

## JEFFREY DANIEL MUEHLBAUER

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Curriculum for the Environment & Ecology  
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### EDUCATION

Ph.D. Ecology (*In Progress*). University of North Carolina at Chapel Hill (expected 2013)  
M.S. Ecology. University of North Carolina at Chapel Hill (2010)  
B.S. Biology & Chemistry. Northern Arizona University (2007)  
Ecology Emphasis, with Honors, *Summa cum laude*. 4.0 GPA.

### RESEARCH & EMPLOYMENT

University of North Carolina. Chapel Hill, NC. *Advisor: Dr. Martin W. Doyle*

- University Fellow (2007–Pres.), Geography/Ecology TA/RA (2008–Pres.)

Leibniz Institute of Freshwater Ecology & Inland Fisheries (IGB). Berlin, Germany.

*Collaborators: Drs. Klement Tockner, Michael Monaghan, Martin Pusch*

- Visiting Fellow (2011)

Northern Arizona University. Flagstaff, AZ. *Advisor: Dr. Jane C. Marks*

- Research Associate, Department of Biology (2003–2007)

Ecological Restoration Institute. Flagstaff, AZ. *Director: Dr. Peter Z. Fulé*

- Assistant Crew Leader (2006), Research Assistant (2004–2007)

Duke University. Durham, NC. *Director: Dr. Christopher B. Newgard*

- Chemist/Geneticist Intern (2005)

### RECENT AWARDS & RECOGNITIONS

IGB Fellowship in Freshwater Science, 2011

CUAHSI Pathfinder Fellowship, 2010

Sigma Xi GiAR, 2010

NABS President's Award, 2009

Binghamton Student Travel Award, 2009

UNC Pogue Fellow, 2007–Pres.

### PEER-REVIEWED PUBLICATIONS

- 7) Riggsbee, J.A., Doyle, M.W., Julian, J.P., Manners, R., Muehlbauer, J.D., Sholtes, J. & Small, M.J. (*Accepted*) Influence of aquatic and semi-aquatic organisms on channel forms and processes. In: *Treatise on Geomorphology* (Eds J. Schroder & E. Wohl). Vol. 9. Academic Press, San Diego.
- 6) Muehlbauer, J.D. & Doyle, M.W. (2012) Knickpoint effects on macroinvertebrates, sediment, and discharge in urban and forested streams: Urbanization outweighs micro-scale heterogeneity. *Freshwater Science (formerly Journal of the North American Benthological Society)* 31:282-295. DOI: 10.1899/11-010.1
- 5) Muehlbauer, J.D., Duncan, J. M. & Doyle, M.W. (2011) Benign use of salt slugs on aquatic macroinvertebrates: Measuring discharge with salt during an aquatic ecology study. *River Research & Applications*. DOI: 10.1002/rra.1546
- 4) Muehlbauer, J.D., Doyle, M.W. & Bernhardt, E.S. (2011) Macroinvertebrate community responses to a dewatering disturbance gradient in a restored stream. *Hydrology and Earth System Sciences* 15:1771-1783. DOI: 10.5194/hess-15-1771-2011
- 3) Fuller, R.L., Griego, C., Muehlbauer, J.D., Dennison, J. & Doyle M.W. (2010) Response of stream macroinvertebrates in flow refugia and high-scour areas to a series of floods: A reciprocal replacement study. *Journal of the North American Benthological Society (now Freshwater Science)* 29:750–760. DOI: 10.1899/09-107.1
- 2) Muehlbauer J.D., LeRoy C.J., Lovett J.M., Flaccus K.K., Vlieg J.K. & Marks J.C. (2009) Short-term responses of decomposers to flow restoration in Fossil Creek, Arizona, USA. *Hydrobiologia* 618:35–45. DOI: 10.1007/s10750-008-9545-3

- 1) Joseph, J.W., Odegaard, M.L., Ronnebaum, S.M., Burgess, S.C., Muehlbauer, J., Sherry, A.D. & Newgard, C.B. (2007) Normal flux through ATP-citrate lyase or fatty acid synthase is not required for glucose-stimulated insulin secretion. *Journal of Biological Chemistry* 282:31592–31600. DOI: 10.1074/jbc.M706080200

