Matthew V. Bilskie

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EDUCATION

Ph.D.   Civil Engineering, Louisiana State University   2016
M.S.   Civil Engineering, University of Central Florida   2012
B.S.   Civil Engineering, University of Central Florida   2009

PROFESSIONAL APPOINTMENTS

2016-Present   Research Scientist, Center for Coastal Resiliency, Louisiana State University

PUBLICATIONS
Refereed Journal Articles

1. DeLorme, D.E., S.H. Stephens, **M.V. Bilskie**, S.C. Hagen, 2020, "Coastal decision-makers' perspectives on updating storm surge guidance tools." *Journal of Contingencies and Crisis Management*. In Production.

2. Cyriac, R. J.C. Dietrich, C.A. Blain, C. Dawson, K. Dresback, A. Fathi, **M.V. Bilskie**, H.C. Graber, S.C. Hagen, R. Kolar, 2020, "Wind and tide effects on the Choctawhatchee Bay Plume and Implications for Surface Transport at Destin Inlet," *Regional Studies in Marine Sciences*, 35, doi:10.1016/j.rsma.2020.101131.

3. Siverd, C.G., S.C. Hagen, **M.V. Bilskie**, D.H. Braud, R.R. Twilley, 2020, "Quantifying storm surge and risk reduction costs: A case study for Lafitte, Louisiana," *Climatic Change*, Accepted 12/13 – In Press. doi:10.1007/s10584-019-02636-x.

4. **Bilskie, M.V.**, S.C. Hagen, S.C. Medeiros, 2020, "Unstructured finite element mesh decimation for real-time hurricane storm surge forecasting," *Coastal Engineering*. Vol. 156, doi:10.1016/j.coastaleng.2019.103622.

5. Siverd, C.G., S.C. Hagen, **M.V. Bilskie**, D.H. Braud, R.H. Peele, M.R. Foster-Martinez, R.R. Twilley, 2019, "Coastal Louisiana landscape and storm surge evolution: 1850-2100," *Climatic Change*, Vol. 157, pp. 445-468, doi:10.1007/s10584-019-02575-7.

6.   Santiago-Collazo, F.L., **M.V. Bilskie**, S.C. Hagen, 2019, "A comprehensive review of compound inundation models in low-gradient coastal watersheds" *Environmental Modelling & Software*, Vol. 119, pp. 166-181, doi:10.1016/j.envsoft.2019.06.002.

7.   Siverd, C.G., S.C. Hagen, **M.V. Bilskie**, D.H. Braud, S. Gao, R.H. Peele, R.R. Twilley, 2019. "Assessment of the temporal evolution of storm surge across coastal Louisiana" *Coastal Engineering*, Vol. 150, pp. 59-78, doi:10.1016/j.coastaleng.2019.04.010.

8.   Elko N., J.C. Dietrich, M. Cialone, H. Stockdon, **M.V. Bilskie**, B. Boyd, B. Charbonneau, D. Cox, K.M. Dresback, S. Elgar, V. Tomiczek, A. Lewis, J. Long, T.C. Massey, T. Mayo, K. McIntosh, N. Nadal, B. Raubenheimer, A. Wargula, 2019. "Advancing the understanding of storm processes and impacts," *Shore & Beach*, 87(1), 41-45.

9.   **Bilskie, M.V.**, S.C. Hagen, J.L. Irish, 2018. "Development of return period stillwater floodplains for the northern Gulf of Mexico under the coastal dynamics of sea level rise," *ASCE Journal of Waterway, Port, Coastal, and Ocean Engineering*, 145(2). doi:10.1061/(ASCE)WW.1943-5460.0000468.

10. Alizad, K., S.C. Hagen, S.C. Medeiros, **M.V. Bilskie**, J.T. Morris, L. Balthis, C.A. Buckel, 2018. "Dynamic responses and implications to coastal wetlands and the surrounding regions under sea level rise," *PLOS ONE*, Vol. 13 (10). doi:10.1371/journal.pone.0205176.

11. Xiao, X., D. Wang, S.C. Medeiros, **M.V. Bilskie**, S.C. Hagen, C.R. Hall, 2018. "Exploration of the effects of storm surge on the extent of saltwater intrusion into the surficial aquifer in coastal east-central Florida (USA)," *Science of the Total Environment*, Vol. 648, pp. 1002-1017, doi:10.1016/j.scitotenv.2018.08.199.

