

Drew Gower

St. Mary's College of Maryland
Department of Environmental Studies
114 Kent Hall
St. Mary's City, MD 20686

Mobile phone: 864.420.3318
Office phone: 240.895.2222
Email: dbgower@smcm.edu
Twitter: @DBGower

Education

Ph.D., Civil and Environmental Engineering, Princeton University, Princeton, NJ, Expected 2019.

M.S., Geology, University of Wisconsin - Madison, Madison, WI, 2009.

B.A., Major in Environmental Sciences (*with highest distinction*), Minor in Mathematics, University of Virginia, Charlottesville, VA, 2003.

Academic Appointment

St. Mary's College of Maryland, 2019–present.

Adjunct Professor, Department of Environmental Studies

Research fields: Water Resources Management, Food Security, Deforestation, Catchment Hydrology, Groundwater Hydrology

Teaching fields: Coupled Human and Natural Systems

Journal Articles

Giroux, S.A., P. McCord, S. Lopus, **D. Gower**, K.K. Caylor, & T.P. Evans (2019). Social-ecological determinants of commodity sharing as risk-reducing strategy in smallholder agroecosystems. *Manuscript submitted for publication*.

Waldman, K.B., S.Z. Attari, **D. Gower**, S.A. Giroux, & T.P. Evans (2018). Drivers of climate adaptation in semi-arid smallholder agroecosystems. *Manuscript submitted for publication*.

Zeng, Z., **D.B. Gower** & E.F. Wood (2018). Accelerating forest loss in Southeast Asian Massif in the 21st century: A case study in Nan Province, Thailand. *Global Change Biology*, *24*(10), 4682-4695. DOI: 10.1111/gcb.14366

Lopus, S., P. McCord, **D. Gower**, & T. Evans (2017). Drivers of Farmer Satisfaction with Small-Scale Irrigation Systems. *Applied Geography*, *89*, 77-86. DOI: 10.1016/j.apgeog.2017.10.004

McCord P., J. Dell'Angelo, **D.B. Gower**, K. Caylor, & T. Evans, (2017). Household-level heterogeneity of water resources within common pool resource systems. *Ecology and Society*, *22*(1):48. DOI: 10.5751/ES-09156-220148

Gower, D. B., J. Dell'Angelo, P.F. McCord, K.K. Caylor, & T.P. Evans (2016). Modeling ecohydrological dynamics of smallholder strategies for food production in dryland agricultural systems. *Environmental Research Letters*, *11*(11), 115005. DOI: 10.1088/1748-9326/11/11/115005

Dell'Angelo, J., P.F. McCord, **D. Gower**, S. Carpenter, K.K. Caylor, & T.P. Evans (2016). Community-based Water Governance on Mount Kenya: An Assessment Based on Ostrom's Design Principles of Natural Resource Management. *Mountain Research and Development*, 36(1), 102-116. DOI: 10.1659/MRD-JOURNAL-D-15-00040.1

Levy, M. C., M. Garcia, P. Blair, X. Chen, S.L. Gomes, **D.B. Gower**, J. Grames, L. Kuil, Y. Liu, L. Marston, P.F. McCord, M. Roobanannan, & R. Zeng (2016). Wicked but worth it: student perspectives on socio-hydrology. *Hydrological Processes*, 30(9), 1467-1472. DOI: 10.1002/hyp.10791

McCauley, D.J., T.E. Dawson, M.E. Power, J.C. Finlay, M. Ogada, **D.B. Gower**, K. Caylor, W.D. Nyingi, J.M. Githaiga, J. Nyunja, F.H. Joyce, R.L. Lewison, & J.S. Brashares (2015). Carbon stable isotopes suggest that hippopotamus-vectored nutrients subsidize aquatic consumers in an East African river. *Ecosphere*, 6(4): 52. DOI: 10.1890/ES14-00514.1

Saiers, J.E., G.M. Hornberger, **D.B. Gower**, & J.S. Herman (2003). The role of moving air-water interfaces in colloid mobilization within the vadose zone. *Geophysical Research Letters*, 30(21), 2083. doi:10.1029/2003GL018418

Book Chapters

Dell'Angelo, J., P. F. McCord, E. Baldwin, M.E. Cox, **D. Gower**, K. Caylor, & T.P. Evans (2014). Multilevel Governance of Irrigation Systems and Adaptation to Climate Change in Kenya. In *The Global Water System in the Anthropocene* Eds. A. Bhaduri, J. Bogardi, J. Leentvaar, & S. Marx. Springer Water. Springer, Cham. DOI: 10.1007/978-3-319-07548-8_21

Unpublished Work

Gower, D.B. (2009). Reservoir seepage to groundwater in the Nariarlé watershed of Burkina Faso, West Africa (Master's Thesis). University of Wisconsin, Madison, WI.

