

Wei Wu

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Education

Wuhan University	Environmental Science	B.Sc. 1996
South China Sea Inst. of Oceanography	Ecology	M.S. 1999
Syracuse University	Computer Science	M.S. 2004
SUNY–College of Envi. Sci. & Forestry	Systems Ecology	Ph.D. 2005

Appointments

2013-present	Associate Professor, Division of Coastal Sciences, School of Ocean Science and Technology, The University of Southern Mississippi (USM)
2013-present	Associate Professor, Department of Coastal Sciences, USM
2007-2013	Assistant Professor, Department of Coastal Sciences, USM
2006-2007	Postdoctoral Research Scientist, Nicholas School of the Environment, Duke University
2005-2006	Postdoctoral Research Associate, Department of Civil & Environmental engineering, Syracuse University
2001-2005	Research Assistant, Department of Environmental Science, SUNY – College of Environmental Science and Forestry (SUNY-ESF)
2000-2001	Teaching Assistant, Department of Environmental and Forest Biology, SUNY – ESF
1997-1999	Research Assistant, South China Sea Institute of Oceanography, Chinese Academy of Sciences, China

Peer-review Publications

- 1) **Wu, W.**, H. Huang, P. Biber, M. Bethel, in press. Litter decomposition of *Spartina alterniflora* and *Juncus roemerianus*: implications of climate change in salt marshes. *Journal of Coastal Research*.
- 2) Li, Y.F., Y. Li, **W. Wu**, 2015. Threshold and resilience management of coupled urbanization and water environmental system in the rapidly changing coastal region. *Environmental Pollution*, doi: 10.1016/j.envpol.2015.08.042.
- 3) **Wu, W.**, K. Yeager, R. Fulford, M. Peterson, 2015. Neutral models as a way to evaluate the Sea Level Affecting Marshes Model (SLAMM). *Ecological Modelling* 303, 55-69.
- 4) Gong, C., and **W. Wu**, 2014. Comparison of regression tree models for sub-pixel imperviousness estimation in a Gulf Coast city of Mississippi, USA. *International Journal of Remote Sensing* 35(10), 3722-3740.
- 5) Biber, P. D., **W. Wu**, M. S. Peterson, Z. Liu, and L. Pham, 2014. Oil contamination in Mississippi saltmarsh habitats and the impacts to *Spartina alterniflora* photosynthesis. In B. Alford, M.S. Peterson and C. Green (eds). *Impacts of Oil Spill Disasters on Marine Habitats and Fisheries in North America*. Boca Raton, FL: CRC Press.
- 6) Wang, Z., Z. Liu, K. Xu, L.M. Mayer, Z. Zhang, A.S. Kolker, and **W. Wu**, 2014. Concentration and sources of polycyclic aromatic hydrocarbons in surface coastal sediments of the northern Gulf of Mexico. *Journal of Geochemical Transactions* 15:2.

- 7) Hallock Jr., J.L., **W. Wu**, C.A.S. Hall, and M. Jefferson, 2014. Forecast the limits to the availability and diversity of global convention oil supply: validation. *Energy* 64, 130-153.
- 8) Fulford, R.S., M.S. Peterson, **W. Wu**, and P.O. Grammer, 2014. An ecological model of the habitat mosaic in estuarine nursery areas: Part II – Projecting effects of sea level rise on fish production. *Ecological Modelling* 273, 96-108.
- 9) **Wu, W.**, J. Clark, and J. Vose, 2014. Response of streamflow to climate change in the southern Appalachian Mountains using Bayesian inference. *Hydrological Processes* 28(4), 1616-1625, DOI: 10.1002/hyp.9677. Article first published online on Feb. 4 2013.
- 10) Lash-Marshall, W., C.A.S. Hall, and **W. Wu**, 2013. Using gradient analysis to simulate the spatial structure and function of the Luquillo Experimental Forest. *Ecological Bulletins* 54, 223-232.
- 11) **Wu, W.**, and L. Zhang, 2013. Comparison of spatial and non-spatial logistic regression models for modeling the occurrence of cloud cover in north-eastern Puerto Rico. *Applied Geography* 37, 52-62.
- 12) **Wu, W.**, P. D. Biber, M. S. Peterson, and C. Gong, 2012. Modeling photosynthesis of *Spartina alterniflora* (smooth cordgrass) impacted by the Deepwater Horizon oil spill using Bayesian inference. *Environmental Research Letters* 7, 045302.
- 13) Liu, Z., J. Liu, Q. Zhu, and **W. Wu**, 2012. The weathering of oil after the Deepwater Horizon oil spill: insights from the chemical composition of the oil from the sea surface, salt marshes and sediments. *Environmental Research Letters*, 035302, 10.1088/1748-9326/7/3/035302.
- 14) Lowe, M.R., **W. Wu**, M.S. Peterson, N.J. Brown-Peterson, W.T. Slack, and P.J. Schofield, 2012. Survival, growth and reproduction of non-native Nile tilapia (*Oreochromis niloticus*) II. Mapping its fundamental niche in the northern Gulf of Mexico. *PLoS One* 7(7), e41580. Doi: 10.1371/journal.pone.0041580.
- 15) **Wu, W.**, J. Clark, and J. Vose, 2012. Application of a full hierarchical Bayesian model in assessing streamflow response to a climate change scenario at the Coweeta Basin, NC, USA. *Journal of Resources and Ecology* 3(2), 118-128.
- 16) McKinney, J.A., E.R. Hoffmayer, **W. Wu**, R. Fulford, and J. Hendon, 2012. Feeding habitat of the whale shark *Rhincodon typus* in the northern Gulf of Mexico determined using Species distribution modelling. *Marine Ecology Progress Series* 458, 199-211. Doi: 10.3354/meps09777.
- 17) Harris, N.L., and **W. Wu**, 2012. Chapter 7: Hydrology. In Harris N.L., Lugo, A.E., Brown, S., and Scalley T.H. (eds) *Luquillo Experimental Forest: Research History and Opportunities*. EFR-1. Washington, D.C: U.S. Department of Agriculture, pp. 50-55.
- 18) **Wu, W.**, J. S. Clark, and J. M. Vose, 2010. Assimilating multi-source uncertainties of a parsimonious conceptual hydrological model using hierarchical Bayesian modeling. *Journal of Hydrology* 394, 436-446.
- 19) **Wu, W.**, and C.T. Driscoll, 2010. Impact of climate change on three-dimensional dynamic critical load functions. *Environmental Science & Technology* 44, 720-726.
- 20) **Wu, W.**, and C. T. Driscoll, 2009. Application of the PnET-BGC – an integrated biogeochemical model – to assess the surface water ANC recovery in the Adirondack region of New York under three multi-pollutant proposals. *Journal of Hydrology* 378, 299-312.
- 21) K.A. Brown, S. Spector, and **W. Wu**, 2008. Multi-scale analysis to species introductions: combining landscape and demographic models to improve management decisions about non-native species. *Journal of Applied Ecology* 45, 1639-1648. Doi: 10.1111/j.1365-2664.2008.01550.x.

