Patricia Spellman

Curriculum Vitae
October 2022

Assistant Professor
University of South Florida
Tampa, FL

Office: SCA 510 *Email: pdspellm@usf.edu*

analysis

University of Florida *M.S. Geology* *conditions and implications for carbonate weathering*

University of South Florida *B.S. Geology; Minor: Mathematics* 2005-2009

2. PROFESSIONAL APPOINTMENTS

Assistant Professor
School of Geosciences, University of South Florida 2019-Present

Post-Doctoral Researcher
Environmental Engineering Sciences, University of Florida 2017-2019

National Science Foundation GK12 Fellow 2013-2016

Graduate Research Assistant

- Stochastic hydrology
- Development and modification of models for hydrological systems
- Remote sensing techniques for water resource management
- Code/program development (MATLAB, Python)

4. GRANTS AND FUNDING

Most recent funding listed first.

FUNDED

TOTAL

6. Brown, A.L., Martin, J.B., Kamenov, G.D., Ezell, J.E., Screaton, E.J., Gulley, J. and **Spellman, P**., (2019). Trace metal cycling in karst aquifers subject to periodic river water intrusion. *Chemical Geology*, p.118773. *(IF: 3.62)*

7. **Spellman, P.**, Webster, V., Watkins, D. (2018) Bias correcting instantaneous peak flows generated from a continuous semi-distributed hydrological model. *Journal of Flood Risk Management.* DOI: 10.1111/jfr3.12342 *(IF: 3.24)*

8. Gulley, J. D., Martin, J. B., Moore, P. J., Brown, A., **Spellman, P.,** and Ezell, J. (2015) Heterogeneous distributions of CO_2 may be more important for dissolution and karstification in coastal eogenetic limestone than mixing dissolution. DOI: 10.1002/esp.3705. *Earth Surface Processes and Landforms*, v. 40: pp. 1057–1071. *(IF: 3.52)*

9. Brown, A. Martin, J. B., Screaton, Elizabeth, Ezell, J, **Spellman, P**., Gulley, J. D. (2014) Bank storage in karst aquifers: The impact of temporary intrusion of river water on carbonate dissolution and trace metal mobility. *Chemical Geology*, v. 385: pp. 56-69. *(IF: 3.24)*

10. Gulley, J. D., **Spellman, P.,** Covington, M. D., Martin, J. B., Benn, D. I. Catania, G. (2014) Large values of hydraulic roughness in subglacial conduits during conduit enlargement: Implications for modeling conduit evolution. *Earth Surface Processes and Landforms*, v. 39: pp. 296–310. *(IF: 3.52)*

11. Gulley, J. D., Martin, J. B., **Spellman, P**., Moore, P. J., Screaton, E. J. (2014) Influence of partial confinement and Holocene river formation on groundwater flow and dissolution in the Florida carbonate platform. DOI: 10.1002/esp.3447. *Hydrological Processes*, v. 28: pp. 705-717. *(IF: 3.19)*

12. LaFond, K., Griffis, V., **Spellman, P**. (2014) Forcing hydrologic models with GCM output: Bias correction vs. the "Delta Change" method. DOI: 10.1061/9780784413548.214. *World Environmental and Water Resources Congress*. pp. 2146-2155.

13. Martin J.B., Gulley J.D., **Spellman, P.** (2011) Tidal pumping of water between Bahamas

4. **Spellman, P.,** (2020b) Development of statistical models to quantify impacts of factors including climate and groundwater pumping on lower Withlacoochee River baseflow and Madison Blue springs. *Prepared for Suwannee River Water Management District*
5. **Spellman, P.**, (2020a) Farm-scale water budgets using the Soil and Water Assessment Tool. *Prepared for Suwannee River Water Management District*

6. PRESENTATIONS (23)

a. International Professional Meeting Presentations

† *Invited speaker, * Mentored student*

1. Stepchinski, L*., **Spellman, P**., Rains, M. Influence of hydrologic connectivity on thnp4 (lw 7.02.2 Td(.,

- **Ali Al-Quraishi** (2022) – Visiting from University of Florida

Ph.D.

- **Sunhye Kim** (2020-Present)
  - **Project:** Consequences of agriculture on water quality and quantity in the Floridan Aquifer System
- **Amy Pritt (**2022-Present)
  - Changes to hydraulic connectivity on San Salvador, Bahamas with implications on ecosystem services

M.S.

- **Natalie Salazar** (2021-Present)
  - **Project**: Causes of lake level variability on San Salvador Island, Bahamas
- **Mahnoor Kamal (**2021-Present)
  - **Project**: Spatial variability in water quality parameters at Peacock Springs in the Floridan Aquifer System: Implications for water quality interpretation and monitoring in karst aquifers

PSM Students

- **Vincent Carter** (Fall 2021)
  - Hydrogeology Internship
- **Stephen Smith** (Present)
  - Hydrogeology Internship

Previous students

- **Eric Kastelic** (2021-2022)
  - **Project**: Time series analysis of groundwater levels in the Upper Floridan Aquifer and consequences of extreme events
  - **Currently PhD student University of Wisconsin** - *Madison*

Committees Served

- *Esra Zengin* – M.S. (2021-Present)
- *Leanne Stepchinski* – Ph.D. (2020-Present)
- *Nick Soto-Kerans* – M.S. (Graduated 2021)
- *Charlie Breithaupt* – Ph.D. (Graduated 2020)
- *Quanghee Yi* – Ph.D. (Graduated 2020)

8. TEACHING

Environmental Hydrology (GEO3280)	Fall/Spring Sections
Numerical Modeling of Hydrological Systems (GLY6830)	Spring Section
Professional Hydrogeology Internship (GLY6492)	Fall/Spring Sections
L'Anse Middle School Student Teacher (GK12 Fellow)	2014-2016

Lab Instructor – Physical Geology 2010
Sanford Brown Technical College (Mathematics) 2009

9. SERVICE AND OUTREACH

Internal (USF)

- Graduate Committee
- Advisor for Professional Science Master degree (PSM)
- Divemaster aid for Scientific Diving (GLY4930)

External

- Committees
  - Spring Coast Committee (2022-Present)
  - Continuous monitoring dashboard for Florida Department of Environmental Protection (2021-Present)
  - Continuing **REEF** Survey Participant (diving)
- Reviewer
  - *Water*
  - *Nature*
  - *Journal of Hydrology*
  - *Journal of Hydrologic Engineering*
  - *Journal of American Water Resources Association*
  - *Remote Sensing of the Environment*
  - *Ecohydrology*

10. PROFESSIONAL AFFILIATIONS

- American Geophysical Union (AGU)
- Geological Society of America (GSA)
- National Speleological Society – Cave Diving Section (NSS-CDS)

11. PROFESSIONAL SKILLS

- SCUBA Diving (Full Cave (TDI) certified and Divemaster (PADI))
- Programming in MATLAB, Python (less so)
- GIS (ArcMap and QGIS)