

Jessica O'Connell

Department of Ecosystem Science and Sustainability
Colorado State University
1476 Campus Delivery
Fort Collins, CO 80523-1476
jessica.oconnell@colostate.edu

landscapemodeling.net
github.com/jloconnell/
[Google Scholar](#)
[ORCID](#)

Education

- 2012 Oklahoma State University, Stillwater, OK 74074. Ph.D. Dissertation title: *Influences on plant species distributions and soil organic carbon in playa catchments of the High Plains*; GIS certificate; Mentor: Loren Smith
- 2006 Louisiana State University, Renewable Natural Resources, Baton Rouge, LA 70803. M.S. Thesis title: *Coastal marsh restoration using terraces: effects on waterbird habitat in Louisiana's Chenier Plain*; Mentor: Andy Nyman
- 2003 Sonoma State University, 1801 East Cotati Ave, Rohnert Park, CA 94928
B.A. in Biology. *Emphasis in Ecology and Evolution*

Postgraduate Professional Experience

- 2023-present Assistant Professor. Department of Ecosystem Science and Sustainability, **Colorado State University**.
- 2020-2023 Assistant Professor. Department of Marine Science, **University of Texas at Austin**, Marine Science Institute.
- 2019-2020 Assistant Research Scientist. Department of Marine Sciences, **University of Georgia**.
- 2014-2019 Postdoctoral researcher. Department of Marine Sciences, Department of Geography, **University of Georgia**, Athens, GA. With: Merryl Alber, Deepak Mishra. *Emphasis in coastal plant productivity and phenology modeling*.
- 2012-2013 Postdoctoral researcher. Department of Environmental Sciences, Policy and Management, **University of California, Berkeley**, in collaboration with USGS. With: Maggi Kelly (UC Berkeley) and Kristin Byrd (USGS). *Emphasis in remote sensing models of coastal plant productivity*.

Research Grants

- 2023-2024 Assessing water, carbon and nutrient cycling in native grassland and CRP playa wetland catchments. **Jessica O'Connell (UT Austin)**, Shannon Osborne (USDA ARS), Ellen Herbert (Ducks Unlimited). United States Department of Agriculture Conservation Effects Assessment Project. UT contract: **\$50,000**
- 2022-2023 A Regional Assessment of Ecosystem Service Provisioning in Restored Coastal Wetlands. **Jessica O'Connell (UT Austin)**, Anna Armitage (Texas A&M Galveston). Ducks Unlimited. UT contract: **\$65,000**
- 2021-2025 Assessing the Climate Change Mitigation Potential of Wetland Restoration in the Conservation Reserve Program: Measurements, Modeling, and Scaling Changes in Soil Carbon and Greenhouse Gas Fluxes. Ellen Herbert (Ducks Unlimited), Sheel Bansal (USGS), Shannon Osborne (USDA ARS), Chenhui Li (University of Missouri), **Jessica**

O'Connell (UT Austin), M. Siobhan Fennessy (Kenyon College, Thomas O'Halloran (Clemson University), Kimberly Van Meter (Pennsylvania State). USDA Conservation Reserve Program, Climate Change Mitigation Assessment Initiative Call for Proposals. UT-Subcontract: **\$516,899**

- 2021-2023 Mapping wetland and aquatic habitat change on Mustang and San Jose Islands, TX. PI: **Jessica L. O'Connell**. Coastal Bend Bays & Estuaries Program. **\$51,657**
- 2021-2025 LTER: Georgia Coastal Ecosystems – IV,. NSF OCE Long-term Ecological Research proposal. PI: Merryl Alber, CO-PI: Steven C. Pennings. UT Sub-contract: **\$94,500**
- 2022-2023 Automating the measurement of annual wetland ponding in Iowa and Minnesota portions of the Prairie Pothole Region. PI: Kaylan Kemink (Ducks Unlimited); Co-PI: Jessica L. O'Connell (UT). US Fish and Wildlife Service. UT-Subcontract: **\$37,606**
- 2020-2022 Automating the measurement of annual wetland ponding in the Prairie Pothole Region. PI: Kaylan Kemink (Ducks Unlimited); Co-PI: **Jessica L. O'Connell** (UT). Prairie Pothole Joint Venture. UT-Subcontract: **\$50,000**
- 2017-2020 A tidal and species based MODIS GPP product for estimating marsh blue carbon across the Southeastern United States. Deepak R. Mishra (UGA), **Jessica L. O'Connell** (UGA) and David L. Cotton (UGA). NASA Roses Carbon Cycle. **\$994,963**
- 2016-2018 A novel hybrid approach for mapping belowground productivity and carbon sequestration potential within Georgia salt marshes. Deepak R. Mishra (UGA), **Jessica L. O'Connell** (UGA), Merryl Alber (UGA) and Kristin B. Byrd (USGS). Georgia Sea Grant. **\$212,808**
- 2009-2010 Interaction of prairie wetlands, grasslands, and croplands with soil organic carbon and vegetation communities. Loren Smith (Oklahoma State), Jessica O'Connell (Oklahoma State). German Academic Exchange Service- DAAD Rise in North America. **\$1,680**
- 2009-2012 Oklahoma State University fellowship for retention of outstanding graduate students. Jessica O'Connell. **\$15,000**