- 22) **Wu, W.**, C.A.S. Hall, and F. Scatena, 2007. Modeling the impact of recent land cover changes on the stream flows in North-Eastern Puerto Rico. *Hydrological Processes* **21**, 2944-2956. DOI: 10.1002/hyp.6515.
- 23) **Wu, W.**, C.A.S. Hall, F.N. Scatena, and L. Quackenbush, 2006. Spatial modeling of evapotranspiration in the Luquillo Experimental Forest of Puerto Rico using remote sensed data. *Journal of Hydrology* **328**, 733-752.
- 24) **Wu, W.**, C.A.S. Hall, and L. Zhang, 2006. Predicting the spatial and temporal probability of orographic cloud cover in the Luquillo Experimental Forest in Puerto Rico using generalized linear (mixed) models. *Ecological Modelling* **192** (3-4), 473-498.
- 25) Hallock Jr., J. L., P.J. Tharakan, C.A.S. Hall, M. Jefferson, and **W. Wu**, 2004. Forecasting the availability and diversity of global oil supply. *Energy* **29(11)**, 1673-1696.
- 26) Wang, H., C.A.S. Hall, F.N. Scatena, N. Fetcher, and **W. Wu**, 2003. Modeling the spatial and temporal variability in climate and primary productivity across the Luquillo Mountains, Puerto Rico. *Forest Ecology and Management* **179**, 69-94.
- 27) B. Tao, C. Hu, and **W. Wu**, 2001. Studies on pathogenetic biology of vibriosis occurring in *Penaeus monodon*. *Journal of Tropical Oceanography* **20(2)**, 80-87 (in Chinese, English abstract).

Teaching

Systems and Landscape Ecology (2 credits), Xiamen University, China, summer 2014

This course covers ecological concepts, theories and methods key to understanding how ecosystem processes respond to landscape heterogeneity and disturbances. Lecture topics include: concepts in ecosystem ecology and landscape ecology, biodiversity, environmental pollutions and ecosystems, climate change and society, landscape patterns, landscape disturbance dynamics, ecosystem processes in the landscape, and landscape models.

Geostatistics (3 credits), USM, 4 semesters, Fall 2009, 2011, 2013, 2016

This course is an introduction to the description, analysis, and modeling of geospatial data using classic geostatistics and spatial regression. It enables the students to 1) explore spatial patterns; 2) quantify spatial continuity; 3) perform spatial estimation and predictions; and 4) understand stochastic simulation. The practical applications of underlying theory is emphasized though the use of R.

Ecological Data and Models (3 credits), USM, 2 semesters, Spring 2012, Fall 2014

This course introduces how to integrate modeling and statistics, how to confront multiple hypotheses with data and assign degrees of belief to different hypotheses, and how to put multiple sources of data into one inferential framework.

Geographic Modeling (3 credits), USM, 4 semesters, Spring 2009, 2011, 2013, 2015

The focus of the course is to introduce the traditional programming language FORTRAN to work with spatial data in environmental science. Geostatistics for spatial interpolation/prediction and Python scripting language are also taught.

Introduction to GIS (3 credits), USM, 3 semesters, Spring 2008, Spring 2010, Fall 2011.

This course is an introduction to geographic information systems for beginning graduate students in environmental science and ecology, focusing on spatial data development and analysis in the science and management of natural resources. Topics covered include: basic data structures, data sources, data collection, data quality, geodesy and map projections, spatial and tabular data analyses, digital elevation data and terrain analyses, cartographic modeling, and cartographic layout. Laboratory exercises provide practical experiences that complement the theory covered in lecture.

Coastal Water Quality (co-teach, 3 credits), USM, 3 semesters, Fall 2009, 2010, 2011.

This course teaches the correct usage of water quality equipment and instruments, data gathering practices, and data analysis. In addition, the theory underlying the measurements and how they relate to coastal and marine organisms are introduced.

