

GASTON E. SMALL

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Education

University of Georgia: Ph.D. Ecology, May 2010. Advisor: C. M. Pringle
University of North Carolina, Chapel Hill. M.A. in Teaching (Science Education), 2002.
North Carolina State University: B.S. Environmental Science (Suma Cum Laude), 2001.
B.A. English (Suma Cum Laude), 2001.
Minor, Outdoor Leadership

Fellowships and Awards

Postdoctoral Fellowship, Cooperative Institute for Limnology and Ecosystems Research
2011 Education Scholar, Ecological Society of America
2011 Excellence in Research Award by Graduate Students in Life Sciences, UGA
EPA Science to Achieve Results (STAR) Graduate Fellow 2007-2010
Presidential Fellowship, University of Georgia Graduate School
Best Student Paper, 2010 UGA Ecology Graduate Research Symposium
Best Oral Presentation in Basic Research (Runner-up), 2009 North American
Benthological Society Meeting
Best Student Paper (Runner-up), 2008 UGA Ecology Graduate Research Symposium
ASLO Early Career Travel Award, 2010
Odum School of Ecology Travel Award, 2009, University of Georgia
Emerging Leaders Program, 2007, University of Georgia Graduate School
Post-Course Research Award, Organization for Tropical Studies
North American Benthological Society Endowment Award 2007

Professional Experience

Postdoctoral Researcher, Department of Ecology, Evolution, and Behavior;
University of Minnesota, May 2010-present. Measured rates and controls of
carbon and nitrogen transformations in Lake Superior.

Research Assistant with Dr. Catherine Pringle, Odum School of Ecology; University
of Georgia. 2005-2010. Coordinated long-term stream research program at La

Selva Biological Station, Costa Rica.

Research Assistant with Dr. Jim Gilliam, Department of Biology; NC State University. Summer 2002, 2003. Conducted field study of effects of predator chemical cues on mosquito oviposition in Trinidad.

Teaching Experience

Macalester College:

Visiting Assistant Professor, *Lakes, Rivers, and Streams* (Fall 2011)

University of Minnesota:

Guest Lecturer, *Science, Protection, and Management of Aquatic Environments* (Fall 2010)

University of Georgia:

Co-instructor, *Ecosystem Ecology* (Spring 2009)

Teaching Assistant and Guest Lecturer, *Limnology* (Fall 2008, 2009)

Guest Lecturer, *Introduction to Ecology* (Summer 2008)

Teaching Assistant, *Topics in Modern Ecology* (Fall 2005)

Organization for Tropical Studies:

Mentor, Research Experience for Undergraduates Program (Summer 2006, 2007)

North Carolina Museum of Natural Sciences:

Instructor, *Piedmont Field Ecology* (Summer 2004)

Broughton High School, Raleigh, NC:

Instructor, A.P. *Environmental Science, Chemistry, and Earth Science* (2002-2004)

Southern High School, Durham, NC:

Intern, *Chemistry, Earth Science, and Geology* (2001-2002)

Duke University TIP Program:

Teaching Assistant, *Appalachian Field Ecology and Geology* (Summer 2002)

Teaching Assistant, *Ecology and Geology of the Northern Rockies* (Summer 2000)

University of North Carolina, Chapel Hill:

Teaching Assistant, *Introductory Biology* (Fall 2001)

North Carolina State University:

Teaching Assistant, *Evolution, Behavior, and Ecology* (Spring 2000, 2001)

The Green River Preserve, Cedar Mountain, NC:

Environmental educator and expedition leader (Summer 1998, 1999, 2001)

Invited Lectures

- 2012 Kent State University, Kent, OH
Colby College, Waterville, ME
- 2011 Keene State College, Keene, NH
- 2010 Lake Superior Winter Gala, St. Paul, MN
Diversity, Evolution, and Genetics Seminar Series, UGA
- 2008 Gordon Research Seminar, Metabolic Basis of Ecology
- 2006, 2007 La Selva Biological Station, Costa Rica

Awarded Grants

- 2011-2016: Emergent landscape patterns in stream ecosystem processes resulting from groundwater/surface water interactions. (\$449,491) National Science Foundation, DEB-Ecosystems. PI: C.M. Pringle (University of Georgia). *GES had primary role in writing the grant.
- 2012-2014: Landscape regulators of biogeochemical pattern and process in the Saint Louis River Estuary. (\$189,877) MN/WI Sea Grant. PIs: J.C. Finlay (UMN), R.W. Sterner (UMN), E. Stanley (University of Wisconsin, Madison) *GES had primary role in writing the grant.

