


Martine Elisabeth Mathieu

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## Education

PhD., Geospatial Analytics, North Carolina State University, 2024

M., GIS and Environmental Management, Jean Monnet University in Saint-Etienne, France, 2009

B.S., Agronomy engineering, Natural Resources and Environment, Haiti State University, Haiti, 2005

## Professional experiences

- 2020 – 2022 Graduate Research Assistant, Center for Geospatial Analytics, North Carolina State University
- 2021 Consultant, Environmental Information System of Haiti
- 2020 NORC at the University of Chicago, Spatial analyses for market and food security in Haiti
- 2020 Research assistant, Teaching statistics programming to undergraduate students from NC State and NC A&T for a joint research project
- 2020 Consultant, GIS Analysis for the Preparation of a Methodological Guide for Strategic Environmental Assessment of Coastal Areas in Haiti, Focus International – Canada
- 2019 Consultant, Review of the Environmental Management Plan for the Project “Jaden Lakay”, Agronomes et Vétérinaires sans Frontières
- 2016 – 2019 Project Manager, United Nations Environment Programme, Project title: “Developing Core Capacity for Multilateral Environmental Agreements Implementation in Haiti”
- 2010 – 2018 Instructor, State University of Haiti (2010-2018) and Quisqueya University (2010-2014)
- 2016 Consultant in Environment and GIS, Geospatial Environmental Assessment in the Border Region Haiti-Dominican Republic for Environmental Diagnosis. Project: Binational Observatory on Migration, Environment and Commerce
- 2016 Environment and Local Development Expert, Particip Gmb (German firm), Technical Assistance on Environmental and Local Development Initiatives in the Ministry of the Environment
- 2015 Consultant in Environment and GIS – Remote Sensing, Analysis of Representative Ecosystems in the National System of Areas Protected, Ministry of Environment/United Nations Development Programme
- 2015 Consultant in Spatial Analysis, Contribution to the Preparation of the Macaya Natural National Park Macaya Management Plan, Ministry of Environment/ United Nations Environment Programme
- 2015 Consultant in Environment and Spatial Database, Development of Functional Specifications for the Implementation of a Spatial Data on Protected Areas, Ministry of Environment/United Nations
- 2014 – 2015 Consultant in Agriculture and Environment, Coordination of Technical Studies (Socio-economic Studies, Biological Inventory, Technical Delimitation, Spatiotemporal Evolution) for the Perimeters of Pichon and Dry Forest of Belle-Anse
- 2014 – 2016 Program Specialist in Natural Sciences, National Haitian Cooperation Commission with UNESCO, Support to Ministries/Institutions Concerned with Implementing Scientific Programs in Haiti (International Programme on Man and the Biosphere, International hydrological Programme), UNESCO
- 2014 Consultant in Environment and Agriculture, Spatio-temporal Analysis of the Dynamics of Ground Occupation in the West in the Context of Climate Change and Environmental Risks, National Center for Geo-Spatial Information
- 2013 Consultant in Environment and Agriculture, Social and Environmental Analysis – Program of Social Water Management, Inter-American Development Bank

- 2012 – 2013 Coordinator in National Agency for Protected Areas, Focal point CBD/Coordination with Projects on Protected Areas/National Parks, Ministry of Environment
- 2009 – 2012 Project Coordinator, National Center for Geo-Spatial Information/Territorial Information Program for Sustainable Development, Project "Geographic Information for the National Parks Management" and Supervision of the Coordination for the "Watershed" and "Agricultural Statistics" Projects (October 2011)
- 2012 Internship, Strategies for Establishment and Creation of a Prototype of Spatial Data Infrastructures (SDI), Grupo de Investigación Mercator, Dpto. Ing. Topográfica y Cartografía, ETSI en Topografía, Geodesia y Cartografía, Universidad Politécnica de Madrid, Spain
- 2011 Consultant in Environment, Evaluation and Mapping of Environmental Risks for 12 Districts, Center for International Studies and Cooperation
- 2011 Consultant in Agriculture and GIS, Determining, from spatial Analysis, Favorable Areas for the Development of Francisque Mango Industry, Inter-American Institute for Cooperation on Agriculture
- 2009 Internship and Master Thesis, Creating a Multidisciplinary Spatial Information System – Biodiversity and Viticulture, Unité Propre Paysage, Ecole Supérieure d'Agriculture (ESA), France, Research Project "Biodiversity and Wine Territory: Study of Interactions between Viticulture and Biodiversity as Part of a Local Initiative"
- 2007 – 2008 Practical Work and Assistantship, Attached to the Department of Natural Resources and Environment and to the Soil Laboratory, Faculty of Agronomy and Veterinary Medicine
- 2006 – 2008 Junior Consultant on Diagnostic Studies and Environmental Assessments, Agricultural Studies

