

The **2017**
CariUSA STEM WORKGROUP
Promoting STEM education for the betterment of all people.
March 13-15

Participants

The CariUSA Workgroup comprised representatives from academia, the business sector, regional and national government agencies, geoscience professional organizations, non-governmental organizations (NGOs), and other stakeholders who are committed to the creation of a Caribbean geoscience workforce with the knowledge and skills to address energy development, the long risks of climate change and geohazards, and disaster management and risk reduction. CariUSA Workgroup participants aim to work collaboratively to plan and implement initiatives that advance this goal.

U.S. Participants

1. **Dr. Lyndon Brown** is an Adjunct Professor at **Lone Star College**, Houston, TX. He is a Jamaican geophysicist with expertise in seismology and disaster management. Dr. Brown has a long history of collaboration with U.S. seismologists, geophysicists and tectonic experts. He is the former Director of the Earthquake Unit at UWI, Mona and has worked closely with ODPEM and CDEMA.
2. **Mr. Wynn Casteel** is an undergraduate geoscience student at **Southern Methodist University** in Dallas, Texas. He is conducting student research under the direction of Dr. Matt Hornbach. Dr. Hornbach supported Mr. Casteel's participation in CariUSA 2017.
3. **Professor Saugata Datta**, **Department of Geology at Kansas State University**, is a chemical hydrogeologist who uses geochemistry and biogeochemistry to study groundwater contamination. Drs. Datta and Arpita Mandal in the Department of Geography and Geology at UWI are collaborating on a groundwater contamination and transport model for selected aquifers of Jamaica. Contaminated groundwater in the alluvial and limestone aquifers of the Kingston Basin is of serious concern, especially during time of drought. Safe water and sanitation align with Jamaica's Vision 2030 Implementation Policy. Dr. Datta's state-of-the-art laboratory at Kansa State is capable of analyzing organic and inorganic contaminants, trace metals, rare earth elements, and stable isotopes. Dr. Datta also develops innovative teaching tools for undergraduate students, including the Brownfield Action Tool, which combines forensic sciences, environmental sciences and groundwater contamination to engage learners. He is the Past Chair of the Geology and Health Division of the Geological Society of America.
4. **Dr. Katherine (Kelly) Ellins** is Program Director of Geoscience Education in the Jackson School of Geosciences at **The University of Texas at Austin**. She has been involved in Earth system science educational efforts and programs to increase diversity in the geosciences for over 19 years. In 2016 as a Fulbright Scholar in Jamaica she established the Jamaica Educational Seismic Network (JAESN) with support form ODPEM and the Earthquake Unit. Dr. Ellins has organized and delivered more

than 40 training workshops, professional development academies and summer institutes for K-14 educators with funding from state and federal grants. She has also led or participated in efforts to curate or develop Earth Science curricular resource collections and learning activities. Her professional service includes membership on the leadership committee for the AGU Geoscience, Art and Design Engagement community, the EarthScope Education Subcommittee (Chair, 2013 –2015), U.S. Science Advisory Committee (USAC) to IODP, and the IRIS Education and Outreach Standing Committee. She is the 2017 recipient of the NAGT Neil Miner Award for “exceptional contributions to the stimulation of interest in the Earth sciences”. Dr. Ellins was born and educated in Jamaica.