12. D.L. Passeri, **Bilskie, M.V.**, N.G. Plant, J.W. Long, S.C. Hagen, 2018. "Dynamic modeling of barrier island response to hurricane storm surge under future sea level rise," *Climatic Change*, Vol. 149 (3), pp. 413-425, doi:10.1007/s10584-018-2245-8.

13. DeLorme, D.E., Stephens, S.H., Hagen, S.C., **Bilskie, M.V.**, 2018. "Communicating with coastal decision-makers and environmental educators via sea level rise decision-support tools," *Journal of Science Communication* 17 (03), A03. doi:10.22323/2.17030203.

14. Siverd, C.G., S.C. Hagen, **M.V. Bilskie**, D.H. Braud, R.H. Peele, R.R. Twilley, 2018. "Hydrodynamic storm surge model simplification via application of land to water isopleths in coastal Louisiana," *Coastal Engineering*, Vol. 137, pp. 28-42, doi:10/1016/j.coastaleng.2018.03.006.

15. **Bilskie, M.V.**, S.C. Hagen, 2018. "Defining flood zone transitions in low-gradient coastal regions," *Geophysical Research Letters*, Vol. 45 (6), pp. 2761-2770, doi:10.1002/2018GL077524.

16.   **Bilskie, M.V.**, P. Bacopoulos, S.C. Hagen, 2017. "Astronomic tides and non-linear tidal dispersion for a tropical coastal estuary with engineered features (causeways): Indian River lagoon system," *Estuarine, Coastal, and Shelf Science*, 216, pp. 54-70, doi:10.1016/j.ecss.2017.11.009.

17.   Passeri, D.L., J.W. Long, N.G. Plant, **M.V. Bilskie**, S.C. Hagen, 2017. "The influence of bed friction variability due to land cover on storm-driven barrier island morphodynamics, *Coastal Engineering*, Vol. 132, pp. 82-94, doi:10.1016/j.coastaleng.2017.11.005

18.   Alizad, K., S.C. Hagen, J.T. Morris, S.C. Medeiros, **M.V. Bilskie**, J.F. Weishampel, 2016. "Coastal wetland response to sea-level rise in a fluvial estuarine system," *Earth's Future*, Vol. 4 (11), doi:10.1002/2016EF000385.

19.   Ghosh, D., D. Wang, **M.V. Bilskie**, S.C. Hagen, 2016. "Quantifying changes of effective springshed area and net recharge through recession analysis of spring flow," *Hydrological Processes*, Vol. 30 (26), pp. 5053-5062, doi:10.1002/hyp.10970.

20.   **Bilskie, M.V.**, S.C. Hagen, S.C. Medeiros, A. Cox, M. Salisbury, D. Coggin, 2016, "Data and numerical analysis of astronomic tides, wind-waves, and hurricane storm surge along the northern Gulf of Mexico," *Journal of Geophysical Research – Oceans*, Vol. 121 (5), pp. 3625-3658, doi:10.1002/2015JC011400.

21.   **Bilskie, M.V.**, S.C. Hagen, K. Alizad, S.C. Medeiros, D.L. Passeri, H. Needham, A. Cox, 2016. "Dynamic simulation and numerical analysis of hurricane storm surge under sea level rise with geomorphologic changes along the northern Gulf of Mexico," *Earth's Future*, Vol. 4 (5), pp 177-193, doi:10.1002/2015EF000347.

22.   Passeri, D.L., S.C. Hagen, N.G. Plant, **M.V. Bilskie**, S.C. Medeiros, K. Alizad, 2016, "Tidal hydrodynamics under sea level rise scenarios with coastal morphology in the northern Gulf of Mexico," *Earth's Future*, Vol. 4 (5), pp 159-176, doi:10.1002/2015EF000332.

23.   Alizad, K., S.C. Hagen, J.T. Morris, P. Bacopoulos, **M.V. Bilskie**, J.F. Weishampel, S.C. Medeiros, S.C., 2016. "A coupled, two-dimensional hydrodynamic-marsh model with biological feedback," *Ecological Modeling*, Vol. 327, pp. 29-43, doi:10.1016/j.ecolmodel.2016.01.013.

