- Editor – Caribbean Museums
- Member – Science Advisory Committee of the Jamaican National Commission for UNESCO
- Member – ACP-EU Development Minerals Programme Country Working Group
- Member – Declarations Committee, Jamaica National Heritage Trust
- Assistant Chief Invigilator - Caribbean Examinations Council

- Honorary Treasurer, Jamaican Historical Society
- Immediate Past President, Museums Association of the Caribbean
- Archaeological Society of Jamaica (Board Rep. for Jamaican Historical Society)
- Council Member, Geological Society of Jamaica

Dr. Donovan Campbell

- Associate Editor – Climate Risk Management (Journal)
- Associate Editor – Climate and Development (Journal)
- Associate Editor - International Journal of Climate Change Strategies and Management (IJCCSM) (IF: 2.3)
- Co-Editor - Disasters Journal (Special Issue)
- Board member, Land Information Council of Jamaica (LICJ)
- Board member, Caribbean Climate Innovation Centre (CCIC)
- Board member, Mona Social Services, The University of the West Indies
- Council member, Integrated Water Resources Management Council (IWRMC) - Ministry of Economic Growth & Job Creation
- Chairman, of the Education & Training Committee of the Land Information Council of Jamaica (LICJ)

Dr. Thera Edwards

- 2023 Berkshire Conference of Women, Genders and Sexualities Program Committee
- 53rd Annual Conference of the Association of Caribbean Historians (ACH) Local Organising Committee.
- Geography Awareness Week Planning Committee
- Contributing Expert, World Justice Project (WJP) and the Inter-American Development Bank (IDB Environmental Governance in Latin America study)
- Mentor, UWI Mona Guild Intergenerational Women's Mentorship Programme
- Associate Evangelist, Diocese of Jamaica and The Cayman Islands (UWI Chapel)
- Chairman, Board of Directors - Caribbean Coastal Area Management Foundation

Mr. Kevin Tankoo

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

Dr. Mike Burn

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

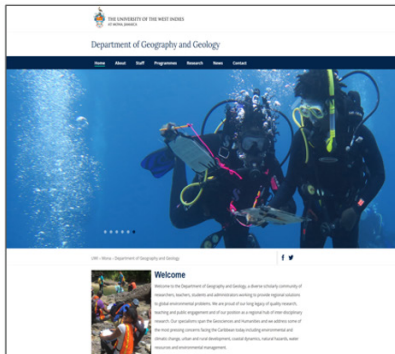
Dr. Arpita Mandal

- Member of the Technical Committee of Global Water Partnership Caribbean (GWP-C)

Dr. Taneisha Edwards

- President, Geological Society of Jamaica

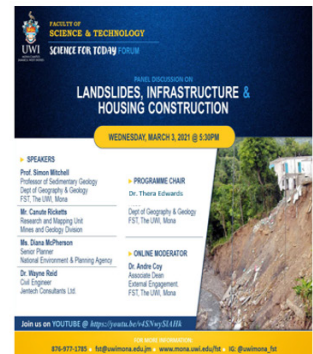
Dr. Thomas Stemann



New Departmental Website



Science for Today Seminars



- Virtual Lecture "Climate Change Phenomenon for Caribbean Countries" Dr. Vicotr Lopez Lopez, Visiting Mexico Chair March 18, 2021. Hosted via UWI TV
- Prof. Simon Mitchell conducted 10 radio interviews, and five number of newspaper articles.
- Dr. Rose-Ann Smith published a Newspaper Article in four online newspapers and 1 print in St. Vincent and the Grenadines and delivered four Facebook live Webinars (live viewership 50 to 300 participants).

AGILITY

INCOME GENERATION

The Department raised US\$510,013 (~JA\$77.7 million) in project funding for the 2020-2021 academic year. The summaries of the main projects are presented below.

Project Lead	Project Title	Funder	Amount (US\$)
Sherene James-Williamson	Bringing Geology and Geoheritage to Life	UNESCO International Geoscience Programme	28,000
Sherene James-Williamson	Small Island Developing States – the potential for developing UNESCO Global Geoparks: A rapid desktop Study	UNESCO	8,323
Arpita Mandal	Sediment Budget Assessment in the Upper Rio Minho Watershed (supplemental)	Ministry of Economic Growth and Job Creation	4,813
Donovan Campbell	Connecting Communities for Climate and Disaster Risk Preparedness (CCC-DRIP)	International Development Research Centre (IDRC)	140,000
	Revision of Community Profiles and Livelihood Baselines Assessments	Caribbean Development Bank (CDB)	88,500
	Adaptation & Mitigation Technology Needs Assessment (TNA) Phase IV	United Nations Environment Programme (UNEP)	42,000
	Capacity Building Program to Improve Stakeholder Resilience and Adaptation to Climate Change in Jamaica (CBCA)	Foreign, Commonwealth & Development Office	52,700
	Preparation of Community Assessment of Readiness Tool (CART)	Caribbean Development Bank (CDB)	108,000
	South Oropouche Riverine Flood alleviation Project	Development Bank of Latin America (CAF)	46,000
Total			518,336