

KRISTINA G. HOPKINS

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RESEARCH INTERESTS

Characterizing regional variability and the drivers of water quality/quantity changes in aquatic ecosystems as watersheds undergo land cover or land use changes.

Assessing the effectiveness of stormwater management practices (conventional and green infrastructure) to reduce the water quality/quantity impacts of development.

EDUCATION

- 2014 **Ph.D.** Geology and Planetary Science (Hydrology Focus), University of Pittsburgh, Pittsburgh, PA.
Dissertation: From small watersheds to regions: Variation in hydrologic response to urbanization.
Advisor: Dr. Daniel Bain
- 2007 **B.S.** Biology/Environmental Science (2nd Major: Geography) Syracuse University, Syracuse, NY
Thesis: Regulating herbivore communities in Serengeti National Park: A local evaluation of precipitation and soils. Advisors: Dr. Mark Ritchie and Dr. Jacob Bendix
Study Abroad: School for Field Studies, Tropical Rainforest Ecology Program, Queensland, Australia, Spring 2006.

APPOINTMENTS

- 2014 - Present **Postdoctoral Fellowship.** National Socio-Environmental Synthesis Center, University of Maryland, Annapolis, MD. Research mentors: Nancy Grimm and Abigail York.
- 2010 - 2014 **Graduate Research Assistant.** Department of Geology and Planetary Sciences, University of Pittsburgh, Pittsburgh, PA. Research advisor: Daniel Bain.
- 2012 - 2013 **Co-Graduate Student Leader.** Urban Aquatics Working Group Pilot Project, Long Term Ecological Research Network Office. Workshop leader: Nancy Grimm
- 2011 - 2013 **Summer Research Fellow.** Pittsburgh Parks Conservancy, Panther Hollow Watershed Restoration Project, Pittsburgh, PA.
- 2007 - 2010 **Environmental Management Fellow.** Fostering Stewardship Team, Chesapeake Research Consortium, EPA Chesapeake Bay Program Office, Annapolis, MD.
- 2005 - 2007 **Research Assistant.** Department of Biology, Syracuse University, Syracuse, NY. September 2005 - May 2007.

PEER REVIEWED PUBLICATIONS

- Utz, R.M., **K.G. Hopkins**, L. Beesley, D.B. Booth, R.J. Hawley, M.E. Baker, M.C. Freeman, K.L. Jones. 2016. Ecological resistance in urban streams: the role of natural and legacy attributes. In press *Freshwater Science*.

- Hopkins K.G.**, N.B. Morse, D.J. Bain, N.D. Bettez, N.B. Grimm, J.L. Morse, M.M. Palta, W.D. Shuster, A.R. Bratt, A.K. Suchy. 2015. Assessment of variation in stream flow responses to urbanization and the persistence of physiography. *Environmental Science and Technology*, 49 (5) pp. 2724-2732.
- Hopkins K.G.**, N.B. Morse, D.J. Bain, N.D. Bettez, N.B. Grimm, J.L. Morse, M.M. Palta. 2015. Type and timing of stream flow changes in urbanizing watersheds in the Eastern U.S. *Elementa: Science of the Anthropocene*, 3 (56) pp. 1-14.
- Hopkins, K.**, D.J. Bain, and E.M. Copeland. 2014. Reconstruction of a century of landscape modification and hydrologic change in a small urban watershed in Pittsburgh, PA. *Landscape Ecology*, 29 (3) pp. 413 – 424.
- D.J. Bain, E. Copeland, M. Divers, M. Hecht, **K. Hopkins**, J. Hynicka, M. Koryak, M. Kostalos, L. Brown, E. Elliott, J. Fedor, M. Gregorich, B. Porter, B. Smith, C. Tracey, M. Zak. 2014. Characterizing a Major Urban Stream Restoration Project: Nine Mile Run (Pittsburgh, PA, USA). *Journal of the American Water Resources Association*, 50 (6) pp. 1608-1621.
- Curren, T.J., R. Brown, E. Edwards, **K. Hopkins**, C. Kelley, E. McCarthy, E. Pounds, R. Solan, and J. Wolf. 2008. Plant functional traits explain interspecific differences in immediate cyclone damage to trees of an endangered rainforest community in north Queensland. *Austral Ecology*, 33 (3) pp. 451 – 461.

