

Frances C. O'Donnell
Assistant Professor
Department of Civil Engineering
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Professional Preparation

Ph.D., Civil and Environmental Engineering, Princeton University, Princeton, NJ, 2013.

Focus area: Environmental Engineering and Water Resources.

Thesis: *An evaluation of spatial and temporal heterogeneities in the carbon and water cycles of savanna ecosystems.*

Advisor: Dr. Kelly Caylor.

B.A. *cum laude*, Organismic and Evolutionary Biology, Harvard University, Cambridge, MA, 2007. Thesis: *Carbon dynamics of a New England temperate forest five years after selective logging.* Advisor: Dr. Steven Wofsy.

Positions Held

Assistant Professor, Department of Civil Engineering, Auburn University, 2016-Present

Postdoctoral Scholar, School of Earth Sciences and Environmental Sustainability, Northern Arizona University, 2013-2016.

Advisor: Dr. Abe Springer.

Assistant in Research, Department of Civil and Environmental Engineering, Princeton University, 2007-2013.

Research Assistant, Department of Earth and Planetary Science, Harvard University, 2006-2007. Supervisor: Dr. Steven Wofsy.

Laboratory Assistant, Department of Organismic and Evolutionary Biology, Harvard University, 2004-2006. Supervisor: Dr. Rachel Spicer.

Research Experience for Undergraduates Program Participant, School of Forest Resources and Environmental Science, Michigan Technological University, Summer 2005. Supervisor: Dr. Linda Nagel.

Selected Publications

O'Donnell, F.C., K.K. Caylor, A. Bhattachan, K. Dintwe, P. D'Odorico, and G.S. Okin. (2015). A quantitative description of the species-level diversity of belowground structure in savanna woody plants. *Ecosphere* 6(9). DOI: 10.1890/ES14-00310.1

Robles, M.D., R.M. Marshall, **F. O'Donnell**, E.B. Smith, J.A. Haney, and D.F. Gori. (2014). Effects of Climate Variability and Accelerated Forest Thinning on Watershed-Scale Runoff in Southwestern USA Ponderosa Pine Forests. *PLoS ONE* 9(10): e111092. DOI:10.1371/journal.pone.0111092

Wyatt, C.J.W., **F.C. O'Donnell**, and A.E Springer (2014). Semi-arid aquifer responses to forest restoration treatments and climate change. *Groundwater* 53(2): 207-216. DOI: 10.1111/gwat.12184

O'Donnell, F.C., and K.K. Caylor (2012). A model-based evaluation of woody plant encroachment effects on coupled carbon and water cycles. *Journal of Geophysical Research: Biogeosciences* 117(G2). DOI: 10.1029/2011JG001899

King, E.G., **F.C. O'Donnell**, and K.K. Caylor (2012). Reframing hydrology education to solve coupled human and environmental problems. *Hydrology and Earth System Science* 9: 7739-7759. DOI: 10.5194/hess-16-4023-2012

Funded Research

Northern Arizona University Research Development Grant Program. "Planning for the Watershed Ecohydrology Institute." Co-Principal Investigator, \$1,500.

The Nature Conservancy, 2015. "Rio Grande Water Fund Area Runoff Modeling Study." Principal Investigator, \$5,000.

Coconino County, Arizona, 2015. "Ground Snow Load Case Study for Coconino County." Principal Investigator, \$29,035.

Bureau of Reclamation, WaterSMART Applied Science Grants for the Southern Rockies Landscape Conservation Cooperative, 2014-2016. "Linking forest landscape management and climate change to the conservation of riparian habitat in the Grand Canyon." Co-Investigator, \$96,535.

Bureau of Reclamation, WaterSMART Applied Science Grants for the Desert Landscape Conservation Cooperative, 2013-2015. "Predicting snow water equivalence (SWE) and soil moisture response to restoration treatments in headwater ponderosa pine forests of the Desert LCC." Project Manager, \$127,546.

Teaching Experience

Assistant in Instruction, Civil and Environmental Engineering 307: Field Ecohydrology, Mpala Research Centre, Nanyuki, Kenya. 2010 & 2013.

Assistant in Instruction, Civil and Environmental Engineering 303: Introduction to Environmental Engineering, Princeton University. 2011 & 2012.

Preceptor, Environmental Studies 201: Fundamentals of Environmental Studies, Princeton University. 2011 & 2012.

Assistant in Instruction, Civil and Environmental Engineering 306: Hydrology, Princeton University. 2008 & 2011.

Service and Membership

Reviewer for: *Journal of Geophysical Research: Biogeosciences* (2012 Editors' Citation for Excellence in Refereeing), *Water Resources Research*, *Ecology*, *Forest Ecology and Management*, *Biogeosciences*, *Journal of Arid Environments*.