General Ecology Lab (1 credit), SUNY-College of Environmental Science & Forestry, 1 semester, Fall 2000.

The lab teaches basic technology in field experiment and data analysis in general ecology.

Graduate Student and Post-doc Mentoring

Graduated four M.S. students, Fall 2010, Spring 2014, Fall 2014 (on committee), Fall 2011 (major professor);

Graduated two Ph.D. student (on committee, Spring 2013, Fall 2016)

Supervising three Ph.D. graduate student and one MS graduate student;

Serving steering committee on four other graduate students, one in Ph.D. programs and three in M.S. program.

Supervised one post-doc (2011-2013)

Honors

· **NSF ADVANCE Project Fellowship** on “Exploring Bayesian belief networks to evaluate restoration decisions – building foundation for future restoration-related proposal applications”, University of Southern Mississippi, \$5,000, 2015-16.

· **Aubrey Keith Lucas and Ella Ginn Lucas Endowment for Faculty Excellence Award** on “Assessing the water use by trees at the Mississippi coastal forests impacted by Hurricane Katrina”, University of Southern Mississippi, \$2,212, 2008-09.

· **Nominations:** 2012 Butch Oustalet Distinguished Professorship Award in Teaching, 2012 Junior Faculty Teaching Award;

· **Kailijin Honor** for excellent academic performance given by Chinese Academy of Sciences in 1997;

· **Yilida Honor** for excellent academic performance given by Chinese Academy of Sciences in 1998;

· **Second places** in Regional Olympic Mathematics, Chemistry, and English Competition in Guizhou Province of China in 1991;

Grants Received

2008-10 Single PI. “Will climate change cause wetland loss on the Mississippi Gulf Coast

- more than upland land use / land cover change within the next century?”. NOAA – Mississippi-Alabama Sea Grant Consortium (MASGC), Project Development Program, \$10,000.
- 2009 Single PI. “Assessing the carbon dynamics at the Mississippi coastal forests impacted by Hurricane Katrina”. University of Southern Mississippi - Summer Faculty Research Grant for the summer of 2009, \$9,900.
- 2009-10 Single PI. “Assessing the water use by trees at the Mississippi coastal forests impacted by Hurricane Katrina”. University of Southern Mississippi - Aubrey Keith Lucas and Ella Ginn Lucas Endowment for Faculty Excellence Award, \$2,212.
- 2009-12 PI (W. Wu, M. Kalcic, and K. Yeager). “The impact of accelerated sea level rise on tidal marshes and storm surge”. NOAA – Mississippi-Alabama Sea Grant Consortium, Coastal Storms Program, \$100,000.
- 2009-12 Co-PI (T. Frisbie (PI), D. Holland, K. Boyd, and W. Wu). “Evaluation of hurricane evacuation routes’ resiliency to storm damage”. NASA - Research Opportunities in Space and Earth Sciences Program, \$399,556.
- 2010-12 Co-PI (R. Fulford (PI), M. Peterson and H. Perry, K. Craig, R. Allee, and W. Wu). “Assessment of ecosystem services of selected coastal habitat types: Towards a model-based toolset for management planning”. NOAA – Office of Oceanic and Atmospheric Research, Northern Gulf Institute Initiative. \$300,894.
- 2010-11 PI (W. Wu, in collaboration with F. Scatena). “Rapid request for ground-verification of the Luquillo Critical Zone”. National Science Foundation. \$32,031.
- 2010 Co-PI (P. Biber (PI), W. Wu, and M. Peterson). “Saltmarsh habitat sampling to delineate potential oil impacts from BP Deepwater Horizon spill”. NOAA – Office of Oceanic and Atmospheric Research, Northern Gulf Institute Initiative. \$65,925.
- 2010-12 PI (W. Wu and P. Biber). “RAPID: quantifying the potential impacts of the Deepwater Horizon oil spill on selected carbon services of salt marshes along the northern gulf coast using hierarchical bayesian modeling”. National Science Foundation – DEB – Global Systems Science. \$108,874.
- 2010-13 Co-PI (R. Carmichael (PI), W. Burkhardt, K. Calci, W. Wu, D. Ruple, and W. Walton). “Legacy effects of land-use change and nitrogen source shifts on a benchmark system: Building capacity for collaborative research leadership at the Grand Bay Reserve”. National Estuarine Research Reserve System. \$354,750.
- 2012-14 Co-PI (M. Bethel (PI), W. Wu, and P. Biber). “Determining localized impacts of predicted sea level rise to engineered versus natural landscapes, and how risk perception may alter response strategies adopted by ecosystem-dependent communities versus resource-managers”. NOAA - Gulf of Mexico Regional Sea Grant Sea Level Rise Program. \$179,999.
- 2012-14 Co-PI (C.T. Driscoll (PI), J.L. Campbell, K. Hayhoe, and W. Wu). “Modeling of the hydrochemical responses of high elevation watersheds to climate change and atmospheric deposition”. Environmental Protection Agency – Science to Achieve Results (STAR) Program, \$800,000.
- 2014-15 Co-PI (D. Mishra (PI) and W. Wu). “A MODIS biophysical parameters centered framework for monitoring carbon sequestration potential of Gulf Coast salt marshes”. NASA - Earth Science Division Applied Sciences Program, \$441,413.
- 2015-16 Single PI. “Developing a decision support tool to evaluate ecosystem services and associated uncertainties using a Bayesian belief network “. National Academy of