Peer-Reviewed Publications

- Small, G.E.**, R. Bixby, C. Kazanci, and C.M. Pringle. 2011. Partitioning stoichiometric components of epilithic biofilm using mixing models. *Limnology & Oceanography: Methods* 9: 185-193.
- Davis, J., A.D. Rosemond, and **G.E. Small**. 2011. Increasing donor ecosystem productivity decreases terrestrial consumer reliance on a stream resource subsidy. *Oecologia* DOI: 10.1007/s00442-011-2026-9.
- Small, G. E.**, M. Pyron, J. H. Duff, and C. M. Pringle. 2011. Emergent role of the fish, *Astyanax aeneus* (Characidae), as a Keystone Nutrient Recycler in low-nutrient Neotropical streams, Costa Rica. *Ecology* 92: 386-397.
- Small, G.E.**, J. P. Wares, and C. M. Pringle. 2011. Phosphorus limitation by a fast-growing detritivore across natural- and experimental P-gradients: evidence for adaptation to local conditions. *Limnology & Oceanography* 56: 268-278.
- Small, G. E.** and C. M. Pringle. 2010. Deviation from strict homeostasis across multiple trophic levels in an invertebrate consumer assemblage exposed to high chronic phosphorus enrichment in a Neotropical stream. *Oecologia* 162: 581-590.

Small, G. E., A. M. Helton, and C. Kazanci. 2009. Can consumer stoichiometric regulation control nutrient spiraling in streams? *Journal of the North American Benthological Society* 28: 747-764.

Small, G. E., C. M. Pringle, F. J. Triska, J. H. Duff, A. P. Jackman, M. Hidalgo, A. Ramírez, and M. Ardón. 2008. The dynamics of phosphorus retention during an eight-year P-addition in a Neotropical headwater stream. *Verhandlungen Internationale Vereinigung für theoretische und angewandte Limnologie* 30:551-554.

Publications (submitted or in advanced manuscript stage)

Sun, X., X. Zhou, H. Kang, R. Sterner, **G.E. Small**, and C. Liu. Homeostasis in insects across a climate gradient. *Submitted*.

Small, G.E., M. Ardón, J. H. Duff, A. P. Jackman, F. J. Triska, A. Ramírez, M. Snyder, and C. M. Pringle. Episodic acidification of Neotropical streams linked to inter-annual variation in seasonal rainfall. *Submitted*.

Small, G.E., P. J. Torres, L. M. Schweizer, J. H. Duff, and C.M. Pringle. Are terrestrial insects an important nutrient subsidy in Neotropical headwater streams? *Submitted*.

Ardón, M, J.H. Duff, A. Ramírez, **G.E. Small**, A. Jackman, F. Triska, and C.M. Pringle. Experimental acidification of two neotropical streams illustrates the biogeochemical and ecological consequences of episodic acidification. *In revision*.

Small, G. E., H. Baulch, H. Bechtold, K. Holzer, S. Newell, and R. Vaquer. Headwaters to estuaries: Complex responses to cultural eutrophication at the watershed scale. *Submitted*.

Small, G. E., E. Mayorga, M. Ardón, E. Ellis, D. P. Genereux, P. J. Hernes, M. S. Johnson, C. M. Pringle, R. G. M. Spencer, and A. Townsend-Small. Human impacts on carbon transport and processing in tropical rivers: Current understanding and knowledge gaps. *In revision*.

Small, G.E., J.H. Duff, P.J. Torres, and C.M. Pringle. Insect emergence as a nitrogen sink in headwater streams. *In prep*.

Small, G.E., M. Ardón, J.H. Duff, A.P. Jackman, C.M. Pringle, A. Ramírez, F.J. Triska. Phosphorus retention in a lowland neotropical stream following an eight-year phosphorus enrichment experiment. *In prep*.

Small, G.E., G.S. Bullerjahn, J.C. Finlay, R.M.L. McKay, M. Mukherjee, R.W. Sterner.

High areal nitrification rates in Lake Superior. *In prep.*

Other Publications

Small, G.E. 2011. Time to Tweet. *Nature* 479: 141.

Sterner, R.W., **G.E. Small**, and J. Hood. 2011. The conservation of mass. *Nature Education Knowledge* 2:11.