Fellowships awarded to supervised mentees

- 2022-2025 NASA: BERM, a geospatial informatics approach for estimating coastal marsh blue carbon and vulnerability to sea level rise. Kyle Runion (PhD student, UT Austin), Jessica O'Connell (PI, UT Austin). NASA Future Investigators in NASA Earth and Space Science (NASA FINESST) Graduate Fellowship. Award: **\$150,000**
- 2022-2024 Assessing tidal salt marsh resilience to global change as a consequence of water quality mediated belowground plant productivity (MANERR). National Oceanic and Atmospheric Administration (NOAA), National Estuarine Research Reserve Margaret A Davidson Graduate Student Fellowship. Kyle Runion (PhD student, UT Austin), Jessica O'Connell (PI, UT Austin). Award: **\$102,436**
- 2022-2023 McNair Scholars Graduate School Fellowship. Provides one year of salary, fringe, and tuition support. Awarded to Kody Barone (MS. Student, UT Austin).

Press

PBS Documentary on the Georgia Coastal Ecosystems Long Term Ecological Research program; Belowground Biomass work featured: <https://www.changingseas.tv/season-13/1302/>

Publications

[^]student-led publication; *Has Associated GitHub Repository

Published

22. Bansal S, Neubauer SC, Bridgham SD, Krauss KW, Trettin C, Meier J, Tangen BA, Knox S, Johnson OF, Noe GB, Wickland KP, Kroeger KD, Ward EJ, Nahlik AM, Vargas R, Jones MC, Arias-Ortiz A, Eagle M, Desai AR, Rosenberry DO, Grunwald S, Newman S, Berg P, Creamer C, Waldrop M, Song C, Zhu X, Halabisky M, Turner J, Yarwood S, Loder A, Finkelstein SA, Middleton BA, **O'Connell JL**, Mohammad MRJ, Duberstein JA, Wallin MB, Zhaohui AW, DelSontro T, McNicol G, Bastviken D, Armitage AR, Kuehn KA, Oikawa P, Stagg CL, Craft C, Mobilian C, Willard DA, Göckede M. 2023. A Practical Guide to Measuring Wetland Carbon Pools and Fluxes . *Wetlands*. In Press.
21. [^]Hawman, PA, Mishra, DR, **O'Connell, JL**. 2023. Dynamic emergent leaf area in tidal wetlands: Implications for satellite-derived regional and global blue carbon estimates. *Remote Sensing of Environment* 290:113553.
20. [^]Mao L, Mishra DR, Hawman PA, Narron CR, **O'Connell JL**, Cotten, DL. 2023. Photosynthetic performance of tidally flooded *Spartina alterniflora* salt marshes. *Journal of Geophysical Research: Biogeosciences* 128:e2022JG007161.
19. [^]Narron, CR, **O'Connell, JL**, Mishra, DR, Cotten, DL, Hawman, PA, Mao, L. 2022. Flooding in Landsat across tidal systems (FLATS): An index for intermittent tidal filtering and frequency detection in salt marsh environments. *Ecological Indicators*, 141, 109045. <https://doi.org/10.1016/j.ecolind.2022.109045>
18. Sahour H, Kemink KM, **O'Connell JL**. 2021. Integrating SAR and optical remote sensing for conservation-targeted wetlands mapping. *Remote Sensing* 14: 159.
17. ***O'Connell, JL**, Mishra, DR, Alber, M, Byrd, KB. 2021. BERM: A Belowground Ecosystem Resiliency Model for estimating *Spartina alterniflora* belowground biomass. *New Phytologist*. 232: 425-439. <https://doi.org/10.1111/nph.17607>
Github code repository: <https://github.com/jloconnell/BERM>
<https://zenodo.org/badge/latestdoi/382914221>
16. [^]Hawman, PA, Mishra, DR, **O'Connell, JL**, Cotten, DL, Narron CR, Mao, L. 2021. Salt marsh light use efficiency is driven by biophysical gradients and species-specific physiology and morphology. *Journal of Geophysical Research: Biogeosciences* 126: e2020JG006213. <https://doi.org/10.1029/2020JG006213>.
15. ***O'Connell, JL**, Alber M, Pennings SC. 2019. Microspatial differences in soil temperature cause phenology change on par with long-term climate warming in salt marshes. *Ecosystems*. <https://doi.org/10.1007/s10021-019-00418-1>
Github code repository: <https://github.com/jloconnell/phenometrics>
14. *Alber, M, **O'Connell, JL**. 2019. Elevation drives gradients in surface soil temperature within salt marshes. *Geophysical Research Letters* 46: 5313-5322.
Github code repository:

