

Sarra E. Hinshaw

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Research Interests

Effects of global climate change and anthropogenic impacts on biogeochemistry with emphasis in aquatic and terrestrial systems; greenhouse gases; soil and water resource management and remediation. Sustainability coordinator, environmental outreach and community engagement

Education

- 2008 Ph.D., Aquatic Biogeochemistry. Australian Rivers Institute, Griffith University, Australia. Advisors: Dr. Christine Fellows, Professor Stuart Bunn. Dissertation title: Denitrification and Greenhouse Gas Fluxes in Subtropical Riparian Zones
- 2003 Graduate Diploma, Marine Ecology. Research Centre of Ecological Impacts of Coastal Cities, University of Sydney, Australia. Advisors: Professor Tony Underwood, Dr. Gee Chapman, Dr. Richard Murphy. Thesis title: Variability at Different Temporal and Spatial Scales of Macrofaunal Assemblages Exposed to Stormwater Discharge.
- 2001 B.S., Marine Science/Biology, Coastal Carolina University

Research Experience

- 2015 - 2016 Postdoctoral Fellow, Dauphin Island Sea Lab, University of Alabama, Supervisor: Behzad Mortazavi. Funded by Gulf of Mexico Research Initiative RFP IV. Alabama Center for Ecological Resilience
- 2010 - 2012 Postdoctoral Fellow, Department of Land, Air and Water Resources, University of California, Davis, Supervisor: Randy Dahlgren. Funded by Bureau of Reclamation
- 2008 - 2009 Research Fellow, Australian Rivers Institute, Griffith University, Supervisor: Christine Fellows.

Work Experience

- 2023-Current Sustainability Manager, Kane County Government. Department of Environmental Science and Water Resources.
- 2022 - 2023 Assistant Professor of Environmental Science and Biology. Westminster College, MO. ENV 105A: Environmental Science, BIO 114/115 Biology, Processes, BIO 125: Biodiversity, NSC 108: Introduction to Biological Principles
- 2020 - 2022 STEM Facilitator and Environmental Science teacher, Ursuline Academy, New Orleans, LA; Loyola University of New Orleans. ENVA194: Environmental Science, CHEM 105-106: General Chemistry,

STEMLAB

- 2019 - 2020 Visiting Assistant Professor, Heidelberg University, Tiffin, OH. ENS 101: Environmental Science, ENS 334: Ecology, BIO 213: Field Biology, BIO 124, Biology II, BIO 313, Evolution
- 2019 Field Instructor, Wildlands Studies, Santa Cruz, CA. Curriculum development for ESCI 437A: Environmental Wildlands Studies, ESCI 437B: Environmental Field Survey and ESCI 437C: Wildlands Environment and Culture
- 2016 - 2019 Assistant Professor, New Mexico Highlands University, Las Vegas, NM. BIOL 110: Biological Perspectives, BIOL 211: General Biology I, BIOL 212: General Biology II, BIOL 425/525: Marine Biology, BIOL 620: Climate Impacts on Water Quality, BIOL 535: Global Climate Change and Sustainability, BIO 389: Ecology, FOR 535: Stream Methodology, BIO 650: Current Environmental Issues, BIOL 498: Independent Research, BIOL: 491: Senior Project
- 2012 - 2015 Lecturer, Concordia University, Chicago, IL. NSCI 1120: Concepts in Physics and Earth Science, CCHE 1210: Chemistry in Society, BIOL 2011: General Biology I, BIOL 2012: General Biology II

Grant Funding

2018	U.S. Department of Education, Minority Science and Engineering Improvement Program (MSEIP) Grant, Project Director. Grant award Number P120A160011.	\$721,437
2017	New Mexico Water Resources Research Institute Grant. Stream and Field Methodology Research and Teaching	\$2730
2011	University of California, Davis Postdoctoral Travel Grant	\$2000
2009	Griffith University Postdoctoral Research Grant (GUPF)	\$5000

Awards and Scholarships

2006	Ph.D. Scholarship, Griffith University	\$6000
2005	Griffith University Postgraduate Research Scholarship	\$6000
2005	Interdisciplinary Research Award, Australian Society for Limnology	

Publications

Hinshaw, S.E., Zhang, T., Harrison, J.A., Dahlgren, R.A. 2020. Excess N₂ and denitrification in hyporheic porewaters and groundwaters of the San Joaquin River, California. *Water Research*, 168, 115161. <https://doi.org/10.1016/j.watres.2019.115161>