5. **Dr. Maria Esteva** is an Information Scientist at the **Texas Advanced Computational Center (TACC) at UT Austin**. She leads interdisciplinary teams of mathematicians, geoscientists, engineers, and social scientists to build data collections for geoscience and natural hazards engineering in the context of cyberinfrastructure and to make these publicly available to advance education and research in geosciences and environmental and natural hazards engineering. Two data initiatives are relevant to CARIUSA: DesignSafe.CI (<https://www.designsafe-ci.org/>) and Digital Rocks Portal (<https://www.digitalrockportal.org/>).
6. **Dr. Matt Hornbach** is Associate Professor of Geophysics at **Southern Methodist University (SMU)**. His areas of research include heat flow and fluid flow modeling, paleoseismology and geohazards, marine geology and geophysics, and gas hydrates. Dr. Hornbach has studied volcanism and landslides in the Lesser Antilles. He has four active projects on paleoseismology and geohazards of Jamaica. He previously characterized the offshore faults that pose a seismic risk to Kingston, created models of the tsunamis generated by the Port Royal and Kingston earthquakes, and is currently engaged in research to (1) assess ground shaking, surface stability, and fault reactivation in the Greater Kingston Metropolitan Area; (2) examine groundwater recharge and fluid flow in Jamaica using water table and water temperature measurements; and (3) determining geothermal energy potential in Jamaica. Dr. Hornbach supervises Jamaican graduate students at SMU. He and Vashan Wright are involved in a study around Kingston Harbour (on land) to determine the geotechnical slope stability for the greater Kingston area.
7. **Dr. Bernine Khan** is the Assistant Dean in the School of Natural Science and Mathematics at **The University of Texas, Dallas**. She is a Fulbright Scholar at UWI, Mona and an environmental engineer with expertise in hazardous waste management, water resources, wastewater management, and air quality as it pertains to Climate Change. Dr. Khan has 6 years of regulatory experience at the U.S. Environmental Protection Agency in the DC Headquarters at the Office of Water (Science and Technology) and the Office of Wastewater Management, as well as, the Air Quality Research Laboratory in RTP, North Carolina. Dr. Khan is also an advocate for STEM education and science literacy among underserved populations. She has worked with partners at Girls Inc. of Metropolitan Dallas and local colleges, high schools and businesses to organize the SMART and EUREKA! Summer camps where middle school girls gain exposure to STEM careers through interaction with female scientists and engineers. She was chosen by *INSIGHT Into Diversity* magazine to receive the publication’s Inspiring Women in STEM Award. In 2012, she received the U.S. President’s Volunteer Service Award for outstanding community service. Dr. Khan was born in Sierra Leone, but grew up in Jamaica.
8. **Dr. Richard Koehler** is an Assistant Professor in the **Mackay School of Earth Sciences and Engineering** and geophysicist with the **Bureau of Mines and Geology, University of Nevada, Reno**. His expertise is in seismic hazards assessment. He has carried out paleoseismic

studies on the Enriquillo-Plantain Garden fault in Jamaica and Haiti, and rapid geologic assessment of the 2010 Haiti earthquake. He is also experienced in developing policy and interfacing with government legislatures to implement programs to improve awareness and preparedness for earthquake hazards. These experiences include roles as the vice-chair of the Alaska Seismic Hazards Safety Commission (ASHSC) and chair of the Basin and Range committee of the Western States Seismic Policy Council (WSSPC). Policy statements include recommendations to mitigate seismically vulnerable public buildings and schools, development of post-earthquake technical clearinghouses, earthquake response field guides, improving earthquake monitoring and early warning systems, and assessments of potential economic impacts of future earthquakes, among others. These policy recommendations are available on-line at and <http://seismic.alaska.gov/recommendations.php> and <http://www.wsspc.org/public-policy/2017-wsspc-draft-policy-recommendations/>. His considerable experience is applicable to reducing the exposure to seismic risk in Caribbean countries, such as Jamaica, that are exposed to high seismic hazard. Website. <http://www.nbmj.unr.edu/Staff/Koehler.html>