24.   **Bilskie, M. V**., D. Coggin, S. C. Hagen, and S.C. Medeiros, 2015. "Terrain-driven unstructured mesh development through semi-automatic vertical feature extraction," *Advances in Water Resources*, Vol. 86, Part A, pp. 102-118, doi:0.1016/j.advwatres.2015.09.020.

25.   Passeri, D.L., S.C. Hagen, S.C. Medeiros, **M.V. Bilskie**, 2015. "Impacts of historic morphology and sea level rise on tidal hydrodynamics in a microtidal estuary (Grand Bay, Mississippi)," *Continental Shelf Science*, Vol. 111, Part B, pp. 150-158, doi:10.1016/j.csr.2015.08.001.

26. Passeri, D.L., S.C. Hagen, S.C. Medeiros, **M.V. Bilskie**, K. Alizad, D. Wang, 2015. "The dynamic effects of sea level rise on coastal landscapes: a review," *Earth's Future*, Vol. 3 (6), pp. 159-181, doi:10.1002/2015EF000298.

27. Taylor, N.R., J.L. Irish, I.E. Udoh, **M.V. Bilskie**, 2015. "Development and uncertainty quantification of hurricane storm surge response functions for hazard assessment in coastal bays," *Natural Hazards*, Vol. 77 (2), pp. 1103-1123, doi:10.1007/s11069-015-1646-5.

28. Passeri, D.L., S.C. Hagen, **M.V. Bilskie**, S.C. Medeiros, 2014. "On the significance of incorporating shoreline changes for evaluating coastal hydrodynamics under sea level rise scenarios," *Natural Hazards*, Vol. 75 (2), pp. 1599-1617, doi:10.1007/s11069-014-1386-y.

29. **Bilskie, M.V.**, S.C. Hagen, S.C. Medeiros, D.L. Passeri, 2014 "Dynamics of sea level rise and coastal flooding on a changing landscape," *Geophysical Research Letters*, Vol. 41, doi:10.1002/2013GL058759.

30. Reece, J.S., D. Passeri, L. Ehrhart, S.C. Hagen, A. Hays, C. Long, R.F. Noss, **M.V. Bilskie**, C. Sanchez, M.V. Schwoerer, B. Von Holle, J. Weishampel, S. Wolf, 2013. "Climate change, sea level rise, and land use influence on the distribution of loggerhead (Caretta caretta) nests at Melbourne Beach, Florida," *Marine Ecology Press Series*, Vol. 493, pp. 259-274, doi:10.3354/meps10531.

31. **Bilskie, M.V.**, S.C. Hagen, "Topographic accuracy assessment of bare earth lidar-derived unstructured meshes," *Advances in Water Resources*, Vol. 52, pp. 165-177, doi:10.1016/j.advwatres.2012.09.003.

Book Chapters

1. Hagen, S.C., D.L. Passeri, **M.V. Bilskie**, D.E. DeLorme, D. Yoskowitz, 2017. "Systems approaches for coastal hazard assessment and resilience," *Oxford Research Encyclopedia of Natural Hazard Science*, doi:10.1093/acrefore/9780199389407.013.28.

Manuscripts in Review and Preparation

1. DeLorme, D.E., Stephens, S.H., Hagen, S.C., **Bilskie, M.V.**, "Coastal decision makers' perspective on storm surge guidance tools," *Journal of Contingencies and Crisis Management*, Revised and Resubmitted.

2. Plumlee, M., Asher, T.G., Chang, W., **Bilskie, M.V.**, "High-fidelity Hurricane Surge Forecasting Using Emulation and Sequential Experiments," *Annals of Applied Statistics*. In Revision.

3. **Bilskie, M.V.** et al., "Real-time water level forecasting during Hurricane Michael", *Weather and Forecasting*, In preparation.

4. **Bilskie, M.V.**, S.C. Hagen, D. Yoskowitz, D. DelAngel, "Quantifying potential economic losses of coastal communities under climate change," *Nature Communications*, In preparation.

Refereed Conference Papers

1. **Bilskie, M.V.**, 2013. "Hydrodynamic modeling of tides and hurricane storm surge for pre- and post-dredging conditions in the lower St. Johns River, Florida," 2013 ASCE COPRI PORTS, Seattle, WA, 25-29 August, pp. 1955-1965, doi:10.1061/9780784413067.200.