https://github.com/jloconnell/convert_top_of_atmosphere_thermal_to_land_surface_temperature

13. Tao, J., Mishra, D R, Cotten, D L, **O'Connell, JL**, Leclerc, M, Nahrawi, HB, Zheng, G, Pahari, R. 2018. A comparison between the MODIS product (MOD17A2) and a tide-robust empirical GPP model evaluated in a Georgia wetland. *Remote Sensing*, 10(11), 1831.
12. ***O'Connell, JL**, Mishra DR, Cotten DL, Wang L, Alber M. 2017. The Tidal Marsh Inundation Index (TMII): An inundation filter to flag flooded pixels and improve MODIS tidal marsh vegetation time-series analysis. *Remote Sensing of Environment* 201:34–46. GitHub Code repository: https://github.com/jloconnell/remote_sensing_with_R/blob/master/create_modis_composites.r
11. ***O'Connell, JL**, Alber, M. 2016. A smart classifier for extracting environmental data from digital image time-series: applications for PhenoCam data in a tidal salt marsh. *Environmental Modelling and Software* 84: 134–9. GitHub code repository: https://github.com/jloconnell/smart_classifier_phenocam
10. **O'Connell, JL**, Daniel, DW, McMurry, ST, Smith, LM, 2016. Soil organic carbon in playas and adjacent prairies, cropland, and Conservation Reserve Program land of the High Plains, USA. *Soil and Tillage Research* 156: 16–24.
9. **O'Connell, JL**, Byrd, KB, Kelly, M, 2015. A hybrid model for mapping relative differences in belowground biomass and root: shoot ratios using spectral reflectance, foliar N and plant biophysical data within coastal marsh. *Remote Sensing* 7: 16480–16503.
8. Mishra DR, Ghosh S, Hladik C, **O'Connell, JL**, Cho HJ. 2015. Wetland mapping methods and techniques using multi-sensor, multi-resolution remote sensing: Successes and Challenges. In: *Remote Sensing of Water Resources, Disasters, and Urban Studies*. Editor: Thenkabail PS. Taylor and Francis Group, Boca Raton FL, USA.
7. Byrd KB, **O'Connell, JL**, Di Tommaso S, Kelly M. 2014. Evaluation of sensor types and environmental controls on mapping biomass of coastal marsh emergent vegetation. *Remote Sensing of Environment* 149:166-180.
6. **O'Connell, JL**, Byrd KB, Kelly, M. 2014. Remotely-sensed indicators of N-related biomass allocation in *Schoenoplectus acutus*. *PLoS ONE* 9: e90870.
5. **O'Connell, JL**, Johnson, LA, Smith, LM, Haukos, DA, McMurry, ST. 2013. Effects of agricultural tillage and sediment accumulation on emergent plant communities in playa wetlands of the US High Plains. *Journal of Environmental Management* 120:10-17.
4. **O'Connell, JL**, Johnson, LA, Beas, BJ, Smith, LM, Haukos, DA, McMurry, ST. 2013. Predicting dispersal-limitation in plants: Optimizing planting decisions for isolated wetland restoration in agricultural landscapes. *Biological Conservation* 159; 343-354.
3. **O'Connell, JL**, Johnson, LA, Smith, LM, Haukos, DA, McMurry, ST. 2012. Influence of land-use and conservation programs on playa wetland ecosystem services in the U.S. High Plains. *Biological Conservation* 146:108-115.
2. **O'Connell, JL**, Nyman, JA. 2011. Effects of marsh pond terracing on coastal wintering waterbirds before and after Hurricane Rita. *Environmental Management* 48: 975-984.
1. **O'Connell, JL**, Nyman, JA. 2010. Marsh terraces in coastal Louisiana increase marsh edge and densities of waterbirds. *Wetlands* 30:125-135.