9. **Dr. Cathy Manduca** is the Director of the **Science Education Resource Center (SERC) at Carleton College**. SERC is the largest online repository for geoscience education resources. Dr. Manduca leads efforts to improve education by guiding projects to completion, developing new directions, and raising funds for the Center's mission. She is the Principal Investigator for the NSF INCLUDES Earth Connections project, InTeGrate, and the NSF STEP Center in the Geosciences, which aims to transform geoscience education so that students of all kinds have opportunities to learn about the Earth in the context of the resource and environmental issues faced by civilization today. Dr. Manduca is also the Executive Director of the National Association of Geoscience Teachers, and serves on the American Geophysical Union's (AGU) Board of Directors and on the Science Education Board of the U.S. National Academies of Science. In addition to an extensive body of scholarly work, Dr., Manduca is a Geological Society of America Fellow, an American Association for the Advancement of Science Fellow and is the recipient of the Science Prize for Online Resources in Education (SPORE), 2010 and the Best Website Award from the Geoscience Information Society, 2009 for *On the Cutting Edge* website. Dr. Manduca received the Best Paper Award, Geoscience Information Society, 2006 for Manduca, C.A., S. Fox, and E.R. Iverson (2006). *Influencing user behavior through digital library design: An example from the geosciences*. D-Lib, 11(5) and the AGU Excellence in Geophysical Education Award, 2004. Website. <http://serc.carleton.edu/index.html>
10. **Dr. Arpita Nandi** is an Associate Professor and Chair of Department of Geosciences at **East Tennessee State University**. Her expertise is in landslide hazard mapping, geospatial analysis, and rock slope instability analysis. In Jamaica, heavy rainfall and earthquakes may trigger landslides. Dr. Nandi believes that a strong educational effort is needed for disaster risk reduction. She has collaborated with Dr. A. Mandal at UWI on a **Climate and Development Knowledge Network (CDKN)** funded project, "Climate Change and inland flooding in Jamaica, risk and adaptation measures for vulnerable communities" and on projects in the Smoky Mountain National Park, Tennessee. Dr. Nandi and Dr. Mandal are currently collaborating on a multi-hazard disaster recognition, management, mitigation, modelling and education project that focuses on selected watersheds in the Kingston-Saint Andrew area as well as in Tennessee.
11. **Mr. Robert O'Brien** (Wednesday only) friend of Jamaica. Mr. O'Brien was first introduced to Jamaica many decades ago when he served on the island as a member of the U.S. Peace Corps. His commitment to the island, its environment and its people has never wavered. He and his family own

a home on Jamaica's north coast. He is also a member of The Nature Conservancy's Caribbean Board of Trustees. TNC's Caribbean Division has advanced critical conservation work through high-impact and scalable initiatives to protect oceans and freshwater, while learning to adapt to climate change. Activities include the successful deployment of artificial reefs and sustainable fishing workshops for local fisher communities. In 2016, TNC completed its financial commitment to the first-ever regional fund for conservation—the Caribbean Biodiversity Fund.

12. **Dr. Kevon Rhiney** is a Jamaican geographer who is an Assistant Professor in the Department of Geography at **Rutgers University**. His expertise is in global environmental change, social and environmental justice, and food security as it pertains to Small Island Developing States (SIDS). He is currently the principal investigator of a 3-year Pilot Program for Climate Resilience (PPCR) project to test resistant varieties of crops through farmer-led field trials in Jamaica and is a contributor to the Intergovernmental Panel on Climate Change (IPCC) Special Report. Dr. Rhiney is the past Head of Section (Geography), Department of Geography & Geology, UWI, Mona. He was also a Visiting Fellow, Oxford University Department for Continuing Education (OUDCE) Kellogg College. He serves on the Advisory Planning Committee member for the Ministry of Water, Land, Environment and Climate Change, Government of Jamaica, is a member of the Jamaica Civil Society Consulting Group (ConSOC), serves on the Steering Committee for the Inter-American Development Bank (IDB) and on two Thematic Working Groups for Vision 2030 Jamaica (1. National Development Plan Hazard Risk Reduction and Adaptation to Climate Change and the 2. Environment and Natural Resources Management/Sustainable Urban and Rural Development).
13. **Dr. John Taber** is the Director of Education at the **Incorporated Research Institutions for Seismology (IRIS)**. IRIS is a consortium of over 120 U.S. universities dedicated to the operation of science facilities for the national and international acquisition, management and distribution of seismological data. The IRIS International Development Seismology activities "...recognize the importance of developing partnerships, technical infrastructure, and human capacity required for effective international cooperation as an instrument to accelerate scientific progress through collaboration with technologically equal partners, and as an essential element of various other modes of U.S. foreign engagement, including foreign assistance and science diplomacy". Dr. Taber is a seismologist with expertise in earthquakes, undergraduate and secondary geoscience education, and strategic planning with respect to national and international partnerships. Dr. Taber oversees the global IRIS Seismograph in Schools Program, the Research Experience for Undergraduate Program, and has supervised the development of a variety of educational products. IRIS is providing support for the Jamaica Educational Seismic Network (JAESN) via both hardware and software. Dr. Taber is interested in helping to develop the capacity in Jamaica to continue the network and the potential inclusion of Jamaican undergraduates in the IRIS internship program, if international funding can be found. IRIS webpage: <https://www.iris.edu/hq/>.
14. **Dr. Natasha Udu-gama** is a geographer and the Director of Community Partnerships at the **American Geophysical Union (AGU)**. AGU is an international non-profit scientific association with more than 62,000 members. Dr. Udu-gama specializes in building multi-sector partnerships for effective and sustainable community-owned projects that will develop solutions that have local impact and global implications. She has ten years of experience in the disaster risk reduction, early warning systems, and climate change adaptation fields.
15. **Dr. Elizabeth Vanacore** is a network seismologist and Assistant Research Professor based at the **Puerto Rico Seismic Network** at the **University of Puerto Rico Mayaguez**. Her expertise is in