Gower, D.B. (2003). Air bubble enhanced colloid mobilization in an unsaturated porous medium (Undergraduate Thesis). University of Virginia, Charlottesville, VA.

Conference Presentations

2017 American Geophysical Union Fall Meeting, New Orleans, LA. (December 15, 2017). Determinants of recent forest loss in northern Thailand. (with Z. Zeng, E. Wood, and K. Caylor)

7th annual Interdisciplinary Ph.D. Workshop in Sustainable Development, New York, NY. (April 22, 2017). Forecasting the impact of climate change on community water project growth and household food security in Laikipia, Kenya.

2016 American Geophysical Union Fall Meeting, San Francisco, CA. (December 14, 2016). An ecohydrologic framework for simulating catchment constraints on smallholder irrigation systems in drylands (poster). (with P.F. McCord, K. Caylor, J. Dell'Angelo, and T.P. Evans)

2016 Association of American Geographers Annual Meeting, San Francisco, CA. (March 30, 2016). An ecohydrological framework for modeling smallholder irrigation systems in drylands.

2015 American Geophysical Union Fall Meeting, San Francisco, CA. (December 14, 2015). Modeling the impacts of regulatory frameworks on self-organization in dryland agricultural systems (poster). (with K. Caylor, P.F. McCord, and T.P. Evans)

2015 International Union of Geodesy and Geophysics Meeting, Prague, Czech Republic. (June 25, 2015). An ecohydrological framework for modeling stream-fed irrigation in dryland environments (poster). (with K. Caylor)

2008 Geological Society of America Annual Meeting, Houston, TX. (October 7, 2008). Reservoir contribution to groundwater flowpaths in the Nariarlé watershed of Burkina Faso.

2002 International Workshop on Colloids and Colloid-Facilitated Transport of Contaminants in Soils and Sediments, Viborg, Denmark. (September 2002). Air Bubble Enhanced Colloid Mobilization in an Unsaturated Porous Medium (poster). (with J.E. Saiers, J.J. Lenhart, and G.M. Hornberger)

Teaching

St. Mary's College of Maryland

Instructor, *Dynamics of Coupled Human and Natural Systems (ENST 395)*, Spring 2019

Princeton University

Assistant in Instruction, *Fundamentals of Environmental Studies (ENV 201)*, Fall 2013

University of Wisconsin - Madison

Teaching Assistant, *Introduction to Geology (Geology 101)*, Spring 2007

Academic Exchanges

Visiting student, Soil and Water Lab, Cornell University (Duration: August 2016 – May, 2017; Supervisor: Professor Todd Walter)

Visiting researcher, Stockholm Resilience Center, Stockholm University (Duration: October 26 – October 30, 2016; Collaborator: Professor Maja Schlüter)

Other Academic & Professional Experience

Program Specialist, Middle East Section, U.S. Forest Service Office of International Programs, 2009–2012

Peace Corps Volunteer, Burkina Faso, 2003–2005

Research Assistant, Department of Environmental Sciences, University of Virginia, 2001–2002

Grants & Fellowships

Science to Achieve Results (STAR) Fellowship, Environmental Protection Agency (2014)

Francis Robbins Upton Fellowship in Engineering, Princeton University (2012)

Grant-in-Aid of Research, Sigma Xi (2007)

Graduate Student Research Grant, Geological Society of America (2007)

Weeks Research Assistantship, University of Wisconsin - Madison (2006)

Harrison Undergraduate Research Award, University of Virginia (2002)

Morris K. Udall Scholarship, Morris K. Udall and Stewart L. Udall Foundation (2002)

Awards

James J. and Dorothy T. Hanks Award in Geophysics, University of Wisconsin (2008)

Undergraduate Hydrology Award, University of Virginia (2003)

Academic Service

Member

American Geophysical Union (AGU), American Water Resources Association (AWRA), and Chesapeake Bay Foundation (CBF)

Conference Session Organizer

New insights, approaches and challenges in the field of socio-hydrology, Association of American Geographers Annual Meeting, March 2016. (with P.F. McCord)

New approaches to coupling human and water dynamics, Association of American Geographers Annual Meeting, April 2015. (with P.F. McCord)

Reviewer

PLOS One, Land Use Policy, International Journal of Disaster Risk Reduction, Mountain Research and Development, and African Geographical Review.

Skills

Languages: Proficient French (oral and written)

Software: Microsoft Office, LaTeX, ArcGIS/QGIS, Linux, SQL, Python, R, MATLAB, MODFLOW

Fieldwork: River monitoring, Aquifer testing, Groundwater sampling, Community surveying