Published Datasets

- O'Connell, JL, et al.. 2021. Monthly *Spartina alterniflora* marsh vegetation data for additional sites along the Georgia coast used in the Belowground Ecosystem Resiliency Model. Georgia Coastal Ecosystems LTER Project, University of Georgia, Long Term Ecological Research Network. <http://dx.doi.org/10.6073/pasta/03f4f78c6498aecca34faf4339591129>
- Mishra, DR, et al. 2020. Leaf area index and above ground biomass for *Juncus roemerianus* in the Grand Bay National Estuarine Research Reserve from 2015 to 2019. Georgia Coastal Ecosystems LTER Project, University of Georgia, Long Term Ecological Research Network. <http://dx.doi.org/10.6073/pasta/6b9e1cb50a6f13f944fd3eba3d37a65c>
- Mishra, DR, et al. 2020. Leaf area index for *Spartina alterniflora* near the GCE-LTER Flux Tower in 2018 and 2019. Georgia Coastal Ecosystems LTER Project, University of Georgia, Long Term Ecological Research Network. <http://dx.doi.org/10.6073/pasta/53a3e61158aa058aee50be72a1156c83>
- Hawman, PA, et al. 2020. Eddy covariance 30-minute CO₂ fluxes with accompanying biophysical variables from the Grand Bay, Mississippi flux tower site from March 2018 to January 2019. Georgia Coastal Ecosystems LTER Project, University of Georgia, Long Term Ecological Research Network. <http://dx.doi.org/10.6073/pasta/3e78ff1dc5e4f102ddbca5e876c9c861>
- Hawman, PA, et al. 2020. Eddy covariance 30-minute CO₂ fluxes with accompanying biophysical variables from the GCE-LTER flux tower site from December 2018 to January 2020. Georgia Coastal Ecosystems LTER Project, University of Georgia, Long Term Ecological Research Network. <http://dx.doi.org/10.6073/pasta/99f6b6ab2db87ea601152f21a78e9533>
- Alber, M, et al. 2019. Variation in Landsat 8-estimated land surface temperature with elevation from *Spartina alterniflora* marsh cross sections in the Georgia Coastal Ecosystems Long Term Ecological Research (GCE-LTER) site and Virginia Coast Reserve (VCR) LTER sites for winter and summer observations spanning 2013-2018. Georgia Coastal Ecosystems LTER Project, University of Georgia, Long Term Ecological Research Network. <http://dx.doi.org/10.6073/pasta/f3917ecc86ec9b67921f8fb3c33b770c>
- Alber, M, et al. 2019. Continuous soil temperature measurements at 10 cm depth from 3 month-long deployments in summer and winter within the Georgia Coastal Ecosystems Long Term Ecological Research (GCE-LTER) site in 2017 and 2018. Georgia Coastal Ecosystems LTER Project, University of Georgia, Long Term Ecological Research Network. <http://dx.doi.org/10.6073/pasta/db52896274df333805f2043efb7e5710>
- Richardson, AD, et al. 2017. PhenoCam Dataset v1.0: Vegetation phenology from digital camera imagery, 2000-2015. ORNL DAAC. <https://doi.org/10.3334/ORNLDAAC/1511>
- Pennings, SC, et al. 2016. Monthly Vegetation and Invertebrate Population Monitoring near the Georgia Coastal Ecosystems LTER Flux Tower. Georgia Coastal Ecosystems LTER Project, University of Georgia, Long Term Ecological Research Network. <http://dx.doi.org/10.6073/pasta/7f06441e8c200b6429dee520a3cc3366>

Selected Presentations

****invited presentation, ^student presentation***

- *Bansal, S, Herbert E, Ansari, J, Beall, MC, Beggane, E, Davis, M, Fennessy, MS, Kuleba, A, Li, C, Meier, J, **O'Connell, JL**, O'Halloran, TL, Osborne, S, Podolinsky, MA, Sampselle, C, Tomakso, R, Van