observational and computational array seismology and applying these techniques to understand tectonic environments. Current operational projects at the PRSN include the development of revised geophysical data analyst training program, developing a new mL magnitude scale (in collaboration with Dr. Victor Huerfano) for the PRVI region and assisting the PRSN Education and Outreach group with various projects. She has also served as the task team chair for the UNESCO CARIBE-EWS Caribe Wave exercise in 2016 and is currently a member of the 2017 Caribe Wave task team.

Jamaican and other CARICOM Participants

16. **Dr. Trisha Alvarez** is an Assistant Professor at the **University of Trinidad and Tobago** where she delivers geoscience courses for students enrolled in the Technician's Diploma through Post-Graduate levels. Her research interests include tectonics, sedimentary basins, and surface and near surface processes. She has a fervent interest in geoscience education focused on Caribbean Geology and the promotion of geoscience disciplines and applications in the Caribbean. Dr. Alvarez is deeply concerned about the current state of public awareness and the delivery of geoscience education in Trinidad and Tobago.
17. **Mr. Clewon Ash** is the Education and Outreach Officer at the University of the West Indies, Seismic Research Centre in Trinidad. The Centre is the agency responsible for monitoring earthquakes and volcanic activity for the English-speaking islands of the Eastern Caribbean. Mr. Ash is an experienced academic researcher with in-depth knowledge of the use of Social Media tools in E&O and Brand Marketing. He has experience with survey management and various data collection methods. His special interest is in Hazard Perception and related perception studies. He is a member of the Intergovernmental Oceanographic Commission of UNESCO (IOC-UNESCO).
18. **Dr. Barbara Carby is the Director of the Disaster Risk Reduction Centre (DRRC) at the University of the West Indies (UWI).** The DRRC, launched in July 2006, mobilizes the UWI's multidisciplinary training, research and technical expertise to enhance disaster management and mitigation the Caribbean. It complements the work of other regional institutions like the Caribbean Disaster Emergency Management Agency (CDEMA) – the umbrella organization comprising 16 national disaster organisations in the region. The Centre provides technical and advisory consultancy services to mitigate the risks of disasters and mobilizes human resource capacity within the university to provide assistance both before and after disasters. Dr. Carby, a former Director General of Jamaica's Office of Disaster Preparedness & Emergency Management (ODPEM), is a Caribbean disaster management expert. She is credited with placing risk reduction on the national agenda and pioneering development of a national mitigation policy. She also expanded the hazard-mapping programme and fostered the use of hazard maps by Parish Councils in their development planning. Dr. Carby served most recently as the first Director of Hazard Management Cayman Islands, where she established a full-time national office for disaster risk management and developed a national strategic framework for disaster risk reduction to guide their national programmes. Dr. Carby has worked on several disaster management programmes regionally, and has also served in a voluntary capacity on the United Nations Scientific & Technical Committee for the Decade for Natural Disaster Reduction and as a member of the Advisory Board for the UN Central Emergency Response Fund.
19. **Mr. Paul Coleman** is the Senior IT and Electronics Technologist in the **Earthquake Unit** at the **University of the West Indies, Mona**. In that capacity he works with seismic and geodetic data, and helps to maintain the Jamaica Seismic Network and GPS monuments that are part of an NSF-funded

portable campaign and COCONET. Mr. Coleman is the coordinator of the Jamaica Educational Seismic Network (JAESN).

