

Michael J. Gilbrook
Lecturer in Environmental Studies & GIS
UCF School of Interdisciplinary Studies
University of Central Florida
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Education

- 2014, University of Central Florida
Ph.D., Conservation Biology
Dissertation: “Using Land Cover Mapping and Landscape Metrics to Evaluate Effects of Urban Development on Ecological Integrity in Florida”
- 1981, University of Central Florida
M.S., Biological Science
Thesis: “Seasonal Periodicity of Periphytic Algae in Relation to Water Quality in Three Florida Experimental Ponds”
- 1978, University of Central Florida
B.S., Limnology

Professional Certifications

- AICP, American Institute of Certified Planners, 2001 – Current
- GISP, GIS Certification Institute, 2009 – Current

Teaching Experience

- 2023 – Current, University of Central Florida, School of Interdisciplinary Studies
Instructor – GIS 4912, “Directed Research in GIS”
Instructor-of-record and mentor for student directed research projects which employ GIS for data collection, analysis and reporting. Most recently supervised an undergraduate research project titled “Study of Beachline Litter Distribution in Brevard County, Florida” in Fall 2023. The research effort used GIS-based field data collection and analysis methods to test hypotheses regarding the distribution of beach litter with respect to beach access points. The final presentation poster was included in the UCF Undergraduate Research Showcase in March 2024.
- 2022 – Current, *Instructor – EVR 4940, “Capstone Experience for Environmental Studies”*

Instructor-of-record for this online-only version of the EVR 4940 course. Responsible for managing the delivery of course materials and assessments via UCF Webcourses and providing direct feedback to students via email, discussion comments and comments on assignments as well as weekly videoconference meetings. Coordinated with multiple community and UCF partners to provide students with actual environmental consulting opportunities for their final Service-Learning projects. Updated the online instructional content in Webcourses, introduced the Yellowdig social-media discussion tool.

- 2020 – Current, *Instructor – GIS 4314, “GIS Research Methods in Environmental Studies”*

Instructor-of-record for this web-based course offered for the first time in the Summer 2020 term. This High Impact Practices (HIP) course introduces students to several advanced GIS techniques which they incorporate into a professional research proposal. Responsible for developing and managing the delivery of course materials and assessments via UCF Webcourses and providing direct feedback to students via email, discussion comments and comments on assignments.

- 2019 – Current, *Instructor – EVR 3008, “Foundation of Environmental Studies”*

Instructor-of-record for this online-only version of the EVR 3008 course. Responsible for managing the delivery of course materials and assessments via UCF Webcourses and providing direct feedback to students via email, discussion comments and comments on assignments as well as face-to-face office meetings. Developed updates to the online content in Webcourses, including preparation of grading rubrics for 12 assignments.

- 2007 – Current, *Instructor – GIS 4301C, “Advanced GIS Applications for Environmental Studies”*

Developed the syllabus, including both lectures and laboratory exercises, for this advanced level GIS course. Responsible for all student instruction and administered all grades for multiple sections. Supervised introduction of new faculty teaching the course in 2006, 2017 and 2024, and continue to lead curriculum development for the course including an asynchronous, online version to be offered as part of the new Sustainability B.S/B.A. degree program.

- 2003 – Current, *Instructor – GIS 3043C, “GIS for Environmental Studies”*

Developed the syllabus, including both lectures and laboratory exercises, for this introductory level GIS course. Responsible for all student instruction and administered all grades for multiple sections. Developed an asynchronous online-only version of the course for Spring 2022. Supervised introduction of new faculty teaching the course in 2006, 2017, 2023, 2024 and 2025, and continue to lead curriculum development for the course including an asynchronous, online version to be offered as part of the new Sustainability B.S/B.A. degree program.

Related Experience

- 2018 – August 2021

HDR, Orlando, FL

Senior Geospatial Analyst

Provided spatial analysis support for transportation, planning and environmental projects conducted throughout the company. Developed mobile field data collection schemas and workflows for field teams. Projects conducted during this period included using GIS to identify locations for Electric Vehicle Servicing Equipment along state roadways throughout Florida as part of the Florida Electric Vehicle Master Plan, conducting sea level rise vulnerability assessments of roadways in Miami-Dade and Monroe Counties, prioritizing Florida railroad at-grade crossings for safety improvements, developing a railroad crossing inventory application for use by Minnesota DOT, and managing the GIS database for a bus rapid transit (BRT) Environmental Impact Study in South Carolina.