Hinshaw, S. E., Tatariw, C., Flournoy, N., Kleinhuizen, A., Taylor, C., Sobecky, P., Mortazavi, B. 2017. Vegetation loss decreases salt marsh denitrification capacity. *Environmental Science and Technology*, 51 (15), pp 8245–8253

Hinshaw, S.E., Dahlgren, R.A. 2016. Nitrous oxide fluxes and dissolved N gases (N₂ and N₂O) within riparian zones from the agriculturally impacted San Joaquin River. *Nutrient Cycling in Agroecosystems*, 105 (2), 81-102

Hinshaw, S.E., Dahlgren, R.A. 2013. Dissolved nitrous oxide concentrations and fluxes from the eutrophic San Joaquin River, California. *Environmental Science and Technology*, 47 (3), 1312-1322

Palmer, A., Smoothey, A., Hinshaw, S. 2005. Book Review. Graeme D. Ruxton, Nick Colegrave, *Experimental Design for the Life Sciences*, Oxford University Press, Oxford, UK. *Journal of Experimental Marine Biology and Ecology* 314

Selected Conference Presentations

Hinshaw, S.E., Kleinhuizen, A., Rajan, S., Flournoy, N., Crawford, P., Sobecky, P.A., Mortazavi, B. 2016. Denitrification rates in Deepwater Horizon impacted salt marshes. Gulf of Mexico Oil Spill and Ecosystem Science Conference, Tampa, FL.

Hinshaw, S.E., Dahlgren, R.A. 2010. Spatial variability in groundwater N₂ and N₂O in the San Joaquin River. American Geophysical Union Fall Meeting 2010.

Hinshaw, S.E., Dahlgren, R.A., Harrison, J.A., Deemer, B., Kendall, C. 2010. Assessment of excess N₂ and groundwater N₂O in the San Joaquin River. Oral presentation at the 6th Biennial Bay-Delta Science Conference. Sacramento, California.

Hinshaw, S.E., Fellows, C.S. 2008. Denitrification potential and nitrous oxide production in subtropical stream sediments. Oral presentation at the 56th annual meeting of the North American Benthological Society meeting. Salt Lake City, Utah.

Hinshaw, S.E., Fellows, C.S. 2005. Denitrification and the ratio of N₂O:N₂ production within riparian zones. Poster presentation at the 44th annual meeting of the Australian Society for Limnology. Hobart, Tasmania, Australia.

Professional Committees

Greek life Advisor

Sustainability Committee

NMHU Retention Advisory Council

University Studies Major Subcommittee

Graduate Committee Member and Mentor

2016 - 2019 Victoria Aargon: Master's Research at New Mexico Highlands University in Biology: Determining the Effects on Arbuscular Mycorrhizae Fungi in North Eastern New Mexico Forest Soil Samples After Different Levels of Wildfire Severity Disturbance.

- 2017 - 2018 Lorraine Garcia: Master's Research at New Mexico Highlands University in Conservation Management: Seasonal Variations of Arsenic in Surface Water and Sediment in the Jemez Mountains, New Mexico.
- 2017 Larissa Padilla: Undergraduate Independent Research: Ecological Impacts of Restoration along the Gallinas River
- 2012 Diana Cabrera: Undergraduate Student Fellowship at University of California, Davis. Nitrogen Dynamics in the San Joaquin River. Role: Mentor funded by the Kearney Soil Foundation

Reviewer for Professional Grants and Journals

Proposal Reviewer: Maryland Sea Grant

Manuscript Reviewer: Atmospheric Environment, Environment and Pollution, Freshwater Science, Nutrient Cycling and Agroecosystems, Environmental Science and Technology, Global Biogeochemical Cycles, Limnology and Oceanography

Professional Societies

Sigma Xi, Scientific Research Society, American Geophysical Union, Society for Freshwater Science

Outreach and Service

- 2019-2022 Advisor for the Greenhouse Club and Zeta Theta Psi
- 2017-2018 Oral presentation judge in the New Mexico Math, Engineering, Science Achievement Inc., MESA, for middle and high school students at NMHU
- 2017 Volunteer for STEM Showdown at Mora Wildlife Refuge
- 2016 - 2017 Panelist for the STEM student initiative in science at New Mexico
- 2015 Volunteer for Dauphin Island Sea Lab Students in Science program