GRANTS & FELLOWSHIPS

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| 2014 - 2016 | National Socio-Environmental Synthesis Center (SESYNC) Postdoctoral Fellowship: Replumbing Cities: Socio-Environmental Controls on Stormwater Management Processes. \$117,000. PI: Kristina Hopkins; Co-Mentors: Nancy Grimm and Abigail York. |
| 2013 | International Network of Research on Coupled Human Natural Systems (CHANS-Net) Fellowship/Travel Grant. \$1,200. |
| 2013 | Decagon Devices Grant A. Harris Research Instrumentation Fellowship. \$5,000. |
| 2012 | Department of Geology and Planetary Sciences, University of Pittsburgh Henry Leighton Memorial Scholarship \$1,000. |
| 2011 | FES-GCOE of Hokkaido University, Hokkaido, Japan & International Long-Term Ecological Research Network (I-LTER) International Summer School Travel Grant. Summer School Theme: Understanding coupled natural and social system: Feedback loops between land-use and ecosystem change. Full travel support to Hokkaido, Japan. |

AWARDS

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| 2007 | Donald G. Lundgren Memorial Award for Outstanding Scholarship and Research in Biology. Department of Biology, Syracuse University. |
| 2007 | Preston E. James Award for Excellence in Geography. Department of Geography, Syracuse University. |

TEACHING EXPERIENCE

- 2013 - 2014 **Science Fellow and Teacher.** Energy, Environment, and Society Learning Network After School Program for High School Students, University of Pittsburgh and the Carnegie Museum of Natural History, Pittsburgh, PA.
- 2013 **Teaching Assistant.** Three E's of Water Summer Mini Course, University of Pittsburgh and Carnegie Mellon University, Pittsburgh, PA.
- 2012 **Teaching Assistant.** Groundwater Geology, University of Pittsburgh, Pittsburgh, PA.
- 2011 **Teaching Assistant.** Environmental Geology, University of Pittsburgh, Pittsburgh, PA.
- 2011 **Teaching Assistant.** Introduction to Geology, University of Pittsburgh, Pittsburgh, PA.
- 2006 - 2007 **Environmental Educator.** CentroNia Bilingual Charter School, Washington, DC.

PRESENTATIONS

- 2015 **Hopkins, K.G.,** N.B. Morse, D.J. Bain, N.D. Bettez, N.B. Grimm, J.L. Morse, M.M. Palta. Urban growth trajectories as a window into understanding hydrologic changes. Oral presentation at the *American Geophysical Union Annual Meeting* in San Francisco, CA, December 2015. [Invited]
- Hopkins, K.G.,** A. York, N. Grimm. What planning documents indicate about shifting approaches to water management in U.S. cities. Oral presentation at the *Geological Society of American Annual Meeting* in Baltimore, MD, November 2015.
- Hopkins, K.G.,** N.B. Morse, D.J. Bain, N.D. Bettez, N.B. Grimm, J.L. Morse, M.M. Palta. Type and timing of stream flow changes in urbanizing watersheds. Poster presentation at the *Baltimore Ecosystem Study Annual Meeting* in Baltimore, MD, October 2015.
- Hopkins, K.G.,** A. York, N. Grimm. Stormwater governance as a framework to investigate urban drainage infrastructure transitions. Poster presentation at the *Long Term Ecological Research Network All Scientists Meeting* in Estes Park, CO, September 2015.
- Hopkins, K.G.,** A. York, N. Grimm. Replumbing cities from gray to green: Exploring controls on stormwater infrastructure transitions. Oral presentation at the *Ecological Society of America Annual Meeting* in Baltimore, MD, August 2015.
- Hopkins, K.G.** Closing the water loop: How the three R's could save you money on your water bill. Public presentation at the *SESYNC Café Scientifique* in Annapolis, MD, June 2015.
- Hopkins, K.G.** Gray to green approaches: Exploring controls on stormwater infrastructure transitions. Invited seminar at *National Socio-Environmental Synthesis Center* in Annapolis, MD, March 2015. [Invited]
- Hopkins, K.G.** From small watersheds to regions: Variation in hydrologic response to urbanization. Invited seminar at *University of Maryland Baltimore County Center for Urban Environmental Research and Education* in Baltimore, MD, February, 2015. [Invited]
- Hopkins, K.G.,** N.B. Morse, D.J. Bain, N.D. Bettez, N.B. Grimm, J.L. Morse, M.M. Palta. Characterizing hydrologic alterations following urbanization using gradient and long-term approaches. Poster presentation at the *17th Annual Central Arizona Phoenix LTER All Scientists Meeting* in Tempe, AZ, January, 2015.