- Meter, KJ. 2023. Quantifying wetland carbon sequestration and greenhouse gas fluxes from restored wetlands. American Geophysical Union. San Francisco, CA.
- ^Hawman, P, Mishra, DR, **O'Connell, JL**, Cotten DL. 2023. Tidal marsh heterogeneity: Dynamic emergent leaf area and canopy heterogeneity drive variance in carbon fluxes across timescales. American Geophysical Union. San Francisco, CA.
- ^Runion, KD, Alber, M, Mishra, DR, Byrd, KB, **JL O'Connell**. 2023. Is salt marsh ecosystem resilience driven more by changes in space or time? Ecological Society of America. Portland, OR.
- ^Runion, KD, Alber, M, Mishra, DR, Byrd, KB, **JL O'Connell**. 2023. Is salt marsh ecosystem resilience driven more by changes in space or time? National Association of Wetland Managers. Webinar Series.
- ^Marconi, C and **O'Connell, JL**. 2023. An open-source tool for rapid coastal habitat change detection through machine learning and remotely sensed data. Benthic Ecology Meeting Society. Miami, FL. (Poster).
- ^Hawman, P, **O'Connell, JL**, Mishra, DR. 2022. Dynamic emergent leaf area in tidal wetlands. Long Term Ecological Research (LTER) Network: All Scientists Meeting. Pacific Grove, CA. Poster.
- ^Runion, K, Mishra, D, Alber, M, **O'Connell, JL**. 2022. Broadening a Belowground Ecosystem Resiliency Model for *Spartina alterniflora* salt marshes. Long Term Ecological Research (LTER) Network: All Scientists Meeting. Pacific Grove, CA. Poster.
- ***O'Connell, JL**. 2021. Eco-informatics and open science approaches provide powerful tools for forecasting coastal landscape vulnerability to sea level rise. University of Florida. Engineering School of Sustainable Infrastructure and Environment, Departmental Seminar.
- ***O'Connell, JL**. 2021. BERM, an eco-informatics approach for forecasting coastal marsh vulnerability. University of Texas at Austin. Integrative Biology, Departmental Seminar.
- Sahour, H, **O'Connell, JL**, Kemink, K. 2020. Mapping the spatiotemporal variation in wetland habitat using remote sensing-based machine learning models. American Geophysical Union (AGU). Virtual meeting.
- ***O'Connell, JL**, Alber, M, Mishra, DR, KB Byrd, KB. 2020. Structural heterogeneity in above vs belowground biomass pools differ for *Spartina alterniflora* monocultures, with consequences for forecasting ecosystem resiliency. Invited to the organized session: "Ecosystem Structural Diversity". Ecological Society of America (ESA). Virtual meeting.
- Mishra, DR, Cotten, DL, **O'Connell, JL**, Mao, L, Narron, C, & Hawman, P. 2019. Salt marsh light use efficiency and gross primary productivity in response to environmental conditions. American Geophysical Union (AGU), San Francisco, CA.
- O'Connell, JL**, Alber, M. 2019. Elevation drives gradients in surface soil temperature within salt marshes. Coastal and Estuarine Research Federation (CERF), Mobile, AL.
- ^Narron, CR, Mishra, DR, **O'Connell, JL**, Cotten, DL, Hawman, P and Mao, L. 2019. Assessing tidal wetland above- and belowground net primary production using field and in situ measurements. Coastal and Estuarine Research Federation (CERF), Mobile, AL.
- ^Hawman, P, Mishra, DR, Cotten, DL, **O'Connell, JL** and Mao, L, Narron, CR. 2019. Salt marsh light use efficiency and gross primary production in response to environmental conditions. Coastal and Estuarine Research Federation (CERF), Mobile, AL.

