

## EDUCATION

### Ph.D. Geography

Expected 2019 University of Iowa

### M.Sc. Environmental Hazards and Geographical Information Systems (GIS)

2008 Coventry University, United Kingdom Awarded with Merit

### B.A. Geography (Minor: Environmental Studies)

2007 University of Guyana, Guyana Awarded with Distinction

## HONORS AND AWARDS

- 2017 University of Iowa, Stanley Graduate Award for International Research
- 2016 University of Iowa, Geoinformatics for Environmental and Energy Modelling and Prediction (GEEMAP) Travel Award
- 2016 University of Iowa, Center for Global and Regional Environmental Research (CGRER), Graduate Student Travel Award
- 2015-Present Geoinformatics for Environmental and Energy Modeling and Prediction (GEEMaP), University of Iowa. Awarded fellowship support from the National Science Foundation (NSF) and placement within the Integrative Graduate Education and Research Traineeship (IGERT) GEEMaP program at the University of Iowa
- 2007 Geography Prize, University of Guyana. Awarded to the best graduating undergraduate with a major in Geography.

## PUBLICATIONS

- Drakes, O. Map contributor in Oxford, P.; Bish, R.; Mena, B. (2016) *Undiscovered Guyana*, WWF Guianas and the Guyana Ministry of Natural Resources
- Williams P. Williams A., Charles, E., Bernard, C., Drakes, O., Prince, W., Edghill, S., Abraham, D., King, G., Maharaj, G., King, T. (2012) *Wetlands of Guyana*. World Wildlife Fund- Guiana
- Drakes, O. (2006) *Land Degradation, Desertification and Food Security*, Caribbean Youth Development Issue 2 September/October. Commonwealth Youth Programme

## PROFESSIONAL EXPERIENCE

- Oct. 2014-Sept 2015 **Regional Risk Assessment Consultant: Guyana Civil Defence Commission, Georgetown, Guyana**
  - Developed and currently implementing a methodology for Regional Risk Assessments to be employed in each of Guyana's ten administrative regions.
  - Guides the regional stakeholder consultation and focus group process.
  - Compiles data and produces historical hazard, risk and vulnerability maps, data analysis, and regional risk and vulnerability assessment reports.
- May 2009-Sept. 2015 **Consultant GIS Specialist: World Wildlife Fund Guianas (Guyana Office) (WWF), Georgetown, Guyana**
  - Constructed entire GIS, determined the GIS data needs of all projects.
  - Conducted satellite imagery analysis to determine the extent and distribution of wetland areas in Guyana.
  - Prepared maps highlighting identified wetland areas and specialized GIS products including maps and GIS analysis for specific needs of project consultants.
  - Prepared and maintained a GIS database covering all material and output products.
  - Consulted with the database designer and consultants to develop an adequate database for the project needs.

- Functioned as a GIS lead in the ground truthing and sampling of identified areas, identified sampling sites, areas of interest etc.
- Shortlisted sample sites for Kaieteur National Park (KNP) rapid assessment based on GIS analysis.
- Developed and prepared maps for study team navigation.
- Headed consultation with indigenous communities to identify final sampling/study areas within the KNP.
- Prepared map products upon request of specialist consultants for their area specific analyses in all projects.
- Developed national land cover maps via Landsat, Spot and ALOS PALSAR data.
- Developed land cover/use maps for selected wetlands sites of national importance.

Sept. 2010-June 2014     **Lecturer: *University of Guyana, Turkeyen Greater Georgetown, Guyana***

- A part time lecturer I conceptualized and implemented a partnership between the national disaster management agency, the Civil Defence Commission and School of Earth and Environmental Sciences, University of Guyana where undergraduates conduct community level hazard, vulnerability and capacity assessments.
- Developed course curricula, teaching and testing materials and conducted classes in introductory databases, environmental hazards & disaster preparedness and GIS to diploma, undergraduate and graduate (Masters) students.
- At the request of UNICEF (Guyana) and the School of Education and Humanities, I developed, implemented and taught the Environmental Hazards and Disaster Preparedness for Early Childhood Development Practitioners certificate course.
- Functioned as an internal/external examiner of dissertations and research supervisor for final year students in the School of Earth and Environmental Sciences, Faculty of Agriculture and Forestry and School of Education and Humanities of the University of Guyana.

Nov. 2013-Feb. 2014     **GIS Disaster Risk Reduction Spatial Database Consultant:  
*United Nations Development Program & Guyana Civil Defence Commission Georgetown, Guyana***

- Developed and built a disaster risk reduction spatial database for use in observations, analysis and early warning at the regional Risk Reduction Management Center, drawing from data reported from early warning points.
- Designed content (including training materials, user and administrative manuals), methodology and conducted training of regional administrative staff and representatives of indigenous villages in exploitation of the database and GIS including use of preset queries, reports, map layouts, visualizations etc. and data gathering.
- Designed and developed regional risk maps, including evacuation maps for all natural hazards affecting Guyana Administrative Region 9.
- Contributed to the review and implementation of the Guyana National Community Based Disaster Risk Management toolkit.

June 2013- Oct. 2013     **Conservation Science Program GIS Intern: *World Wildlife Fund United States, Washington DC, United States***

- Developed the basis of a counterfactual study design for evaluating the conservation impacts of Forest Stewardship Council certification in Peru and Cameroon.
- Researched and developed methodology for appropriate statistical site matching via biogeographical and socio-economic indicators.
- Researched methodology and indicators for determining and measuring occurrences of deforestation and degradation via remote sensing.
- Located datasets, created and managed a GIS database of all necessary spatial data.
- Liaised with field experts across the WWF network and external agencies to ensure data quality, and the existence of comparable data sources.

