

CYNDHIA G. RAMATCHANDIRANE, M.S.
Research Associate, The Water Institute of the Gulf

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Education

M.S. in Earth and Environmental Sciences, December 2013
Tulane University, New Orleans, Louisiana

B.A. in Geosciences, May 2011
Wellesley College, Wellesley, Massachusetts

Research Interests

Coastal restoration and management, water resources science and management, sediment processes associated with coastal zones and deltas, wetlands science, geography, environmental science education and outreach

Professional Experience

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| The Water Institute of the Gulf | 2013-Present |
| <ul style="list-style-type: none"><i>Research Associate in Physical Processes and Sediment Systems</i> | |
| Louisiana Universities Marine Consortium | 2011-2013 |
| <ul style="list-style-type: none"><i>Graduate Research Assistant</i> | |
| Coastal Protection and Restoration Authority | 2012-2013 |
| <ul style="list-style-type: none"><i>Coastal Science Assistantship Program (CSAP) Intern</i> | |
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Recent and Ongoing Projects

Data collection effort in the Calcasieu Ship Channel

The Water Institute of the Gulf, Baton Rouge, Louisiana

Conducting fieldwork in the Calcasieu Ship Channel (November 2016-ongoing) to investigate sediment dynamics between Calcasieu Lake, the Ship Channel, and the coast. Participated in field campaigns in the Calcasieu Ship Channel during spring 2014. Collected data included

bathymetry, hydrodynamics, and bed surface and suspended sediments. Responsible for processing all data and preparing data report for modelers

Barataria Basin Exchange Analysis

The Water Institute of the Gulf, Baton Rouge, Louisiana

Utilized data collected in Barataria Basin to de-convolve effects of the Mississippi River discharge, cold fronts, and the operation of the Davis Pond freshwater diversion on receiving basin dynamics. Collaborating with Dr. Nan Walker at LSU to analyze suspended sediment dynamics using MODIS satellite imagery.

Data collection effort in the lower Mississippi River receiving basins

The Water Institute of the Gulf, Baton Rouge, Louisiana

Led and conducted fieldwork for one year (June 2014-June 2015). Responsible for deploying and maintaining a network of instruments in Barataria and Breton basins. Collected data included bathymetry, hydrodynamics, suspended sediment, and water quality in the two basins. Deliverables included processed data and data report.

Chenier Plain marsh formation, southwest Louisiana

M.S. thesis, Tulane University, New Orleans, Louisiana

Investigated effects of cold fronts and Atchafalaya River discharge on the sediment exchange and reactivation of the Chenier Plain along the coast of southwest Louisiana.

Developing an updated marsh salinity score for the coast of Louisiana

Internship, Coastal Protection and Restoration Authority, Baton Rouge, Louisiana

Tested a marsh vegetation salinity score algorithm using the Louisiana Coastwide Reference Monitoring System database.

Technical Skills

- Software: JMP, ArcGIS, SigmaPlot, Excel
 - Languages: French (fluent) and English (fluent)
 - Field:
 - o Operate small boats
 - o Collect sediment cores and water samples
 - o Deploy instruments for hydrodynamic, water quality, and bathymetry measurements
 - Laboratory:
 - o Instrument calibration and data processing for water quality (YSI, CTD), hydrology (Aquadopp, ADCP), suspended sediment (LISST, VanDorn), bathymetry (single- and multi-beam), and GPS (Trimble RTK)
 - o Sample preparation and analyses for grain size by laser diffraction, α and γ spectroscopy for radioisotope dating (^{210}Pb , ^{137}Cs , and ^7Be), and mass spectrometry for $\delta^{13}\text{C}$, %OC, TN, and C:N measurements
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Selected Conference Presentations

Cyndhia Ramatchandirane, Ehab A. Meselhe, Mead A. Allison, Austin Feldbaum, Diana Di Leonardo, Collin Ortals, and Dallon H. Weathers. *Engineering salinity control in Lake Calcasieu, Louisiana to protect fringing wetlands and estuarine ecosystems while preserving deep-draft access to the port of Lake Charles*. (Poster). Bays and Bayous Symposium, Biloxi, MS, November 30-December 2, 2016.

Cyndhia Ramatchandirane, Mead A. Allison, Dallon Weathers. *Data collection and baseline assessments for the Calcasieu Salinity Control Measures project*. (Presentation). State of the Coast, New Orleans, LA, June 1-3, 2016.

Cyndhia Ramatchandirane, Mead A. Allison, Brendan T. Yuill, Melissa M. Baustian, Ehab A. Meselhe, Nan D. Walker, Alaric S. Haag. *The impact of the Davis Pond freshwater diversion on water and sediment exchange in Barataria Basin* (Presentation). State of the Coast, New Orleans, LA, June 1-3, 2016.

Cyndhia Ramatchandirane, Brendan Yuill, Mead Allison, Melissa Baustian, Ehab Meselhe, and Nan Walker. *Observational network studies of receiving basin dynamics along lower Mississippi River in coastal Louisiana* (Poster). Coastal Estuarine and Research Federation, Portland, OR, November 8-12, 2015.

Cyndhia Ramatchandirane, Brendan Yuill, Mead Allison, Melissa Baustian, and Ehab Meselhe. *Observations of basin-wide dynamics along the lower Mississippi River via in-situ and remotely sensed data* (Presentation). American Shore and Beach Preservation Association, Broadening Coastal Perspectives, New Orleans, LA, October 14-16, 2015.

Alexander Kolker, Alex Ameen, Georgia Boxer, Chunyan Li, Chet Pilley, Cyndhia Ramatchandirane, and Nan Walker. *Dynamics of a large shelf discharging river: Implications for coastal sedimentology and restoration* (Presentation). Gulf Coast Association of Geological Societies and Gulf Coast Section of SEPM 63rd Annual Convention, New Orleans, LA, October 6-8, 2013.

Cyndhia Ramatchandirane, Alexander S. Kolker, Brittina A. Argow, Jeffrey P. Donnelly, Sergio Fagherazzi, Liviu Giosan, Anthony Priestas. *Chenier Plain reactivation in southwest Louisiana leads to recent marsh development via fluvial and coastal processes* (Poster). Association for the Sciences of Limnology and Oceanography Aquatic Sciences, New Orleans, LA, February 17-22, 2013.

Cyndhia Ramatchandirane, Alexander S. Kolker, Brittina A. Argow, Jeffrey P. Donnelly, Liviu Giosan. *Chenier Plain coastal wetland development in southwest Louisiana: possible link to downdrift sedimentation from increased Atchafalaya River flow and storm deposits* (Presentation). Coastal and Estuarine Research Federation, Daytona Beach, FL, November 6-11, 2011.

Cyndhia Ramatchandirane, Alexander S. Kolker, Brittina A. Argow, Jeffrey P. Donnelly, Liviu Giosan. *Does reactivation of Louisiana's Chenier Plain lead to the development of interior coastal wetlands? Assessing the relative roles of storm impacts and riverine deposits* (Poster). American Geophysical Union Fall Meeting, San Francisco, CA, December 13-17, 2010.

Asha Stenquist, Cyndhia Ramatchandirane, Brittina A. Argow. *Beach processes on Vieques, Puerto Rico, USA: Effects of Las Rompeolas pier* (Poster). Geological Society of America Northeastern Section Annual Meeting, Portland, ME, March 22-24, 2009.