- ***O'Connell, JL**. 2019. Patterns of *Spartina alterniflora* phenology and belowground biomass. Departmental Seminar, Dept. of Geosciences, University of Lafayette, Lafayette, LA.
- ***O'Connell, JL**. 2019. Patterns of *Spartina alterniflora* phenology and belowground biomass. Departmental Seminar, Dept. of Marine Sciences, University of Georgia, Athens, GA.
- ^Mao, L, Mishra, DR, Cotten, DL, **O'Connell, JL**, Narron CR, Hawman, P. 2019. Analyzing chlorophyll fluorescence in *Juncus roemerianus* by Pulse Amplitude Modulated (PAM) fluorometer at different plant heights. International Geoscience and Remote Sensing Society, Yokohama, Japan.
- Nyman, JA, **O'Connell, JL**, Sullivan LR, Patton, BA. 2019. Accounting for edge effects; i.e., interspersion, on waterbirds and fish when creating and restoring emergent wetlands across estuarine gradients. Society for Wetland Scientists, Baltimore, MD.
- ***O'Connell, JL**, Alber, M, Mishra, DR, KB Byrd, KB. 2018. Landsat models of *Spartina alterniflora* belowground biomass in coastal marshes. Invited to the organized session: "Cutting-Edge Remote Sensing Applications in Ecology: Spanning Scales, Sensors, and Ecosystems". Ecological Society of America (ESA). New Orleans, LA.
- ***O'Connell, JL**, Alber, M, Mishra, DR, Byrd, KB. 2018. Importance of estimating spatial and temporal variation in *Spartina alterniflora* belowground biomass. Georgia Coastal Research Council, Savannah, GA.
- ***O'Connell, JL**. Estimating tidal wetland resilience through plant productivity modeling. 2018. Departmental Seminar, Dept. of Biology, University of Central Florida, Orlando, FL.
- ^Hawman, P, Mishra, DR, Cotten, DL, **O'Connell, JL**, Narron CR, Mao, L. 2018. Effects of cloud cover on light use efficiency in salt marsh species. American Geophysical Union, Washington D.C. Poster.
- ^Narron, CR, **O'Connell, JL**, Mishra, DR, Cotten, DL. 2018. Reparameterization of the Tidal Marsh Inundation Index (TMII) to Improve Landsat Vegetation Time-Series in Georgia and Gulf Coast Tidal Marshes. American Geophysical Union, Washington D.C. Poster.
- ^Mao, L, Mishra, DR, Cotten, DL, **O'Connell, JL**, Narron CR, Hawman, P. 2018. Measuring Chlorophyll Fluorescence in a *Juncus roemerianus* Dominated Marsh using a Pulse Amplitude Modulated (PAM) Fluorometer. American Geophysical Union, Washington D.C. Poster.
- ^Narron, C.R., Mishra, DR, **O'Connell, JL**, Cotten, DL. 2018. Estimating belowground biomass and root:shoot ratios of Gulf coast salt marshes using remote sensing and biophysical data. American Association of Geographers (AAG), New Orleans, LA.
- ^Hawman, P., Mishra, DR, **O'Connell, JL**, Cotten, DL. 2018. Fine-tuning WDRVI for Salt Marsh Species Using Proximal Remote Sensing. American Association of Geographers (AAG), New Orleans, LA.
- Alber, M, **O'Connell, JL**, Pennings, SC. 2018. Phenological variation in a *Spartina alterniflora* marsh. Long Term Ecological Research (LTER) Network: All Scientists Meeting. Pacific Grove, CA. Poster.
- ***O'Connell, JL**, Alber, M, Mishra, DR, Byrd, KB. 2017. Remote sensing of *Spartina alterniflora* belowground biomass. Georgia Sea Grant Research Symposium. Athens, GA.
- O'Connell, JL**, Alber, M, Mishra, DR, Byrd, KB. 2017. Estimating patterns in *Spartina alterniflora* belowground biomass within salt marshes. American Geophysical Union (AGU). New Orleans, LA.