Riskin, S. H., **G.E. Small**, R. Mikkelsen, A. Bateman, J. Cooper, O. S. Hanserud, P. Haygarth, C. Lapoumadares, M. McCrackin, G. Metson, and S. Remington. In press. Managing phosphorus in urban and agricultural landscapes. *In*: K. Wyant, J. Corman, and J. Elser (eds.) Phosphorus, Food, and Our Future. Oxford University Press.

Pringle, C. M., E. Anderson, M. Ardon, R. Bixby, A. Ramirez, **G. E. Small**, and M. Snyder. In press. The Riverine Ecosystems. *In*: M. Kaapelle and L. Diego Gomez (eds.) Ecosystems of Costa Rica. University of Chicago Press.

Presentations (17 at national and international scientific meetings since 2006)

International Association of Great Lakes Research, Duluth, MN. June 2011.

American Society of Limnology and Oceanography (ASLO), San Juan, Puerto Rico. February 2011.

Sustainable Phosphorus Summit, Arizona State University. February 2011.

Ecological Dissertations in the Aquatic Sciences (Eco-DAS IX), Honolulu, HA. October 2010.

Ecological Society of America (ESA), Pittsburgh, PA. August 2010.

Gordon Research Conference on the Metabolic Basis of Ecology. Biddeford, ME. July 2010. Poster presentation.

American Society of Limnology and Oceanography (ASLO)/North American Benthological Society (NABS), Santa Fe, NM. June 2010.

Ecological Society of America (ESA), Albuquerque, NM. August 2009.

North American Benthological Society (NABS), Grand Rapids, MI. June 2009.
Runner-up, best student paper in basic research.

Gordon Research Conference on the Metabolic Basis of Ecology. Biddeford, ME. July 2008.

Ecological Networks Conference, Athens GA. March 2008. Poster presentation.

North American Benthological Society (NABS), Salt Lake City, UT. June 2008.

International Association of Theoretical and Applied Limnology (SIL). Montreal, Canada. August 2007.

North American Benthological Society (NABS), Columbia, SC. June 2007.

Organization for Tropical Studies Forest Changes Workshop. La Selva Biological Station, Costa Rica. April 2007.

American Society of Limnology and Oceanography (ASLO), Santa Fe, NM. February 2007.

North American Benthological Society (NABS), Anchorage, AK. June 2006.

Membership in Professional Societies

American Society of Limnology and Oceanography
Ecological Society of America
International Association of Great Lakes Research
North American Benthological Society

Professional Service

Reviewer for journals: *American Midland Naturalist*, *Biogeochemistry*, *Biogeosciences*, *Ecology Letters*, *Ecological Modelling*, *Ecosphere*, *Functional Ecology*, *Global Biogeochemical Cycles*, *Journal of Hydrology*, *Journal of the North American Benthological Society*, *Limnology & Oceanography*, *Nature Knowledge*, *Oikos*.

2011. Contributing Editor for *Eco-Ed Digital Library*.

2011. Careers columnist for *Nature*.

2011. Co-organizer of special session at ASLO Aquatic Sciences Meeting: "Effects of Global Change on Carbon Transport and Processing in Tropical Freshwater Ecosystems"

2011. Served on Science Committee for NSF-RCN, "Changes in Tropical Forests", Organization for Tropical Studies.
2010. Co-organizer of NSF-RCN funded workshop: "Carbon Transport and Processing in Tropical Streams and Rivers"
2009. Co-organizer of special session at annual meeting of Ecological Society of America: "Alternate Ecology: An Exploration of Ecological Counterfactuals"
2008. Mentor-student relations committee co-chair, North American Benthological Society.
2008. Co-chair, Graduate Student Symposium, Odum School of Ecology.
2007. Organized graduate student workshop at annual meeting of the North American Benthological Society: "Maintaining Ecosystem Services in an Urbanizing Watershed."
- 2006-2007. Graduate student representative to Institute of Ecology faculty. Served on search committee for director of Institute of Ecology.
- 2005-2009. Volunteer for UGA Center for Undergraduate Research Opportunities (CURO). Led workshops on scientific writing, reviewed abstracts, and convened oral sessions.
- 2005-2007. Coordinated undergraduate poster symposium (2005-2006) and program committee (2007) for Institute of Ecology Graduate Research Symposium.
- 2000-2004. Coached Science Olympiad Team at Broughton High School. Volunteer, N.C. Science Olympiad (2000) and N.C. Ocean Science Bowl (2001). Hosted Science and Math program on local television station.