20. **Dr. Michael Coley** is a Lecturer in the **Chemistry Department at University of the West Indies, Mona**. Dr. Michael Coley's research group focuses on optimizing industrial processes and on applications involving the production and use of renewable energy sources. He is especially interested in sustainable approaches to waste management that minimize soil and water pollution and in informing the policy on waste management issues. He recognizes the importance of training scientists and engineers on the development of safe, practical solutions to waste management. Such solutions must not be are not constrained by conventional designs in order to work in Small Island Developing States (SIDS), like Jamaica. Instead, creativity and ingenuity is required.
21. **Mr. Lamon Davis** is a Physics teacher at **Hillel Academy** and a graduate student in physics at the University of the West Indies. Hillel hosts an AS-1 seismograph station as part of the JAESN network. He is interested in geophysics and seismology. Attended one day.
22. **Dr. Debbie-Ann Gordon-Smith** is a Lecturer in the **Department of Chemistry, Faculty of Science and Technology, UWI**. Her research focus is on the sources and behaviour of chemical contaminants in Jamaica's fresh and marine waters and the impact of these contaminants on various aquatic environments. Her primary focus is the study of the impacts of submarine groundwater discharge (SGD) on chemical budgets along Jamaica's coast. SGD is defined as groundwater flowing out across the sea floor through sediments, underwater springs and deep continental flows. At various sites around the world, SGD has been shown to transport significant amounts of nutrients and minerals from land to the marine environment, and at some sites has been linked to over-production, eutrophication and shifts in ecosystems. Due to the highly diffuse nature of SGD, the work involves the measurement of naturally-occurring radioactive isotopes tracers of groundwater, such as radon. She also has a keen interest in investigating the effects of climate change on tropical marine water chemistry and is involved in several other research projects, including the analysis and preservation of endemic plants in Cockpit Country and the investigation of dolphin-fisher interactions in Jamaica. For several years, Dr. Gordon-Smith has been dedicated to the development of the "non-traditional" sport of synchronised swimming in Jamaica and serves as the President of the Island Aquatics Synchro Club. She is a member of the Association for the Sciences of Limnology and Oceanography, a manuscript reviewer for the Journal of Arts, Science and Technology and a certified SCUBA diver.
23. **Dr. Robert Kinlocke** is a lecturer in the **Department of Geography and Geology at the University of the West Indies, Mona** where he teaches courses in Geographic Information Systems, Urban Planning and Research Methods. His main research interests centre on climate change adaptation, community development and GIS. He is a member of the Jamaica Statistical Society and currently serves as president of the Jamaican Geographical Society.
24. **Mrs. Sharon Lake** is an entrepreneur who is a former insurance executive specialising in **Information Technology and Operations Management**. She is past Chair of the Women's Leadership Initiative of Jamaica and a member of the Executive Committee of the Jamaican chapter of the International Women's Forum. She attended one day.
25. **Architect Jacquiann Lawton** (RA JIA TTIA) has 20 years of professional experience ranging in project scope and building type including civic, commercial, residential and hospitality. As Director of Compass Workshop Limited she received National Awards in Design Excellence. Since 1998, Architect Lawton has been engaged with the development and re- structuring of the Caribbean School

of Architecture (CSA), University of Technology Jamaica, with the mandate of educating regionally trained architects. Contributions to architectural discourse include presentations and published works locally, regionally and internationally. The Master of Architecture Programme Director for two terms, she is currently a Senior Lecturer at both Graduate and Undergraduate levels. A scholar of The Cooper Union and The University of Florida she connects academia with the profession through advocacy. She served on the Beaches and Coastal Resources Committee (NRCA) and as a Member of the Committee for the Development of a National Comprehensive Disaster Risk Management Policy and Strategy with ODPEM. Architect Lawton serves the architecture community as a member of The Architects Registration Board of Jamaica and the Jamaican Institute of Architects. A founding Member of the Jamaica Surfing Association (JSA), Jacquiann is a soul surfer at heart and can be seen along the coast riding the waves with her husband and son.