- Forbrich, I, Nahrawi, HB, Leclerc, MY, **O'Connell, JL**, Mishra, DR, Fogarty, MC, Edson, JB, Vázquez-Lule, AD, Vargas, R, Giblin, AE, Alber, M. 2017. Variation in salt marsh CO₂ fluxes across a latitudinal gradient along the US Atlantic coast. American Geophysical Union (AGU). New Orleans, LA.
- ***O'Connell, JL**. Coastal marsh plant productivity: implications for coastal resilience. 2017 Departmental Seminar. Department of Biology. Virginia Commonwealth University, Richmond, VA.
- O'Connell, JL**, Alber, M, Pennings, SC. 2017. Spatial and temporal variation in phenology in a Georgia salt marsh. Coastal and Estuarine Research Federation (CERF). Providence, RI.
- Alber, M, **O'Connell, JL**, Sheldon, J. 2017. The application of early warning signals to brackish marshes. Coastal and Estuarine Research Federation (CERF). Providence, RI.
- O'Connell, JL**, Alber, M, Mishra, DR. 2015. Remote sensing of *Spartina alterniflora* belowground biomass within salt marshes. Coastal and Estuarine Research Federation (CERF). Portland, OR.
- O'Connell, JL**, Byrd, KB, Kelly M. 2013. Remotely-sensed indicators of N-related biomass allocation in *Schoenoplectus acutus*. Ecological Society of America. Minneapolis, MN.
- ***O'Connell, JL**. 2011. Plant species distributions and soil organic carbon in playas of the High Plains. Departmental Seminar, Texas A&M at Galveston, Galveston, TX.
- ***O'Connell, JL**, Johnson, LA, Smith, LM, Haukos, DA, McMurry, ST. 2011. Land management effects on plant communities of playas. Rainwater Basin Joint Venture/Playa Lakes Joint Venture Research Symposium/Waterbird Society Conference. Grand Island, NE.
- O'Connell, JL**, Johnson, LA, Smith, LM, Haukos, DA, McMurry, ST. 2011. Influence of land-use on playas across the U.S. High Plains: Restoration may be mediated by plant traits. US-IALE Symposium, Portland, OR.
- ***O'Connell, JL**, Nyman, JA. 2006. Waterbird use of terraced vs. unterraced ponds in coastal Louisiana. Earthen Terraces Symposium: Status of the Technique. Baton Rouge, LA.

Teaching

- NR/GR 323 Remote Sensing Image Analysis. 4 credit hrs. Colorado State University, Fall Semesters. Undergraduate course. Introduction to the interpretation and analysis of photographic, multispectral scanner, and radar data; sensor systems; applications to resource management. Lecture plus Laboratory components. Cross-listed with NR/GR 503
- NR/GR 503 Remote Sensing Image Analysis. 4 credit hrs. Colorado State University, Fall Semesters. Graduate Course. Introduction to the interpretation and analysis of photographic, multispectral scanner, and radar data; sensor systems; applications to resource management. Lecture plus Laboratory components. Cross-listed with NR/GR 323
- MNS 193 Field and Analysis Methods in Remote Sensing. 1 credit hr. University of Texas, Fall Semester. Graduate course. This course teaches open source remote sensing methods from freely available satellite data. Experimental design, reproducible research workflows, data processing, machine learning, and analysis in R and Google Earth Engine were emphasized.
- MNS 352E Marine Conservation Biology. 3 credit hrs. University of Texas, Spring Semester. Upper division undergraduate course, presenting marine conservation science, policy and management from a systems perspective. Emphasis is on skill building in critical thinking,

long-form science writing, group cooperation, and science communication. This course also introduces students to the breadth of conservation employment opportunities.

GEOG 4460/6460 Field and Lab Methods in Remote Sensing. Co-Instructor. 3 credit hrs. University of Georgia; Fall Semester. Upper division course with enrollment of upper level undergraduates and graduate students. This course taught remote sensing field techniques, experimental design, and data processing in R. Final grade was derived from an individual capstone field project that students design and implement.

Mentoring

Current Research Assistants and Graduate Students

Kyle Runion, PhD Student, University of Texas at Austin. Project: BERM, the Belowground Ecosystem Resiliency Model, a geospatial informatics approach for estimating coastal marsh blue carbon and vulnerability to sea level rise. NASA FINESST and NOAA Davidson Graduate Student Fellow.

Megan Podolinsky, MS Student, University of Texas at Austin. Project: Assessing the Climate Change Mitigation Potential of Wetland Restoration in the Conservation Reserve Program: Measurements, Modeling, and Scaling Changes in Soil Carbon and Greenhouse Gas Fluxes. USDA funded.

Christina Marconi, co-funded PhD student in collaboration with Jordan Casey (UT Austin). O'Connell lab project: Mapping wetland and aquatic habitat change on Mustang and San Jose Islands, funded by the Coastal Bend Bays & Estuaries Program.

Jackson Aiken, Research Assistant. Project: A Regional Assessment of Ecosystem Service Provisioning in Restored Coastal Wetlands.