2. Passeri, D.L., **M.V. Bilskie**, S.C. Hagen, 2012. "Tidal asymmetry analysis of the Grand Bay, MS estuarine system and its effect on sediment transport," Proceedings of the 2012 International Conference on Hydroscience and Engineering, Orlando, FL, 4-7 November.

3. Bacopoulos, P., **M.V. Bilskie**, S.C. Hagen, 2011. "Florida's intracoastal waterway in a storm surge setting: Longwave physics and mesh resolution," 12th International Conference on Estuarine and Coastal Modeling, 7-9 November, pp. 188-200, doi:10.1061/9780784412411.00011.

4. **Bilskie, M.V.**, R. Akavian, S.C. Hagen, 2011. "Bare earth lidar to gridded topography for the Pascagoula River, MS: An accuracy assessment," 12th International Conference on Estuarine and Coastal Modeling, 7-9 November, pp. 295-314, doi:10.1061/9780784412411.00018.

5. **Bilskie, M.V.**, S.C. Hagen, M. Salisbury, D. Coggin, 2011. "Low- versus high-resolution finite element modeling of storm surge in the Yellow River, FL," Solutions to Coastal Disasters, 25-29 June, pp. 65-76, doi:10.1061/41185(417)7.

AWARDS & HONORS

2017   Distinguished Dissertation Award – Honorable Mention "Science, Technology, Engineering and Mathematics," Louisiana State University

2017   Distinguished Dissertation Award, College of Engineering, Louisiana State University

2015   Graduate Student Conference Competition (2nd Place), Department of Civil & Environmental Engineering, Louisiana State University

2013   ASCE PORTS Best Student Paper (2nd Place)

2013   Graduate Research Forum Award – Engineering, Computer Science, and Modeling and Simulation, University of Central Florida

GRANTS & FELLOWSHIPS

Funded

2019-2020   Hagen, S.C. & **M.V. Bilskie**, U.S. Geological Survey, "Hydrodynamic Modeling to Support Barrier Island Evolution Assessments," $75,000. Role: Co-PI.

2018-2020   Hagen, S.C., **M.V. Bilskie,** S.C. Medeiros, Department of Homeland Security, Coastal Resilience Center of Excellence at the University of North Carolina Chapel Hill, "Development of an optimized tide and hurricane storm surge model for the west coast of FL for use with the ADCIRC Surge Guidance Center," $200,000 (LSU: $150,000). Role: Co-PI.

2018-Present Hagen, S.C., **Bilskie, M.V.**, Twilley R., Louisiana Coastal Protection and Restoration Authority, "Implementation and Maintenance of ASGS/CERA (ADCIRC Surge Guidance System / Coastal Emergency Risks Assessment)," Yearly Contract, $129,910. Role: Co-PI.

2017-2020   Hagen, S.C., **Bilskie, M.V.**, Roberts, H., Resio D., The Water Institute of the Gulf, Restore Center of Excellence for Louisiana, "Coupling hydrologic, tide and surge processes to enhance flood risk assessments for the Louisiana Coastal Master Plan," $499,882. Role: Co-PI.

Submitted

2021-2025   Heo, Y., Padgett, J., Shafieezadeh, A., Bilskie, M.V., Pilkington, J. Department of Defense Strategic Environmental and Research Development Program, "Towards Multi-Hazard Resilience of Buildings and Critical Supporting Infrastructure Systems for Service Life Extension in Evolving Coastal Settings," $3,183,566 (Bilskie: $523,162). Role: Co-PI.

*Information about unsuccessful proposals can be provided upon request.

Allocations

2019-Present **Bilskie, M.V.**, S.C. Hagen, S.C. Medeiros, F. Santiago-Collazo, NSF XSEDE Research Allocation, "Tidal and hurricane storm surge modeling in the northern Gulf of Mexico", 26,000 node-hours on TACC Stampede2 and 45 TB of storage on TACC Ranch.

2019-Present Hagen, S.C., **M.V. Bilskie**, Louisiana Optical Network Initiative (LONI), "Louisiana State University Center for Coastal Resiliency," 2,500,000 cpu-hours on LONI Queenbee2.

2019-Present   Hagen, S.C., **M.V. Bilskie**, Louisiana State University High Performance Computing, "Hurricane Storm Surge Modeling," 500,000 cpu-hours on SuperMike2 and 1,500,000 on SuperMIC.