- Sciences – Gulf Research Program, \$124,000.
- 2016-17 Co-PI (J. Kastler (PI) and W. Wu). “Meaningful watershed educational experience for resilience to accelerated sea level rise and flooding risk (Resilience MWEE)”. NOAA – B-WET Program, \$100,000.
- 2016-18 Co-PI (P. Biber (PI), W. Wu, G. Carter, and D. Mishra). “Understanding the trajectory of coastal salt marsh structure, function, and processes in the face of sea level rise: a synthesis from historical imagery, biophysical processes, and hierarchical modeling”. National Academy of Sciences – Gulf Research Program, \$506,619.
- 2009-10 Collaborator (K. Brown (PI) and W. Wu). “The effects of rapid environmental change on terrestrial biogeochemical processes in the Virgin Islands”. NSF EPSCoR - University of the Virgin Islands (No budget for Wu).

Presentations (leading author was the presenter unless specified otherwise)

- 1) **W. Wu**, 2016. What does sea-level rise mean to Mississippi Gulf Coast? Workshop for NAACP and NOAA, Gulfport, October 17, 2016. (Oral, invited, regional)
- 2) **W. Wu**, K. Yeager, M. Peterson, R. Fulford, T. Hardy, 2016. Evaluating the SLAMM using neutral models. The International Society for Ecological Modelling Global Conference, Towson University, Baltimore, MD, May 9, 2016. (Oral, contributed, international)
- 3) **W. Wu**, 2015. Summary of Ecosystem Scientific and Statistical Committee February 2015 meeting: a report to The Gulf of Mexico Fishery Management Council. The Sustainable Fisheries/Ecosystem Management Committee Meeting, Biloxi, March 30, 2015. (Oral, invited, regional)
- 4) M. Bethel, **W. Wu**, P. Biber, 2014. Determining localized risk perception and impacts of predicted sea-level rise (SLR) to enhance stakeholder mitigation planning through visualization tools. Bays and Bayous Symposium 2014, December 2, Mobile, AL. (Oral, contributed, regional)
- 5) R.H. Carmichael, E. Darrow, **W. Wu**, H. Huang*, K.R. Calci, W. Burkhardt II, W. Walton, A. Pasch, M.S. Woodrey. Planning the future with an eye to the past: land use and water quality on the Mississippi-Alabama Coast. Bays and Bayous Symposium 2014, December 2, Mobile, AL. (Oral, contributed, regional)
- 6) **W. Wu**, H. Huang (presenter), R. Carmichael, and E. Darrow, 2014. Land use/land cover change and its impact on water quality at the Grand Bay National Estuarine Research Reserve. Concluding workshop for the project “Legacy effects of land-use change and nitrogen source shifts on a benchmark system: Building capacity for collaborative research leadership at the Grand Bay Reserve”, August 1, Moss point, MS. (Oral, **invited**)
- 7) **W. Wu**, 2014. Beyond ordinary least squares regression: promoting statistical literacy among ecology students. College seminar, July 25, Nanjing Forestry University, Nanjing, China. (Oral, **invited**)
- 8) **W. Wu**, K. Yeager, M. Peterson, and R. Fulford, 2014. Neutral models as a way to evaluate the sea level affecting marshes model (SLAMM). College seminar, Xiamen University, July 4, Xiamen, China. (Oral, **invited**)
- 9) **W. Wu**, J. Clark, and J. Vose, 2014. Response of streamflow to climate change in the southern Appalachian Mountains using Bayesian inference. College seminar, July 3, Xiamen University, Xiamen, China. (Oral, **invited**)
- 10) **W. Wu**, 2014. Beyond ordinary least squares regression: promoting statistical literacy among