- 2001 – 2017

Geospatial Technology Director

Set the roadmap for GIS technology within the company. Oversaw the enterprise deployment of GIS software and hardware to support approximately 100 GIS professionals and 600 GIS users. Developed Best Practices standards and guidelines for use of GIS and oversaw the development and deployment of GIS training. Conducted numerous in-house GIS training sessions and facilitated GIS needs assessment and planning sessions with HDR offices. Serve as Project Manager, GIS Task Manager or GIS Quality Control Manager on projects.

- 1993 – 2006

GIS Manager

Led the GIS production team in the HDR Orlando office. Conducted spatial analyses to support a wide range of consulting projects in environmental planning, environmental impact assessment and facility siting. As a Project Manager was responsible for development of project scope, budget and schedule and ensuring that high-quality project deliverables were prepared on-time and within budget. Supervised up to five GIS professionals.

- 1985 – 1993

East Central Florida Regional Planning Council, Winter Park, FL

Section Manager, Special Projects

Prepared the Conservation Element of the East Central Florida Regional Policy Plan, including coordination of all meetings of the Conservation Element Technical Advisory Committee. Developed the Council's GIS capability and applied it to various environmental planning issues including coastal marina siting, identification of regionally

significant wetlands, and establishing conservation land acquisition priorities. Served as the ECFRPC staff representative in development of the Wekiva Protection Act.

- 1981 – 1985

Florida Department of Transportation, DeLand, FL

Environmental Specialist

Conducted water quality field sampling and laboratory analysis in support of environmental impact assessments and regulatory permitting for the FDOT District Five Environmental Management Office. Performed hydrological modeling to assess water circulation and water quality impacts associated with a causeway across the Halifax River estuary. Served as the FDOT representative to the Indian River Lagoon Field Committee which established many of the recommendations that were later implemented in the Indian River Lagoon National Estuary Program.

Publications and Presentations

- Gilbrook, M. 2023. “Successfully Identifying AI Submissions for Short-Essay Exam Questions.” UCF Teaching & Learning with AI Conference 2023, Orlando, FL.
- Gilbrook, M.J. and R. Littlefield. 2021. “Prioritizing Roadway Sea Level Rise Mitigation in the Florida Keys.” URISA GIS Pro 2021 Conference, Baltimore, MD.
- Gilbrook, M.J. 2019. “Collecting Statewide Rail Crossing Inventories with a Smartphone App.” URISA GIS Pro 2019 Conference, New Orleans, LA.
- Gilbrook, M.J. 2019. “Identification of Roadways at Risk from Sea Level Rise.” URISA GIS Pro 2019 Conference, New Orleans, LA.
- Gilbrook, M.J. 2019. “A Preliminary Identification of At-Risk Roadways Due to Elevated Groundwater from Sea Level Rise.” AASHTO GIS-T Symposium, Kissimmee, FL.
- Gilbrook, M.J. 2017. “Which Field Data Collection App Should I Use?” URISA GIS Pro 2017 Conference, Jacksonville, FL.
- Gilbrook, M.J. 2015. “Quantitative Methods for Measuring and Monitoring Sprawl in Florida.” American Planning Association Florida 2015 Conference, Hollywood, FL.
- Gilbrook, M.J. and J.W. Weishampel. 2015. A Method for Normalizing Classified Land Cover Imagery for Use in Change Detection Analysis. URISA Journal, Vol. 26, No. 2: 5 – 24.
- Gilbrook, M.J., S. Mallavaram, T. Casey, E. Dick and J. Van Kirk. 2015. “Modeling Rocket Launch Noise for Commercial Spaceports.” Esri User Conference 2015, San Diego, CA.