2018-Present   Hagen, S.C., **M.V. Bilskie**, Louisiana Optical Network Initiative (LONI), "Louisiana State University Center for Coastal Resiliency," 2,500,000 cpu-hours on LONI Queenbee2.

2018-Present   Hagen, S.C., **M.V. Bilskie**, Louisiana State University High Performance Computing, "Hurricane Storm Surge Modeling," 750,000 cpu-hours on SuperMike2 and 1,000,000 on SuperMIC.

2018-Present   **Bilskie, M.V.**, S.C. Hagen, K. Alizad, S.C. Medeiros, NSF XSEDE Research Allocation, "Tidal and hurricane storm surge modeling in the northern Gulf of Mexico," 43,000 node-hours on TACC Stampede2 and 22.5 TB of storage on TACC Ranch, $12,341.80 value.

2017-2018   Hagen, S.C., **M.V. Bilskie**, Louisiana Optical Network Initiative (LONI), "Louisiana State University Center for Coastal Resiliency," 2,000,000 cpu-hours on LONI Queenbee2.

2017-2018   Hagen, S.C., **M.V. Bilskie**, Louisiana State University High Performance Computing, "Hurricane Storm Surge Modeling," 750,000 cpu-hours on SuperMike2 and 250,000 on SuperMIC.

2016-2017   Hagen, S.C., **M.V. Bilskie**, Louisiana Optical Network Initiative (LONI), "Hurricane Storm Surge Modeling," 2,500,000 cpu-hours on LONI Queenbee2.

2016-2017   Hagen, S.C., **M.V. Bilskie**, Louisiana State University High Performance Computing, "Hurricane Storm Surge Modeling," 1,000,000 cpu-hours on SuperMike2.

2016-2017   Hagen, S.C., **M.V. Bilskie**, S.C. Medeiros, NSF XSEDE Research Allocation, "Tidal and hurricane storm surge modeling in the northern Gulf of Mexico," 3 million CPU-hours on TACC Stampede, $107k value.

2015-2016   Hagen, S.C., **M.V. Bilskie**, Louisiana Optical Network Initiative (LONI), "Hurricane Storm Surge Modeling," 1,000,000 cpu-hours on LONI Queenbee2.

2015-2016   Hagen, S.C., **M.V. Bilskie**, Louisiana State University High Performance Computing, "Hurricane Storm Surge Modeling," 1,000,000 cpu-hours on SuperMike2.

2015-2016   Hagen, S.C., **M.V. Bilskie**, D.L. Passeri, S.C. Medeiros, NSF XSEDE Research Allocation, "Tidal and hurricane storm surge modeling in the northern Gulf of Mexico," 1.6 million CPU-hours on TACC Stampede & 12 TB on TACC Ranch, $56k value.

WORKSHOPS

2019   Future Directions for Enabling Coastal Storm Flooding Prediction for High-Resolution Forecasts and Climate Scenarios, Columbia University, Funded, New York, NY, 25, 26.

2018   Envisioning risk of hurricane storm surge and sea level rise, National Center for Atmospheric Research (NCAR), BRIGHTE Workshop Series, NCAR Funded, Boulder, CO, July 31 – August 3.

INVITED TALKS

2020   Development and deployment of state-of-the-art computational inundation models to enhance coastal resilience. School of Environmental, Civil, Agricultural, and Mechanical Engineering, University of Georgia, 23 January.

2019   The development and application of large-scale computational hurricane storm surge models – to support decision support. Department of Civil and Environmental Engineering, University of Houston, 24 September.

2019   Unstructured finite element mesh decimation for real-time hurricane storm surge forecasting, 15th U.S. Congress on Computational Mechanics, Austin Texas, 31 July.

2019   The development and application of large-scale computational hurricane storm surge models. Department of Civil and Environmental Engineering, University of Michigan, 21 February.

2019   The development and application of large-scale computational hurricane storm surge models. Department of Civil and Environmental Engineering, Rice University, 28 January.

2018   Coastal inundation modeling of hurricane storm surge in the northern Gulf of Mexico. 2018 Louisiana Council of Information and Services of Directors (CISD) Conference and Expo, Baton Rouge, LA, 9 October. One of twelve invited speakers. 60 minute talk.