### **Scholarships and Awards**

*KC Donnelly Fellowship*, Externship at the Iowa Superfund Research Program, Performing AERMOD predictive modeling of PCB exposure in Portland Harbor, 2022

#### *Fulbright:*

English Intensive Program, Indiana University, Institute of International Education, 2019  
North Carolina State University, Laspau, 2019 – 2021

*United States Agency for International Development*, "Support to Agricultural Research and Development" Project, Faculty Development Academy Program, 2017

*Grupo de Investigación Mercator, Universidad Politécnica de Madrid*, Infrastructure of spatial data, 2012

*European Commission*, Territorial Information Program for Sustainable Development, Scholarship for a Master in Geographical Information System, France, 2008 – 2009

### **Presentation at symposiums and conferences**

PurpleAir as a Tool for Air Quality Management in a Rural Setting, LSU-SRP Webinar, 2022

Spatial Associations of Long-term Exposure to Diesel Particulate Matter and Black Race with Seasonal and Annual Mortality Due to COVID-19 in the Contiguous United States, NC State, Equity Research Symposium, 2022

Exposure to Diesel Particulate Matter and COVID-19 Mortality in the Continental United States, NC GIS Virtual Conference, 2021

Exposure to Diesel Particulate Matter and COVID-19 Mortality in the Continental United States, Dellinger Virtual Conference, Louisiana State University Superfund Research Program, Poster presentation, 2021

Inclusive Excellence through Digital Learning: An Undergraduate Research Experience to Pilot Cross-Institutional Collaboration between a Historically Black University and a Predominantly White Institution, Black Doctoral Network Conference, Poster presentation, 2020

Effect of maize (*Zea mays L.*) on nitrogen compounds and phosphate in the interstitial water of dredged sediments from Canal Bois de Chene, Port-au-Prince, Haiti, June 2006;

Development of maize (*Zea mays L.*) on dredged sediments rich in nutrients (N, P): Ecohydrology and Phytotechnology Approach; Port-au-Prince, Haiti, In Colloque International « Faire face à la pénurie de l'eau » Port-au-Prince : Université Quisqueya, 22-23 March 2007;

E. Emmanuel, M.E. Mathieu, P. Jeune. Use of corn (*Zea mays L.*) in the retention of nitrogenous and phosphate compounds contained in the interstitial water of dredged sediments from Port-au-Prince (Haiti). Conference "Ecohydrology for Sustainability in the context of Global Change". Asunción, Paraguay 2-3 July 2009.

### **Publications**

Calibration of the Low-cost Particulate Matter Sensor PurpleAir: Model Development for Air Quality Management in a Rural Setting, Martine Elisabeth Mathieu, Chuqi Guo, Jennifer Richmond-Bryant, *In preparation*

Spatial Associations of Long-term Exposure to Diesel Particulate Matter with Seasonal and Annual Mortality Due to COVID-19 in the Contiguous United States, Martine Elisabeth Mathieu, Joshua Gray, Jennifer Richmond-Bryant, *In review*

Inclusive Excellence through Digital Learning: An Undergraduate Research Experience to Pilot Cross-Institutional Collaboration between a Historically Black University and a Predominantly White Institution, Martine Elisabeth Mathieu, Matilda Odera, Andrea Ofori-Boadu, Jennifer Richmond-Bryant, *In review*

### **Study reports in Research – Development**

Report of binational environmental diagnosis, OBMEC, 2016 (Contributor)

Analysis of representative ecosystems within the national protected area system, MDE, PNUD, 2015 (Team Leader and Contributor)

Management Plan of Macaya National Natural Park, MDE, UNEP, 2015 (Contributor)

Dynamics of spatio-temporal analysis of soil occupancy in the northwest in the context of climate change and environmental risks, CNIGS, 2014 (Lead Author)

Social and Environmental Analysis and Environmental Plan Management - Social Management of Water Programme, BID, 2013 (Contributor)

Determination, from spatial analysis of favorable areas to the development of Francisque mango industry, IICA, 2011 (Lead Author)

Effect of maize (*Zea mays L.*) on Nitrogen components and phosphate in the interstitial water of dredged sediments from Canal Bois de Chene, Port-au-Prince, Haiti, FAMV, UEH, 2006 (Lead Author)