Past postdoctoral research mentees

Saket Gowravaram. Postdoctoral researcher, University of Texas at Austin Emphasis: Land cover and surface water mapping via satellite and drone data. Funding from Ducks Unlimited and the Prairie Pothole Joint Venture.

Hossein Sahour. University of Texas at Austin. Project: Automating the measurement of annual wetland ponding in the Prairie Pothole Region through open source remote sensing and Google Earth Engine.

Selected Service

^^Upcoming

^^2023 Session proposals: "Part 1 and 2: Integrated applications of satellite and non-satellite remote sensing products to inform coastal processes and management decisions" Coastal Estuarine Research Federation, Session Co-Chair. Session Leads: Tyler Lynn (UGA) and Kari St.Laurent (NOAA); Other Co-Chairs: Peter Hawman (UGA), Tim Bell (WHOI).

2022 Session proposal: "Measuring and Modeling Wetland-Climate Feedbacks to Meet Climate Mitigation Goals", Joint Aquatic Sciences Meeting. Session Co-chair. Lead: Sheel Bansal. Other Co-Chairs: Ellen Herbert, M. Siobhan Fennessy, and Kimberly Van Meter.

- 2020-2022 Coastal Bend Bays and Estuaries Program: Habitat and Living Resources Needs Project Proposals; Attended meetings to help review/rank Texas Coastal Bend coastal ecosystem restoration/conservation project proposals
- 2021 Session proposal: "Belowground ecosystem function: advances in measuring the unseen world", Coastal Estuarine Research Federation, Virtual Conference. Session Lead Chair. Co-chairs: Christine Angelini (UF), and Amanda Spivak (UGA).

Training in Effective Teaching, Mentorship, Diversity, Equity and Inclusion

- 2022 Inclusive Graduate Education Network (IGEN) Workshop: Fundamentals of Equity in Graduate Admissions
- 2022 Inclusive Graduate Education Network (IGEN) Workshop: Strategies for Equity-based Holistic Review of Graduate Applicants
- 2021 Workshop: Working with and advising international students. University of Texas at Austin
- 2020 Teaching Discovery Days: Creating Resources for Active Online Learning. University of Texas at Austin
- 2020 Teaching Discovery Days: Trauma Informed Digital Pedagogy. University of Texas at Austin
- 2020 Teaching Discovery Days: Integrating Writing-Intensive Experiential Learning Projects into an Upper Division Science Class. University of Texas at Austin
- 2020 Teaching Discovery Days: Teaching STEM Research Writing. University of Texas at Austin
- 2020 Teaching Discovery Days: Replacing the Final Exam with a Video Project. University of Texas at Austin
- 2020 Teaching Discovery Days: Using Zoom for community building. University of Texas at Austin
- 2019 Workshop: Supervisory fundamentals. University of Georgia
- 2019 Workshop: Leadership through effective mentoring. University of Georgia
- 2019 Diversity and Inclusion certificate: Got your Six- Supporting UGA's student Veterans. University of Georgia
- 2019 Diversity and Inclusion certificate: Diversity at UGA: Beyond the Numbers. University of Georgia
- 2019 Diversity and Inclusion certificate: UGA's Non Discrimination Anti-Harrasment Policy. University of Georgia
- 2019 Diversity and Inclusion certificate: An LGBTQ Primer, Creating an Inclusive Community. University of Georgia

Outreach

- 2020-2023 Science expert interview with undergraduate Marine Ecology Class at the University of Texas at Austin
- 2022 Remote Sensing Science guest lecture and job panel; United Tribes Technical College

- 2020-2022 Science seminar guest lecture with undergraduate Marine Seminar Class at the University of Texas at Austin
- 2020 Undergraduate Marine Science Club Presentation, job panel; University of Texas at Austin
- 2019 Member, R-ladies Athens: Promoting diversity in the R statistics community
- 2017 Women in Science Summer Camp, UGA Marine Extension, Skidaway Island, GA. Taught marsh ecology and remote sensing to middle school girls
- 2016,2017 Guest Scientist, Summer Schoolyard Program for High School Teachers, GCE-LTER, Sapelo Island, GA,
- 2016 Island Scientists Summer Camp, UGA Marine Extension, Skidaway Island, GA. Taught remote sensing science to middle school children
- 2010 OSU Upward Bound. Mentored high school students who were potential first-generation college students with interests in biology careers

Professional Associations

- American Geophysical Union
- Ecological Society of America
- Coastal & Estuarine Research Federation