2015   Assessment of coastal flood risk in a changing climate. University of Cambridge, Cambridge, UK, 9 July.

2014   Modeling hurricane waves and storm surge under climate change in the northern Gulf of Mexico. Louisiana State University, Baton Rouge, LA, 10 October.

2014   High performance computing of oceanic and nearshore hydrodynamic processes. HPC User Group of Orlando, Orlando, FL, 28 October.

2013   Tide, surge, and wave modeling in the northern Gulf of Mexico: development and application. Central Florida EWRI Luncheon, Orlando, FL, 17 October.

CONFERENCE ACTIVITY

Session Organization

2020   The Louisiana Watershed Initiative and Coastal Flood Transition Zones: Modeling. Louisiana State of the Coast 2020, New Orleans, LA, 26-28 May. Organization in Progress.

2019   Co-Organizer, Exploring interdisciplinary and collaborative sea-level rise research for coastal adaptation. 25th Biennial Coastal & Estuarine Research Federation (CERF) Conference, Mobile, AL, 3-7 November.

Presentations

2019   Climate Change Impacts Along the northern U.S. Gulf Coast. AGU Fall Meeting, San Francisco, CA, 10 December.

2018   Development of a Computationally Efficient Unstructured Mesh for use in Real-Time Hurricane Storm Surge Modeling. 15th Estuarine and Coastal Modeling Conference, Seattle, WA, 25 June.

2018   *What Could Possibly Happen?:* Coastal Decision Makers Perspectives on Storm Surge Forecasting Tools. 2018 Louisiana State of the Coast, New Orleans, LA. 31 June. Co-Presented with D.E. DeLorme.

2018   Development of return period stillwater floodplains under the coastal dynamics of sea level rise across the northern Gulf of Mexico. 2018 ADCIRC Users Group Meeting, College Park, MD. 12 April.

2017   Development and application of percent annual chance coastal inundation maps to support decision-making in the northern Gulf of Mexico. AGU Fall Meeting, New Orleans, LA. 11 December.

2017   Development of return period stillwater floodplains for the coast of Alabama under sea level rise scenarios. Alabama Association of Floodplain Managers (AAFM) Annual Fall Meeting, Orange Beach, AL, 25 September.

2017   Development of an optimized tide and hurricane storm surge model for the northern Gulf of Mexico for use with the ADCIRC surge guidance system. ADCIRC User's Group Meeting, Norwood, MA, 4 May.

2017   High performance computing to support Louisiana coastal resiliency. Scientific Computing Across Louisiana (SCALA) Conference, New Orleans, LA, 17 March.

2016   Flood inundation modeling in a changing climate. 14th International Estuarine and Coastal Modeling Conference, Kingston, RI, 13 June.

2016   Hurricane storm surge forecasting along the northern Gulf of Mexico. Louisiana State of the Coast, New Orleans, LA, 3 June.

2015   A dynamic flood inundation model framework to assess coastal flood risk in a changing climate. 2015 AGU Fall Meeting, San Francisco, CA, 18 December.

2015   Development of future tropical cyclone 100-year floodplains in a changing climate. 36th International Association for Hydro-Environment Engineering and Research (IAHR) World Congress, Delft-The Hague, The Netherlands, 2 June.

2015   Tide, wind-wave, and hurricane storm surge modeling in the northern Gulf of Mexico under climate change. 2015 ASCE Louisiana Section Spring Conference, Baton Rouge, LA, 16 April.

2015   Tide, wind-wave and hurricane storm surge modeling in the northern Gulf of Mexico | climate change. ADCIRC User's Group Meeting, Silver Spring, MD, 31 March.

2014   Sea level rise and tidal hydrodynamics in the Indian River Lagoon, Florida. 34th International Conference on Coastal Engineering (ICCE), Seoul, Korea, 19 June.

2013   Sensitivity of hurricane storm surge to land cover and topography under various sea level rise scenarios along the Mississippi coast. AGU Fall Meeting, San Francisco, CA, 10 December.

2013   Hydrodynamic modeling of tides and hurricane storm surge for pre- and post-dredging conditions in the lower St. Johns River, Florida. ASCE COPRI PORTS, Seattle, WA, 25 August.