### **MANUSCRIPTS IN PREP, THESES & OUTREACH PUBLICATIONS**

- Muehlbauer, J.D., Doyle, M.W & Tockner, K. (In Prep) How wide is a stream? A Meta-analysis of the distance aquatic subsidies travel in terrestrial food webs (for *Ecology*).
- Muehlbauer, J.D. (2010) Ecological heterogeneity in streams: geomorphic and hydrologic influences macroinvertebrate community structure. MS Thesis, University of North Carolina- Chapel Hill. 138 pp.
- Muehlbauer, J.D. (2007) Getting all wet at the ERI: a study of how riparian restoration influenced the aquatic ecosystem in Fossil Creek, Arizona. Ecological Restoration Institute Newsletter, Spring 2007. 3 pp.

### **MAJOR CONFERENCE PRESENTATIONS (AS LEAD AUTHOR ONLY)**

- 8) Muehlbauer, J.D., Clay, P. & Doyle, M.W. (2012) Temporal succession and island biogeography in a braided river ecosystem following flash flooding: a bank-side community perspective. SFS.
- 7) Muehlbauer, J.D., Doyle, M.W & Tockner, K. (2011) Effects of river geomorphology on the spatial importance of aquatic energy flows into terrestrial food webs. AGU.
- 6) Muehlbauer, J.D., Tockner, K. & Doyle, M.W. (2011) "Stream signatures:" aquatic subsidy importance to terrestrial foodwebs with distance from the stream. NABS.
- 5) Muehlbauer, J.D. & Doyle, M.W. (2010) Does urbanization overcome micro-scale heterogeneity? Knickpoint effects on macroinvertebrates, sediment, and discharge in urban and forested streams. ASLO/NABS.
- 4) Muehlbauer, J.D., Bernhardt, E.S. & Doyle, M.W. (2009) Macroinvertebrate community responses to an experimental drought gradient on the outer coastal plain of North Carolina. NABS.
- 3) Muehlbauer, J.D. & Doyle, M.W. (2008) Knickpoint effects on habitat and the macroinvertebrate community. Stream Restoration in the Southeast Conference.
- 2) Muehlbauer, J.D., *et al.* (2007) Short-term effects of dam decommissioning and flow restoration in Fossil Creek. ESA/SER.
- 1) Muehlbauer, J.D., *et al.* (2005) Diversion dam reduces decomposition, fungal biomass and macroinvertebrate abundance and diversity (Poster). AGU/NABS.

### **INVITED, NON-CONFERENCE PRESENTATIONS**

- "Water, watersheds & people", UNC special course on water issues, February 2010
- "Carbon dioxide" (for 200 children), Chapel Hill/Carrboro City Schools, September 2009

### **PROFESSIONAL SERVICE & SYNERGISTIC ACTIVITIES**

- Graduate Student President. UNC Curriculum for the Environment & Ecology, 2012–Pres.
- Seminar Search Committee. UNC Curriculum for the Environment & Ecology
- Chair 2011–Pres.; Member 2008–2009, 2010–2011
- Faculty Search Committee. UNC Curriculum for the Environment & Ecology, 2011–Pres.
- Graduate Research Consultant. UNC Cistern Water Quality Capstone, 2011
- Science volunteer. Lecturer, presenter, hand-on demos, mentoring, science fairs. Chapel Hill/Carrboro City Schools, NC Museum of Natural Science, NC State Fair, NC Division of Water Quality, Museum of Life & Science, Ravenscroft School. 2009–Pres.
- Author English Help Volunteer. Ecological Society of America, 2006–Pres.
- Peer-reviewer. Ecol, CJFAS, L&O:F&E, RiverResAppl, RestorEcol, JAWRA, WRR (1 each)
- Active Member. ESA, SER, AGU, SFS, ASLO, Sigma Xi, EGU. 2005–Pres. (by join date)