26. **Dr. Parris Lyew-Ayee Jr.**, Director of the **Mona Geoinformatics Institute (MGI)** at the **University of the West Indies, Mona**, is a Geologist/Geographer and Senior Lecturer at UWI. MGI, the geographic information systems (GIS) hub of the Mona campus, is one of the university's premier units, responsible for, among other things, the development of the region's first GPS navigation system, JAMNAV. Projects include commercial and research and development activities. Dr. Lyew-Ayee's interests span fields in science, technology and business, seeking synergies between all three areas. His research includes geospatial analysis, geology, geohazards, disaster management, and crime modeling. He cares deeply about the application of this work in business planning. He has received many awards both locally and internationally for research and business development. Dr. Lyew-Ayee Jr. is the recipient of the 2004 Prime Minister's Youth Award for Excellence in Academia, the 2005 Youth Musgrave Medal, the 2006 Governor-General's Youth Award for Excellence, and the EduVision 2009 Award for Excellence in innovation. Named one of the PSOJ's '50 under 50 Business Leaders Shaping Jamaica' awardees. He is currently a U.S. Eisenhower Fellow. He chairs the Water Resources Authority (WRA) and the National Works Agency (NWA). He also sits on several other boards, including the main Board of Grace Kennedy Ltd, its Corporate Governance and Nomination Committee and Audit Committee, as well as is a Director of GK Foods & Services Limited and Hi-Lo Food Stores, and also Director at the Bureau of Standards of Jamaica. He is the author of the award winning *Natural Hazards Atlas of Jamaica*.
27. **Dr. Arpita Mandal** is a Senior Lecturer in the **Department of Geography and Geology at the University of the West Indies, Mona**. She teaches Water Resources, Hydrology and Hydrological Modelling, Engineering Hydrology and Geophysics. Her research focuses on hydrological modeling, hydraulics, climate change and impact on flood risk and water resources. She also works on groundwater contaminant transport and landslide debris flow models. She has worked on projects funded by CDKN, World Bank, ICLEI with colleagues from Climate Studies Group Mona, UWI Cave Hill and St Augustine, East Tennessee State University and Ghent University, Belgium. She has also conducted educational workshops for parish disaster coordinators, stakeholders in Jamaica on hydrological modelling, use of Open Source APP (ODK) for disaster data collection. She is also the technical committee member for Global Water Partnership, Caribbean. She has worked with both Government and Non-Government Organizations in Jamaica and in the Caribbean such as NSDMD, ESL, ODPEM and Caribbean Caribbean Community Climate Change Center (CCCC) on projects related to geospatial data, disaster risk reduction, climate change and flood risk. She is currently involved in a year-long training programmer funded by USAID and run by CCCC involving training of regional and local technical persons for the islands of the Caribbean on hydrological models and tropical storm models.

28. **Ms. Diana McCaulay** is a writer and environmental activist. She is the Chief Executive Officer of the **Jamaica Environment Trust (JET)**. JET implements projects under three main focus areas: environmental education, law and advocacy and conservation. Projects include Jamaica's longest running environmental education programme for students and teachers, the Schools' Environment Programme, which has been in continuous operation since 1997. JET's law and advocacy programme works to protect Jamaica's natural resources using the law, public participation processes, policy review and the media. JET stages and coordinates environmental events in Jamaica, including the annual International Coastal Cleanup Day. Conservation work has included monitoring of sea turtle nesting and the patrol and management of the Pedro Bank fish sanctuary.
29. **Dr. Ruth Potopsingh** is Associate Vice President of Sustainable Energy in the Caribbean Sustainable Energy and Innovation Institute (CSEII) at **University of Technology (UTech)**, Jamaica. She has a background in geoscience and a Ph.D. in Sustainable Development. At UTech, Dr. Potopsingh Introduced solar energy as part of the energy mix for UTech, launched a short course in Solar PV Design and Implementation in November 2014, established a Master's of Science Degree in Sustainable Development and Climate Change with the support and commitment of the GIZ. She is the Project Manager on the Solar Hydrogen Cooking Gas Project. Before joining UTech, Dr. Potopsingh was the Group Manager of the Petroleum Corporation of Jamaica.
30. **Dr. David Smith** has over 28 years working experience at the Ph.D. level, in academia, civil society, the private sector and the United Nations; focusing on Sustainable Development, Biodiversity Conservation, Energy, Climate Change, and Disaster Risk Reduction. He is the Coordinator of the Institute for Sustainable Development at The University of the West Indies (UWI) and is a member of the independent group of experts to draft the UN Global Sustainable Development Report for 2019. He is the Caribbean Chair for the Sustainable Development Solutions Network and Coordinator of the University Consortium for Small Island States (UCSIS). The Institute for Sustainable Development focuses on research in Disaster Management, Environmental Management, Governance and Policy. David works with the Disaster Risk Reduction Centre at the ISD in project development and implementation including mapping disaster risk and hazards from earthquakes and floods for the Caribbean. The Institute was recently awarded a five-year grant from the Government of Canada to generate, manage and share knowledge on Comprehensive Disaster Management. The project will fund research, training and dissemination of information to professionals, students and SMEs.
31. **Mr. Rohan Richards** is the Principal Director in the Ministry of Economic Growth and Job Creation with responsibility for the National Spatial Data Management Division. Mr. Richards holds a Master of Science Degree in Natural Resources Management and Bachelors in Applied Chemistry and Chemistry with a Postgraduate Diploma in Public Administration. He has held several positions within government at the senior policy level and has led the development of several sector area policies. In his current capacity, he has focal point responsibility for national geospatial data management, which includes overseeing GIS infrastructure management, training and education, and co-chairs the United Nations Global Geospatial Information Management Working group on Geospatial Information and Services for Disaster. Mr. Richards has led the implementation of several enterprise level WebGIS projects, including the development of a parish-based Disaster Risk Information Platform and a geospatial data post disaster assessment mobile tool.
32. **Mr. Herbert Thomas**, Managing Director, the Water Resources Authority (WRA), Jamaica. BIO not available at this time. Attended for one afternoon.
33. **Mr. Vashan Wright** is a Jamaican doctoral graduate student in Geophysics at **Southern Methodist University**, Dallas. He has a Bachelor's degree in Geology from Calvin College. In his research,