2013   Development of a high-resolution tide, wind-, and wave-driven ocean circulation model for the northern Gulf of Mexico. 12th International Congress on Computational Mechanics (ICCM), Raleigh, NC, 22 July.

2013   Development of a high-resolution wind-wave, tide, and hurricane storm surge model for Mississippi and Alabama. ADCIRC User's Group Meeting, Vicksburg, MS, 29 April.

2012   Development of a high-resolution, wind-wave, tide, and hurricane storm surge model for southern Mississippi. International Conference on Hydroscience and Engineering (ICHE), Orlando, FL, 3 November.

2012   Influence of topographic elevation error on modeled storm surge. ADCIRC User's Group Meeting, Silver Spring, MD, 23 April.

2011   Bare earth lidar to gridded topography for the Pascagoula River, MS: an accuracy assessment. 12th International Conference on Estuarine and Coastal Modeling, St. Augustine, FL, 7 November.

2011   Low- versus high-resolution finite element modeling of storm surge in the Yellow River, FL. Solutions to Coastal Disasters, Anchorage, AK, 26 June.

OUTREACH TALKS

2014   Tides, wind-waves, and hurricane storm surge in the northern Gulf of Mexico. Elks Lodge #286, Ocala, FL, 15 August.

TEACHING EXPERIENCE
Louisiana State University, 2015 - 2019
Graduate Courses (Co-Instructor)
Tides, Surges, and Relative Sea-Levels (Fall 2016, Fall 2017, Fall 2018, Fall 2019)
Applied Coastal Modeling I (Fall 2015)

Graduate Courses, Guest Lecture
Tidal Model Theory (Fall 2016) - Tidal analysis; Introduction to storm surge modeling
Applied Coastal Modeling I (Fall 2015) - Tidal analysis; Introduction to storm surge modeling
University of Central Florida, 2013 - 2014
Graduate Courses, Guest Lecture
Numerical Methods in Civil & Environmental Engineering (Spring 2014)
        Newton forward interpolation; Chebyshev roots & Hermite interpolating polynomials
Hydraulic Engineering (Fall 2013) - Introduction to lidar

STUDENT SUPERVISION
Louisiana State University
Current   Shu Gao (PhD Student), Felix Santiago-Collazo (PhD Student)
2018   Christopher Siverd (PhD Student – Graduated 2019)
2017   Sabrina Welch, Jackson State University, Summer Research Experience (SUMREX)
2016   Felix Santiago, University of Puerto Rico, Recinto de Mayagüez, Summer Research Experience (SUMREX)

Selected Undergraduate Research Supervision
2017   Diego Delgado, University of Puerto Rico, Recinto de Mayagüez. Summer Research Experience (SUMREX) funded by DHS S&T

SERVICE
To Profession

Proposal Reviews

2019-Present   Reviewer, National Science Foundation Graduate Research Fellowship Program

Organizations

2017-Present   Conference Organizing Committee, Estuarine and Coastal Modeling

Journal Referee

Journal of Hydrology	*Journal of Wtwy, Port, Coast, and Oc. Eng.*
Computers and Geosciences	*Natural Hazards*
Earths' Future	*Natural Hazards Review*
Estuarine, Coastal and Shelf Science	*Integrated Env. Assessment and Mgmt.*
Geophysical Research Letters	*Nature - Scientific Reports*
Hydrology	*Nature Communications*
Hydrology Research	*Ocean Engineering*
Journal of Geophysical Research	*Risk Analysis*
Journal of Marine Science and Eng.	*Water Resources Research*

To University of Central Florida

UCF EXCEL Program (Undergraduate STEM Retention), 2013 - 2014
UCF COMPASS Program (Undergraduate STEM Recruitment), 2013 – 2014
UCF Campus Connect (Under-represented STEM Recruitment), 2013 – 2014

RELATED PROFESSIONAL TRAINING

2010   State of Florida, Licensed Engineer in Training, No. 1100014131

2014   XSEDE Training: Parallel Computing on Stampede
2011   ADCIRC Boot Camp, Seahorse Coastal Consulting and Aquaveo, LLC
2010   Coastal Circulation and Wave Modeling with SMS, Aquaveo, LLC

NON-ACADEMIC WORK

2018-Present   Consulting Engineer. Self-Employed

PROFESSIONAL MEMBERSHIPS & SOCIETY AFFILIATIONS

2010-Present   American Geophysical Union