- ecology students. College seminar, July 3, Xiamen University, Xiamen, China. (Oral, **invited**)
- 11) **W. Wu**, K. Yeager, M. Peterson, and R. Fulford, 2014. Neutral models as a way to evaluate the sea level affecting marshes model (SLAMM). Annual symposium for US- International Association of Landscape Ecology, May 20, Anchorage, US. (Oral, contributed)
 - 12) **W. Wu**, 2014. Coping with multiscale data: case studies in evapotranspiration and photosynthesis. Department seminar, Texas Tech University, May 14, Lubbock, Texas. (Oral, **invited**)
 - 13) H. Huang, **W. Wu**, P. Biber, and M. Bethel, 2013. Decomposition of two dominant salt marsh species on the Mississippi Gulf Coast. University Research Awards Day, November 8, University of Southern Mississippi, Hattiesburg, MS. (Poster, contributed)
 - 14) R. Carmichael, E. Darrow, W. Burkhardt III, K. Calci, **W. Wu**, D. Ruple, and W. Walton, 2013. Legacy effects of land-use change and nitrogen source shifts on Grand Bay, Mississippi: a benchmark for building collaborative research at the Grand Bay NERR. Grand Bay NERR Research Symposium, October 25, Grand Bay NERR, Moss Point, MS. (Oral, **invited**)
 - 15) H. Huang, **W. Wu**, P. Biber, and M. Bethel, 2013. Decomposition of two dominant salt marsh species on the Mississippi Gulf Coast. Grand Bay NERR Research Symposium, October 25, Grand Bay NERR, Moss Point, MS. (Poster, contributed)
 - 16) **W. Wu**, 2013. Scaling individual-plant sap flow and leaf-scale photosynthesis to ecosystem level, July 30, Xiamen University, Xiamen, China. (Oral, **invited seminar.**)
 - 17) **W. Wu**, 2013. Coping with scale mismatches: applications of hierarchical Bayesian models in studying photosynthesis, July 24, Qinghai Institute of Salt Lakes, Chinese Academy of Sciences, Xining, China. (Oral, **invited seminar.**)
 - 18) **W. Wu**, 2013. Coping with scale mismatches in studying water and carbon cycles, June 22, Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences, Lanzhou, China. (Oral, **invited seminar.**)
 - 19) **W. Wu**, 2013. Coping with scale mismatches: case studies in evapotranspiration and photosynthesis, July 16, Institute of Geochemistry, Chinese Academy of Sciences, Guiyang, China. (Oral, **invited seminar.**)
 - 20) **W. Wu**, 2013. Scaling individual-plant sap flow and leaf-scale photosynthesis to ecosystem level, June 27, Institute of Soil Science, Chinese Academy of Sciences, Nanjing, China. (Oral, **invited seminar.**)
 - 21) **W. Wu**, 2013. Sensing individual-plant sap flow and leaf-scale photosynthesis – what do they mean at the ecosystem level, June 24, 2013, Nanjing Forestry University, Nanjing, China. (Oral, **invited seminar.**)
 - 22) **W. Wu**, 2013. Ecological Models 101. Nanjing Forestry University, Nanjing, China, June 21. (**Invited seminar.**)
 - 23) Z. Liu, Z. Wang, **W. Wu**, A. Kolker, 2013. Distribution and contamination sources of polycyclic aromatic hydrocarbons (PAHs) in coastal sediments in the northern Gulf of Mexico. 245th ACS National Meeting that will be held in New Orleans, Louisiana, April 7-11, 2013.
 - 24) **W. Wu**, 2013. Sensing individual-plant sap flow and leaf-scale photosynthesis – what do they mean at the ecosystem level, March 4, 2013, New Jersey Institute of Technology, Newark, NJ. (Oral, **invited seminar.**)
 - 25) **Wu, W.**, P. B. Biber, M. S. Peterson, C. Gong, 2012. Modeling photosynthesis of *Spartina*

- alterniflora* (smooth cordgrass) impacted by the Deepwater Horizon oil spill using Bayesian inference. American Geophysical Union fall meeting, 3-7 December, San Francisco, CA. (Poster, international, unsolicited.)
- 26) Bethel, M., **W. Wu**, P. Biber, C. Gong, and H. Hong, 2012. Determining localized risk perception and impacts of predicted sea-level rise (SLR) to engineered versus natural landscapes to enhance stakeholder SLR mitigation planning. Mississippi-Alabama Bays and Bayous Symposium, 14-15 November, Biloxi, MS. (Oral, regional, unsolicited.)
 - 27) Lowe, M., M.S. Peterson, **W. Wu**, N. Brown-Peterson, W.T. Slack, P. Schofield, 2012. Nile tilapia – free ranging “aquatic chickens”: modeling the spread of a non-native species in the Northern Gulf of Mexico under different climate change. 142nd Annual meeting of American Fisheries Society, 19-23 August, St. Paul, MN. (Oral, national, unsolicited.)
 - 28) Fulford, R.S., **W. Wu**, M.S. Peterson, P.O. Grammer. 2012. Life in the mosaic: predicting changes in estuarine nursery production for juvenile fishes in response to sea-level rise with a landscape-based habitat production model. Ecological Society of America, 97th annual meeting, 5-10 August, Portland, OR. (Oral, international, unsolicited.)
 - 29) **Wu, W.**, 2012. Monitoring photosynthesis of coastal wetlands in Mississippi impacted by Deepwater Horizon Oil Spill using Bayesian inference – the story after more than one year. International Association of Landscape Ecology Symposium, April 8-12, Newport, RI. (Oral, international, unsolicited.)
 - 30) **Wu, W.**, M. Kalcic, and J. Fleming, 2012. The impact of accelerated sea level rise on coastal wetlands and its implications on storm surge - The story of lower Pascagoula River Basin in Jackson County, MS. Workshop – Planning for the Future in Jackson County: Sea Level Rise and Changing Coastal Conditions. Grand Bay National Estuarine Research Reserve, March 6, Moss Point, MS. (Oral, local, **invited**.)
 - 31) **Wu, W.**, 2012. Modeling Water, Carbon and More under Environmental Change. City University of Hong Kong, February 28, Hong Kong, China. (Oral, **invited seminar**.)
 - 32) Frey, J., and **W. Wu**, 2011. Sub-pixel classification of historical and current marsh habitat for the eastern Mississippi Gulf Coast using remotely sensed images. Coastal and Estuarine Research Federation 2011 Conference, November 6-11, Daytona Beach, Florida. (Oral, international, unsolicited.)
 - 33) Gong, C., and **W. Wu**, 2011. A hybrid remote sensing model for mapping the impervious surface of urban area adjacent to Grand Bay Reserve. Annual University Research Awards Day, November 4, Hattiesburg, Mississippi. (**Award Winner**) (Poster, campus-wide, unsolicited.)
 - 34) Gong, C., and **W. Wu**, 2011. A hybrid remote sensing model for mapping the impervious surface of urban area adjacent to Grand Bay Reserve. Grand Bay NERR Research Symposium, October 14, Moss Point, Mississippi. (Poster, regional, unsolicited.)
 - 35) **Wu, W.**, 2011. Ecological forecast under changing environment - a focus on hydrological and biogeochemical cycles in forest ecosystems. July 14, Institute of Geochemistry, Chinese Academy of Sciences, Guiyang, China. (Oral, **invited seminar**.)
 - 36) **Wu, W.**, R. Fulford, M.S. Peterson, 2011. Assessment of sea-level-affecting-marshes-model (SLAMM) applying a neutral model of landscape change. Northern Gulf Institute Annual Meeting, May 17-19, Mobile, Alabama. (Poster, regional, unsolicited.)
 - 37) **Wu, W.**, 2011. Resilience of salt marshes to BP oil spill on Mississippi Gulf Coast. International Association of Landscape Ecology Symposium, April 3-7, Portland, Oregon. (Oral, international, unsolicited.)