Jan. 2013- June 2013     **GIS Consultant: *E & A Consultancy, Georgetown, Guyana***

- Wastewater Quality Monitoring and Condition Assessment of Sanitation Infrastructure  
Compiled composite drawings and maps of the Stevedore Housing Scheme existing sewer network and Georgetown wastewater sampling stations in AutoCAD and ESRI vector formats. Worked with land surveyor to document the pipe material, diameter, and length, gradient elevations of the manholes, inlets and connection points. Liaised with Guyana Water Inc. operations department and project managers.
- Guyana National Traffic Database  
Designed and implemented a database and GIS methodology for the collection and analysis of all national traffic accident data 2002-2013. Conducted capacity building sessions for consultancy staff in the use of Microsoft Access. Developed maps and analysis for accident datasets.

May 2011

**Researcher: *Conservation International (CI) Guyana, Georgetown, Guyana***

- Investigated all biological research done within Guyana from 2002- 2011.
- Identified the biodiversity class studied.
- Determined the location of the study sites.
- Created shapefiles and/or collected coordinates (point data) for all studied areas.
- Found contact information for study authors/researchers.

May 2009- June 2010

**GIS Specialist: *Kaieteur National Park (KNP) Management Plan Team Georgetown, Guyana*** attached to the National Parks Commission, Guyana and the World Wildlife Fund Guianas (Guyana Office).

- Conducted on the job capacity building of project personnel and NPC/KNP staff during the various aspects of the management planning process.
- Provided guidance to project personnel as it relates GIS data and information needed for the zoning process.
- Prepared resource use maps for the Kaieteur National Park and two indigenous communities bordering the park.
- Prepared maps of historical boundaries (from written historical accounts), land use, land cover, potential usage areas, infrastructure conditional assessments etc.
- Designed and implement a GIS database for the KNP.
- Designed and prepared map products for the management of the KNP.
- Supported the Protected Areas Specialist in the zoning process, contributing to the preparation of management strategies and site plans for each use area.
- Lead in guiding and conducting stakeholder consultations as it relates to GIS data gathering and interpretation. Incorporated where possible local traditional knowledge of the area in maps and GIS analysis, including traditional hunting and fishing areas and sacred sites

## **VOLUNTARY SERVICE**

2015- Present

**Member of Student Council: *William Averette Anderson Fund***

- Coordinator of Professional Development Committee- Co-moderated the Professional Development Webinar Series.
- Organize professional development webinars, research writing workshops and other programming.

2003-2011

**President and Executive Member: *Rotaract Club of Georgetown Central Georgetown, Guyana***

- Designed and managed community service projects benefitting impoverished communities, adolescents and the elderly. Focused particularly on areas of literacy, health and disaster preparedness and response.
  - Successfully arranged partnerships and funding from governmental and NGOs including UNICEF, PAHO/WHO, Ministry of Health, and Ministry of Education.
  - Doubled membership and outreach activities over a 2 year period.
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## **PRESENTATIONS**

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- 2017      **Presenter: National Academies of Sciences and Zurich Flood Resilience Indicators: Linn County Survey Analysis**  
Presented statistical analysis of flood indicators for Linn County, IA.
- 2016      **Presenter: William Averette Anderson Fund**  
Presented poster “Participatory Driven Hazard Assessments”
- 2016      **Presenter: Natural Hazards Workshop**  
Presented paper “Inclusive Hazard Assessment” in the New Researchers Presentations session
- 2016      **Presenter: Association of American Geographers Annual General Meeting**  
Presented paper “Participatory Driven Regional Hazard Assessment: The Guyana Experience” in session Hazards Risks and Disasters 1: Vulnerability Assessments session.
- 2015      **Presenter: GEEMaP Research Workshop, University of Iowa**  
Presented paper “Participatory Driven Regional Hazard Assessment: The Guyana Experience”
- 2013      **Contributor: Guyana National Geographic Information System Policy**  
Contributed to the development of the national policy document on GIS in Guyana. This document outlines the integration and use of GIS into and across national organizations as well as the availability of data and ownership rights of users and data creators.
- 2013      **Participant: Actions de formation Transfrontalieres pour L'Integration du Plateau des Guyanes e Amazonie (Cross border training for the integration of the Guiana Shield in the Amazon) -ATIPA**
- Represented the School of Earth and Environmental Sciences, University of Guyana in developing a Memorandum of Understanding for a joint International Masters with universities from Suriname, French Guiana, French West Indies (Guadeloupe) and Brazil.
  - Led the working group developing the course components and teaching modules the Environment and River Corridors and Natural Resources and Biodiversity areas of teaching.
- 2012      **Participant: REDD+ Forest Change Assessment**  
Supported the Guyana Forestry Commission in their Two Year Forest Area Change Assessment with specific reference to the area of mapping forest change in support of the national REDD+ and Low Carbon Development Strategy initiatives facilitated by Indufor Asia Pacific and Guyana Forestry Commission.
- 2012      **Participant: Early Childhood Development Technical Working Group**  
Developed and facilitated for UNICEF and the University of Guyana teaching module on Environmental Hazards and Disaster Preparedness in Early Childhood Education Certificate Course
- 2011      **Participant: Regional Workshop on Disaster Risk Reduction and Emergency Response in Early Childhood in Latin America and the Caribbean Panama City, Panama.**  
Sponsored by Child Fund International, Plan International and UNICEF. Represented the University of Guyana.
- 2011      **Participant: Paper Presented: Considerations for Environmental Hazards in Early Childhood Development (ECD) Policy Development** Sponsored by United Nations Children's Fund (UNICEF Guyana). Led ECD focus group discussions on the topic area.
- 2010      **Participant: Paper Presented: Climate Change and its Impact on Children (0-8 years)** Sponsored by United Nations Children’s Fund (UNICEF Guyana)