Vanshan uses a combination of GPS data, seismic reflection profiles and gravity cores to understand the neotectonic and paleoseismic history of Jamaica. As a native of Jamaica, Vanshan is familiar with the environment and his work will help prepare residents for future earthquakes in Jamaica. He is studying fault reactivation and ground shaking in the Greater Kingston Metropolitan area, groundwater recharge and fluid flow in Jamaica, and Jamaica's geothermal energy potential. He is interested in working with researchers in Jamaica to develop high temporal/spatial resolution networks for assessing groundwater and heat flow across the island (which we can use to assess water table stability, ground water flow, and possible geothermal energy potential for the island). He is also interested in involving local communities and educators involved in research as citizen scientists through outreach and education. Vanshan was the recipient of a 2014-2015 COCONet Graduate Fellowship. The Continuously Operating Caribbean GPS Observational Network (COCONet) project was funded by the National Science Foundation (NSF) with the aim of developing a large-scale geodetic and atmospheric infrastructure in the Caribbean that will form the backbone for a broad range of geoscience and atmospheric investigations and enable research on process-oriented science questions with direct relevance to geohazards.

34. **Mr. Larry Watson** is the President of the **Jamaica Chamber of Commerce (JCC)**. The mission of the JCC is '...to facilitate our members to be the drivers of growth and prosperity for Jamaica'. To that end, the JCC is committed to working with private sector organizations in Jamaica, the Caribbean and world to ensure that Jamaica grows and prospers. The JCC endeavors to empower of women in business. Mr. Watson holds an MBA from the University of Toledo in Ohio, USA. He is General Manager of Confectionery and Snacks Jamaica Limited. Before that, he was a management consultant between 2006 and 2011. He worked with and J. Wray & Nephew Limited as managing director of its Global Marketing Division, and CEO of Estate Distribution, a subsidiary of Tia Maria International in London. He has chaired the European Union's Target Europe Program. An expert in rum, whisky and fine wine, Mr. Watson is the Vice Counselor of the Jamaican chapter of the Gastronomique Chaîne des Rôtisseurs. The Chaîne is an international association of gastronomy established in over 80 countries.

Throughout the meeting, representatives from the U.S. Embassy in Jamaica, faculty, researchers and administrators from UWI, Mona, teachers from Ardenne High School, and representatives from the Scientific Research Council (and CEIS) stopped in as their schedules permitted.

Participating via Skype

Mr. Ronald Jackson, Chief Executive Officer of **CDEMA** (Caribbean Disaster Emergency Management Agency).