- 2014 **Hopkins, K.G.**, N. Morse, D. Bain, N. Bettez, N. Grimm, J.L. Morse, and M. Palta. Cross-city comparison of hydrologic alterations and variation in nutrient flux following urbanization. Invited presentation at the *Joint Aquatic Sciences Meeting* in Portland, OR, May 2014. [Invited]
- Hopkins, K.G.** From small watersheds to regions: Variation in hydrologic response to urbanization. Seminar at *Geology and Planetary Science Colloquium* in Pittsburgh, PA, March 2014.
- 2013 **Hopkins, K.G.**, N. Morse, D. Bain, N. Bettez, N. Grimm, J.L. Morse, and M. Palta. Characterizing hydrologic change following urbanization through time and across space among U.S. cities (PS 43-100). Poster presentation at the *Ecological Society of America Annual Meeting* in Minneapolis, MN, August 2013.
- Copeland, E., **K.G. Hopkins**, and D. Bain. Restoring the Panther Hollow watershed with green infrastructure. Poster presentation at the *Pittsburgh Green Infrastructure Network* in Pittsburgh, PA, June 2013.
- 2012 **Hopkins, K.G.**, D. Bain, Sewer construction, decay, and stream burial: Implications for urban ecosystems (COS 71-10). Oral presentation at the *Ecological Society of America Annual Meeting* in Portland, OR, August 2012.
- 2011 **Hopkins, K.G.**, D. Bain, Rerouting Urban Waters: A Historic Examination of the Age of Imperviousness (H52F-04). Oral presentation at the *American Geophysical Union Annual Meeting* in San Francisco, CA, December 2011.
- Hopkins, K.G.**, D. Bain, Complicated Urban Hydrology in Four Mile: Urban Contributor to the Mon. Oral presentation at the *State of the Monongahela River* in Pittsburgh, PA, November 2011.
- Hopkins, K.G.**, D. Bain, Prioritizing Restoration in a Degraded Landscape: The Upland verses the Valley. Poster presentation at the *GCOE-INeT International Summer School* at Hokkaido University in Sapporo, Japan, June-July 2011.
- Hopkins, K.G.**, D. Bain, Water Flow in Schenley Park. Public Lunch Seminar Series for *Pittsburgh Parks Conservancy* in Pittsburgh, PA, April 2011. [Invited]
- Hopkins, K.G.**, D. Bain, Urban Catchment Response to Stormwater Re-Routing. Oral presentation at *Geologic Society of America Northeastern / North-Central Joint Meeting* in Pittsburgh, PA, March 2011.
- Hopkins, K.G.**, D. Bain, Modeling Approaches to Assess Stormwater Re-Routing. Poster presentation at *National Green Infrastructure Conference* in Shepherdstown, WV, February 2011.
- 2010 **Hopkins, K.G.**, D. Bain, Comparative Life Cycle Analysis of Two Stormwater Controls: Street Tree vs. Rain Barrel. Poster presentation at *Baltimore Ecosystem Study Annual Meeting* in Baltimore, MD, October 2010.

STUDENTS MENTORED (n=12)

- 2015 Alisha Chan. SESYNC Summer Internship Program, University of Maryland.
- 2013 - 2014 Lauren Bakale, Rebekah Dempsey, Lindsay Hagerty, Nadin Suler, and Cameron Tabatabaie. Energy-Net Environmental Interns, Department of Geology and Planetary Science, University of Pittsburgh.
- 2012 Rylee Kercher. Brackenridge Summer Research Fellowship, Honors College, University of Pittsburgh.
- Trevor Bublitz and Bruk Berhanu. Undergraduate Research in Sustainable Engineering, Mascaro Center for Sustainable Innovation, University of Pittsburgh.
- 2011 - 2012 Kristen Fenati. Independent GIS Project, Department of Geology and Planetary Science, University of Pittsburgh.
- 2010 Ethan Boyle and Morgan Snyder. First Experiences in Research, Department of Geology and Planetary Science, University of Pittsburgh.

PROFESSIONAL DEVELOPMENT

- 2015 Bayesian Modeling for Ecological & Social Scientists. Nine-day short course offered at the National Socio-Environmental Synthesis Center, University of Maryland.
- Computational Summer Institute. Three-day short course offered at the National Socio-Environmental Synthesis Center, University of Maryland.
- Science Writing Workshop: How to Write Papers That Get Cited and Proposals That Get Funded. Two-day short course by Joshua Schimel offered at the National Socio-Environmental Synthesis Center, University of Maryland.

SERVICE

- 2015 Reviewer and Panelist. National Science Foundation.
Reviewer and Panelist. National Socio-Environmental Synthesis Center, Postdoctoral Fellowship Program.
Reviewer. Chesapeake Bay Trust, Outreach and Restoration Grant Program.
- 2014 Volunteer Judge. Pittsburgh Regional Science and Engineering Fair.
- 2010 - 2014 Member. Pittsburgh Green Infrastructure Network.
Volunteer. Pittsburgh Parks Conservancy and Nine Mile Run Watershed Association.

PROFESSIONAL MEMBERSHIPS

Geological Society of America
American Geophysical Union
Ecological Society of America
Earth Science Women's Network