- 38) **Wu, W.**, 2011. Modeling Ecological Processes under Environmental Disturbances. January 25, Montclair State University, Montclair, New Jersey. (Oral, **invited seminar.**)
- 39) McKinney, J.A., E. Hoffmayer, **W. Wu**, and R. Fulford. 2011. Species distribution modeling of whale sharks, *Rhincodon typus*, in the northern Gulf of Mexico. Southern Division of the American Fisheries Society Meeting January 14-16, Tampa, Florida. (Oral, regional, unsolicited.)
- 40) **Wu, W.**, 2010. Photosynthesis at saltmarshes impacted by Deepwater Horizon Oil Spill – hierarchical Bayesian modeling in resilience of saltmarsh habitat. Bays and Bayous Symposium, December 1-2, Mobile, AL. (Oral, regional, unsolicited.)
- 41) Frey, J., and **W. Wu**, 2010. Quantifying the loss rate of salt marsh patches through multiple remote sensed methodologies for the Pascagoula River Basin. Bays and Bayous Symposium, December 1-2, Mobile, AL. (Poster, regional, unsolicited, abstract published.)
- 42) **Wu, W.**, 2010. Photosynthesis at saltmarshes impacted by Deepwater Horizon Oil Spill – what it means in resilience of saltmarsh habitat at multiple spatial scales. November 30, University of West Florida, Pensacola, FL. (Oral, **invited seminar.**)
- 43) **Wu, W.**, 2010. Photosynthesis at saltmarshes impacted by Deepwater Horizon Oil Spill – what it means in resilience of saltmarsh habitat. Gulf Oil Spill Conference, November 1-2, New Orleans, LA. (Poster, National, **invited.**)
- 44) **Wu, W.**, 2010. Five key knowledge gaps in the research on the ecological effects of acidification under climate change. Interacting effects of climate and nitrogen on ecosystems and their services – U.S. EPA workshop to review current science and inform policy-driven scientific needs, October 12-13, Arlington, VA. (Oral, Panel member presentation, **invited.**)
- 45) Frey, J., and **W. Wu**, 2010. Water Use of Southern Pine Tree Species. Gulf Coast Graduate Student Symposium, April 9-11, Ocean Springs, MS. (Oral, regional, unsolicited.)
- 46) McKinney, J.A., E.R. Hoffmayer, and **W. Wu**, 2010. Species distribution modeling of whale sharks, *Rhincodon typus*, in the northern Gulf of Mexico. Gulf Coast Graduate Student Symposium, April 9-11, Ocean Springs, MS. (3rd place award, oral, regional, unsolicited.)
- 47) **Wu, W.**, 2010. Predicting spatial distribution changes of tidal marshes under local land use / land cover and sea level rise. International conference on sea level rise in the Gulf of Mexico, March 1-3, Corpus Christi, TX. (Oral, international, **invited.**)
- 48) Lowe, M.R., **W. Wu**, M.S. Peterson, N.J. Brown-Peterson, P.J. Schofield, and W.T. Slack. 2010. Model-based projection of Nile tilapia's (*Oreochromis niloticus*) invasive ability: the importance of estuarine salt bridges. MS-American Fisheries Society meeting, 3-5 February, Tara, MS. (Won best oral presentation award, oral, regional, unsolicited.)
- 49) **Wu, W.**, 2009. Remote sensing and modeling of coastal marshes. *MAR581 Geological Oceanography, Department of Marine Science, University of Southern Mississippi*, Stennis Space Center, Mississippi, November 2. (**Invited seminar.**)
- 50) **Wu, W.**, 2009. Application of a biogeochemical model PnET-BGC to study long-term carbon dynamics at coastal forests frequently impacted by hurricanes in southern Mississippi. *Faculty Summer Research Grant presentation on LETTERS Day*, University of Southern Mississippi, Hattiesburg, MS, October 16. (Poster, campus-wide, **invited.**)
- 51) **Wu, W.**, 2009. Potential changes of distribution of tidal marshes under local land use / land cover and global climate changes. *24th US-International Association of Landscape Ecology Symposium*, Snowbird, Utah, April 15. (Oral, international, unsolicited, abstract published.)
- 52) **Wu, W.**, C. Hall, C. Driscoll and J. Clark, 2009. Assessing Hydrological and Biogeochemical Consequences of Climate and Land Use / Land Cover (LULC) Changes.

Department of Marine Science, University of Southern Mississippi, Stennis Space Center, Mississippi, March 27. (Invited seminar.)