- Gilbrook, M.J. 2000. Using GIS to Rank Environmentally Sensitive Land in Orange County, Florida. In: Proceedings of Environmental Problem Solving with Geographic Information Systems Conference 1994 and 1999. US Environmental Protection Agency, Cincinnati, OH.
- Gilbrook, M.J. 1999. GIS Paves the Way. *Civil Engineering*, Vol. 69 (11): 34-39.
- Gilbrook, M.J. 1999. Scouting the Route of the Eisenhower Parkway Extension. In: ESRI 1999 User Conference Proceedings. Environmental Systems Research Institute, Redlands, CA.
- Gilbrook, M.J. 1998. On the Trail of the Appalachian Scenic Corridor: Using GIS to Find an East-West Route Across North Georgia. In: ESRI 1998 User Conference Proceedings. Environmental Systems Research Institute, Redlands, CA.
- Gilbrook, M.J. 1994. Foundation Elements: Land Use and Land Cover. In: May, J.W., P. Butler and D. Stage (eds.). *Summit '94 - A Conference on Developing a Comprehensive Land Information Program in Florida*. Florida Chapter of the Urban and Regional Systems Association, Tallahassee, FL. pp. 45-56.
- Gilbrook, M.J. 1993. The Regional Planning Council Role in the Development of GIS Planning Applications for Local Governments. In: J.W. May and T. Kutch (eds.), *Automated Mapping and GIS for Smaller Communities*. Florida Institute of Government, Tallahassee, Florida. pp. 39 - 52.
- Gilbrook, M.J. 1990. Potential Contributions of Regional Planning Council Geographic Information Systems to Manatee Management. In: J.E. Reynolds, III and K.D. Haddad (eds.), *Report of the Workshop on Geographic Information Systems as an Aid to Managing Habitat for West Indian Manatees for Florida and Georgia*. Florida Marine Research Publications Number 49. Florida Marine Research Institute, St. Petersburg, Florida. pp. 39 - 44.
- Gilbrook, M.J. 1989. Spatial and Size Distribution of Wetland Habitats in the East Central Florida Region. East Central Florida Regional Planning Council, Winter Park, Florida.
- Gilbrook, M.J. 1989. Marina Siting Suitability in the Coastal Estuaries of East Central Florida. FDER Coastal Zone Management Contract CZM-200. East Central Florida Regional Planning Council, Winter Park, Florida.
- Gilbrook, M.J. and P.K. Sheldon. 1987. Coping with Florida's New Growth Management Legislation: A First Time Application of a Geographic Information System. In: R. Sommers (ed.), *Building on the Past - Shaping the Future, Papers from the Annual Conference of the Urban and Regional Information Systems Association. Volume II: Geoprocessing & Geographic Information Systems*. Washington, D.C. p. 254 - 265.

- Wamer, N.O. and M.J. Gilbrook. 1983. Impacts of Relief Bridges at the Port Orange Causeway on the Hydrology and Water Quality of the Halifax River. Florida Department of Transportation, Bureau of Environment, Environmental Research FL-ER-28-83. DeLand, Florida. 200 pages.

Committees & Community Activities

- Faculty Senate Information Technology Committee
- Undergraduate GIS Minor Program, Coordinator
- Undergraduate GIS Certificate Program, Coordinator
- Undergraduate GIS Certificate Curriculum Committee, Chair
- Interdisciplinary Studies Curriculum Committee, Chair
- Graduate GIS Certificate Curriculum Committee, Member
- Environmental Studies Curriculum Committee, Member
- Genomics and Bioinformatics Minor Curriculum Committee, Member
- Orange County Sustainability Advisory Board, Member

Service Activities

- Commencement Grand Marshall, August 2024
- CUGS Graduation Medallion Ceremony, May 2023, May 2024 and December 2024
- OCPS 8th Grade Takeover Day “Surviving a Zombie Apocalypse” Presentation, March 2024
- Teacher Incentive Program 2023 Committee, Chair
- CUGS Assistant Dean Selection 2023-24 Committee, Member
- Environmental Studies\Sustainability Lecturer Selection 2023-24 Committee, Member
- Environmental Studies\GIS Instructor Selection 2023-24 Committee, Member
- CUGS Environmental Engagement Open House, August 2023
- CUGS Family Day Event “Surviving a Zombie Apocalypse” Presentation, September 2023

Professional Memberships

- American Planning Association
- Florida Planning & Zoning Association
- Urban and Regional Information Society of America
- Society of Conservation GIS