- 53) **Wu, W.**, 2008. The impact of accelerated sea-level rise on the area and ecosystem services of tidal marshes. *Mississippi-Alabama Bays and Bayous Symposium*, Biloxi, Mississippi, October 28, 2008. (Oral, regional, unsolicited)
- 54) **Wu, W.**, 2008. Water and biogeochemical modeling at forested ecosystems. *University of Nanjing Forestry*, Nanjing, China, June 15. (Invited seminar.)
- 55) **Wu, W.**, 2008. Fresh water – linkage between upland forest and coastal environment. *Ecosystem modeling workshop of Gulf of Mexico Fishery Management Council*, Tampa, FL, May 6. (Invited talk.)
- 56) **Wu, W.**, L. Zhang, and C. Hall, 2008. Adapting Local Spatial Modeling to Predict Spatial Patterns of Orographic Cloud Cover at the Luquillo Experimental Forest in Puerto Rico. *23rd US- International Association for Landscape Ecology (IALE) Symposium - Landscape Patterns and Ecosystem Processes*, Madison, Wisconsin, April 6-10. (Poster, international, unsolicited.)
- 57) **Wu, W.**, 2008. How to build large-scale spatial models to integrate hydrology, nutrients and human disturbance: three applications. *University of Connecticut*, Storrs, CT, February 20. (Invited seminar.)
- 58) **Wu, W.**, J. Clark, and J. Vose, 2007. Applying Bayesian inference to quantify the uncertainties of a parsimonious conceptual hydrological model. *92th Ecological Society of American meeting*, San Jose, CA, August 5-10. (Poster, international, unsolicited.)
- 59) **Wu, W.**, and J. Clark, 2007. Applying Bayesian inference to quantify the uncertainties of a parsimonious conceptual hydrological model. *Statistical and applied mathematical sciences Institute*, Research Triangle Park, NC, April 3. (Oral, national, contributing.)
- 60) **Wu, W.**, and J. Clark, 2007. Applying a conceptual hydrological model with a hierarchical bayesian statistical approach on two watersheds in Coweeta. *Long term ecological research - Coweeta annual meeting*, Otto, NC, January 27. (Oral, national, contributing.)
- 61) **Wu, W.**, C. Hall, and F. Scatena, 2006. Modeling the impact of recent land cover changes on the stream flows in North-Eastern Puerto Rico. *Long Term Ecological Research – All Scientist Meeting 2006*, Estes Park, CO, September 20-23. (Poster, international, unsolicited.)
- 62) **Wu, W.**, H. Wang, and C. Hall, 2006. Spatial modelling of the probability of cloud cover, solar radiation and primary productivity in north-eastern Puerto Rico. *State University of New York – Environmental Science & Forestry (SUNY-ESF)*, Syracuse, NY, April 4. (Invited lecture.)
- 63) **Wu, W.**, 2005. Spatial modeling of the probability of cloud cover, evapotranspiration, and streamflow in northeastern Puerto Rico. *Marine Biology Laboratory*, Woods Hole, MA, January 5. (Invited seminar.)
- 64) **Wu, W.**, C.T. Driscoll, 2006. Application of PnET-BGC – an integrated biogeochemical model to assess the surface water ANC recovery at Adirondacks under three multi-pollutant proposals. *91th Ecological Society of America annual meeting*, Memphis, TN, August 6 – 11. (Poster, international, unsolicited.)
- 65) **Wu, W.**, C.T. Driscoll, 2006. Assessing the validity of three multi-pollutant proposals on reducing acidification of surface waters and soils for the Adirondacks using an integrated biogeochemical model. *Poster symposium at L.C. Smith College of Engineering and Computer Science, Syracuse University*, Syracuse, NY, April 7. (Poster, campus-wide,

unsolicited.)

- 66) **Wu, W.**, C.T. Driscoll, 2005. Critical Loads Calculation for 60 DDRP Sites in the northeastern USA. *Critical load group meeting*, Troy, NY, August 24. (Oral, regional, contributing.)
- 67) **Wu, W.**, C. Hall, 2005. Spatial modeling of evapotranspiration in North-Eastern Puerto Rico using remotely-sensed data. *20th Annual Symposium of International Association for Landscape Ecology (IALE)*, Syracuse, NY, March 12-16. (Oral, international, unsolicited.)
- 68) **Wu, W.**, C. Hall, 2005. Predicting the temporal and spatial probability of cloud cover in the Luquillo Experimental Forest in Puerto Rico using generalized linear (mixed) models. *20th Annual Symposium of International Association for Landscape Ecology (IALE)*, Syracuse, NY, March 12-16. (Poster, international, unsolicited.)
- 69) **Wu, W.**, and H. Wang, 2004. Spatial modeling of climate and primary productivity. *SUNY-ESF*, Syracuse, NY, March 2. (**Invited** lecture.)
- 70) C. Hall, **W. Wu**, and N. Harris, 2004. Spatial Models Developed by the SUNY-ESF Modeling Group. *Long term ecological research - Luquillo annual meeting*, San Juan, Puerto Rico, Luquillo, PR, January 6. (Oral, national, contributing.)
- 71) **Wu, W.**, and C. Hall, 2003. Spatial and temporal pattern of cloud cover probability in the Luquillo Mountains of northeastern Puerto Rico using remote sensing data. *Long Term Ecological Research (LTER) Network All Scientists Meeting*, Seattle, WA, September 18-21. (Poster, international, unsolicited.)
- 72) **Wu, W.**, and C. Hall, 2003. Spatial and temporal pattern of cloud cover probability in the Luquillo Mountains of northeastern Puerto Rico using remote sensing data. *Long term ecological research - Luquillo annual meeting*, Luquillo, Puerto Rico, January 5. (Poster, national, contributing.)
- 73) **Wu, W.**, and C. Hall, 2001. Spatial modelling of evapotranspiration in Luquillo Experimental Forest of Puerto Rico in January using remote sensing data. *Annual SUNY-ESF Poster Exhibit*, Syracuse, NY, April 6. (Poster, campus-wide, unsolicited.)

Synergistic Activities

- **Committee:** Member, Scientific and Statistical Committee of Gulf of Mexico Fishery Management Council 2008 - 2015.
- **Committee:** Scholarship Committee, College of Science & Technology, USM, since 2012.
- **Committee:** Faculty Council, College of Science & Technology, USM, 2012-2014.
- **Committee:** Governance Committee, Department of Coastal Sciences, USM, 2013, 2014.
- **Committee:** T&P committee, Student Admission Committee, Student Progress Committee, Division of Coastal Sciences, School of Ocean Science & Technology, USM 2016.
- **Journal Advisory Board:** Riparian Ecology and Conservation since 2012
- **Panel member:**
U.S. Environmental Protection Agency's (EPA's) workshop: "Interacting Effects of Climate and Nitrogen on Ecosystems and their Services", October 12-13, 2010, Arlington, Virginia.
- **Panel member:**
USM – "Reverse Engineering Proposal Development", March, 2016, Ocean Springs, MS.
- **A member** of American Association for the Advancement of Science, Ecological Society of America, Sino-Ecologists Association Overseas, American Geophysical Union, American Society for Photogrammetry and Remote Sensing, and US

- International Society of Landscape Ecology.
- **Book proposal reviewer for:** Springer USA
 - **Journal reviewer for:** *Journal of Agricultural, Food, and Environmental Sciences, Marine Ecology Progress Series, Wetlands Ecology and Management, Global Change Biology, Journal of Hydrology, Environmental Pollution, Remote Sensing of Environment, Remote Sensing, Biological Conservation, Geocarto International, Soil Biology & Biochemistry, Water Resources Research, Biological Trace Element Research, African Journal of Environmental Science and Technology, Wetlands, Ecological Indicators, Applied Geography, British Journal of Applied Science & Technology, Forests, Soil Science Society of America Journal, AIMS Environmental Science, Environmental Modelling & Software, Journal of Agriculture and Biodiversity Research, Journal of Current Genomics, Journal of Housing and Built Environment, Journal of Marine Science & Research Development, PLOS ONE, Ecological Modelling, Journal of Geography, Environment and Earth Science International, Journal of Coastal Research, Energy Economics.*
 - **Manuscript reviewer** for colleagues at US Forest Service, multiple universities.
 - **Grant reviewer for:** *National Science Foundation, Texas Sea-Grant, New York Sea-Grant, Illinois-Indiana Sea-Grant, RESTORE fund.*
 - **Technical Session Chair**
 - 20th Annual Symposium of International Association for Landscape Ecology (IALE), Syracuse, NY, March 12-16, 2005.
 - 2011 Annual Symposium of IALE, Portland, OR, April 3-7, 2011.
 - **Mentor for students at the profession meetings:** IALE 2008, 2009, 2011, 2012, 2014
 - **Judge for student posters:** AGU Fall meeting 2012
 - **Workshop Organizer**
 - Wu, W., 2003. Applications of remote sensing techniques in the Long Term Ecological Research. *Long Term Ecological Research (LTER) Network All Scientists Meeting*, Seattle, WA, September 18-21.
 - **Community services:**
 - Worked with coastal storms outreach, coastal training program, and Gulf of Mexico Alliance (GOMA) Community Resilience Priority Issue Team (PIT) to disseminate the data and results of the research project on the impact of sea level rise (SLR) on coastal ecosystems led by W. Wu et al. to resource managers and general public through workshops and reports (i.e. *Planning for the Future in Jackson County: Sea Level Rise and Changing Coastal Conditions* on March 6, 2012 in Mississippi, Workshop for NAACP and NOAA on October 17, 2016).
 - The research results of river flooding during Hurricane Katrina funded by NASA were integrated in Coastal Online Assessment and Synthesis Tool (COAST).
 - Wrote an article to disseminate our research on the impact of BP Deepwater Horizon Oil Spill on marsh plant photosynthesis for *Environmental Research Letters*, November, 2012.
 - Science judge: 1) Science Fair at Magnolia Park Elementary, Ocean Springs, MS (2014); 2) Mississippi Region VI Science Fair (2014), 3) Science Fair at Ocean Springs Upper Elementary School, Ocean Springs, MS (2015).
 - **In the media**
 - Interviewed for WLOX news: “New study shows U.S. losing coastal wetlands at alarming rate”, the day after the report “Status and trends of wetlands in the coastal watersheds of the

conterminous United States” by US Fish and Wildlife Service and NOAA was released, November 26, 2013. Also available on

<http://www.americanownews.com/story/24078429/new-study-shows-us-losing-coastal-wetlands-at-alarming-rate>.

Invited to write insight news piece on our recently published ERL article related to BP oil spill in November 2012, now it is published on ERL community website,

environmentalresearchweb: <http://environmentalresearchweb.org/cws/article/news/52140>, available on April 13, 2015.

Interviewed for Scientist Spotlight at the Gulf Coast ADVANCE Women Scientist Team, <http://www.gulfcoastadvance.org/spotlight/weiwu-1/>, available on April 13, 2015.