Rebecca (Manners) Diehl

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EDUCATION

2013	PhD, Watershed Sciences	Utah State University
2006	MA, Geography	University of North Carolina, Chapel Hill
2004	BA, Geography Modified with Earth Sciences	Dartmouth College

POSITIONS HELD

2014-present	*NSF Science, Engineering, and Education for Sustainability Fellow,* Department of Geosciences, University of Montana
2013-2014	*Postdoctoral Researcher*, Department of Geosciences, University of Montana (with Dr. Andrew Wilcox)
2011-2012	*Primary Instructor*, Department of Watershed Sciences, Utah State University (2 semesters total)
2008-2012	*SJ Quinney Fellow,* Department of Watershed Sciences, Utah State University (with Dr. John Schmidt)
2006-2008	*Consultant-Fluvial Geomorphologist,* Inter-fluve, Inc., Hood River, Oregon
2005-2006	*Research Assistant,* Geography Department, University of North Carolina, Chapel Hill (with Dr. Martin Doyle)
2004-2005	*Teaching Assistant,* Geography Department, University of North Carolina, Chapel Hill (2 semesters total)
2000-2004	*Research Assistant*, Geography Department, Dartmouth College (with Dr. Francis Magilligan)

TEACHING EXPERIENCE

Co-Instructor (2016)
Wetland/Riparian Ecology and Management, Graduate Level
LRES, Montana State University

Co-Instructor (2015)
Geomorphology, Upper/Graduate Level
Department of Geosciences, University of Montana

Primary Instructor (2011, 2012)
Fluvial Geomorphology, Upper/Graduate Level
Department of Watershed Sciences, Utah State University

Teaching Assistant (2010)
Small Watershed Hydrology, Upper Level
Watershed Sciences Department, Utah State University

Teaching Assistant (2006, 2007)
Physical Geography, Introductory
University of North Carolina, Chapel Hill

Guest Lecturer
Ecological Stream Restoration in the Context of Montana Regulations,
Professional Workshop, MT Water Center, **Fall 2015**

Freshwater Ecology, Upper level course, Montana State University, **Fall 2014**
Process Geomorphology, Upper level course, University of Montana, **Spring 2014**
Fluvial Geomorphology, Graduate course, University of Montana, **Fall 2013**
Small Watershed Hydrology, Upper level course, Utah State University, **Spring 2010**
Fundamentals of Watershed Science, Introductory course, Utah State University, **Spring 2010**
Physical Geography, Introductory course, University of North Carolina, **Fall 2007**

PEER-REVIEWED PUBLICATIONS

2016. **Diehl, R.M.,** A.W. Wilcox, J. Stella, L. Jui, Sklar, L, and A. Lightbody. Fluvial sediment supply and pioneer woody seedlings as a control on bar-surface topography. *Earth Surface Processes and Landforms*, doi:10.1002/esp.4017.

2015. **Manners, R.B.,** A.W. Wilcox, L. Jui, A. Lightbody, J. Stella, and Sklar, L. When do plants matter? Plant-morphodynamic interactions under variable flow and sediment supply rates. *Journal of Geophysical Research- Earth Surface*, 120, 324-325, doi:10.1002/2014JF003265.

2014. **Manners, R.B**., J.C. Schmidt, and M. Scott. Mechanisms of vegetation-induced channel narrowing on an unregulated canyon-bound river: Results from a natural field-scale experiment. *Geomorphology*, 211, 100-115.

2013. **Manners, R.B.,** J.C. Schmidt, and J.M. Wheaton. Multi-scalar model for the determination of spatially explicit riparian vegetation roughness*. Journal of Geophyscial Research- Earth Surface*, DOI: 10.1029/2011JF002188.

2008. Magilligan, F.J., P.B. Goldstein, G.B. Fisher, B.C. Bostick, and **R.B. Manners**. Late Quaternary hydroclimatology of a hyper-arid Andean watershed: Climate change, floods, and hydrologic responses to the El Nino- Southern Oscillation in the Atacama Desert. *Geomorphology,* 101, 14-32.

2008. **Manners, R.B**. and M.W. Doyle. A mechanistic model of woody debris jam evolution and its application to wood-based restoration and management. *River Research and Applications,* 24, 1104-1123.

2008. Small, M.J., M.W. Doyle, **R.B. Manners**, and R. Fuller. Hydrologic vs. geomorphic limitation on CPOM storage in stream ecosystems. *Freshwater Biology,* 53, 1618-1631.

2007. **Manners, R.B**., M.W. Doyle and M.J. Small. The Structure and Hydraulics of Natural Debris Jams. *Water Resources Research, 43*, W06432, doi:10.1029/2006WR004910.

2007. **Manners, R.B**, F.J. Magilligan, P. Goldstein. Floodplain development, El Niño, and cultural adaptation in a hyper-arid Andean environment. *Annals of the Association of American Geographers,* 97, 229–249.

BOOK CHAPTERS

2016. Julian, J.P., C.J.P. Podolak, K.M. Meitzen, M.W. Doyle, **R.B. Manners**, E.T. Hester, S. Ensign, N.A. Wilgruber. Shaping the Physical Template: Biological, Hydrological, and Geomorphic Connections in Stream Channels in Stream Ecosystems in a Changing Environment, ed. Jones, J. and E.H. Stanley, Academic Press.

2012. Riggsbee, J.A., M.W. Doyle, J.P. Julian, **R.B. Manners**, J. Sholtes, J. Muehlbauer , and M.J. Small. Influence of Aquatic and Semi-Aquatic Organisms on Channel Forms and Processes in Treatise on Geomorphology, ed. John Schroder, Academic Press

INVITED PRESENTATIONS

2015. **Manners, R.B**., "Identifying Flows Necessary to Maintain Critical Physical and Ecological Processes for the Riparian Ecosystems of the Yampa and Green Rivers", Dinosaur National Monument Research Symposium, February 11, 2015, Dinosaur, CO.

2014. **Manners, R.B.,** "The structural and hydraulic dynamics of natural wood jam evolution", ASCE EWRI Congress, June 1-5, 2014, Portland, OR.

2014. **Manners, R.B.,** "When do plants influence river process and form? Plant-morphodynamic interactions under variable flow and sediment transport rates," University of Montana Department of Geosciences Seminar, February 24, 2014, Missoula, MT.

2013. **Manners, R.B.,** A. Lightbody, A.C. Wilcox, L. Sklar, J. Stella, and L.Kui, "Observations on the balance between abiotic and biotic factors in plant-morphodynamic feedbacks," American Geophysical Union, December 9-13. San Francisco, CA.

2013. **Manners, R.B**., "Geomorphic-vegetation linkages in environmental flows," USGS Northern Rocky Mountain Science Center EcoLunch Seminar Series, May 14, 2013, Bozeman, MT.

2013. **Manners, R.B**. and J.C. Schmidt, "Environmental flows for the maintenance of a multi-thread planform on the Yampa River," Dinosaur River Science Symposium, Dinosaur National Monument, February 27, 2013, Dinosaur, CO.

2012. **Manners, R.B.** and J.C. Schmidt, "Geomorphic and vegetative interactions and feedbacks on the Yampa and Green Rivers, Dinosaur National Monument," Dinosaur National Monument Outfitters and Guides Seminar, May 10, 2012, Dinosaur, CO.

SELECTED CONFERENCE PRESENTATIONS

2012. **Manners, R.B.** and J.C. Schmidt, "A 50-year natural experiment: The impact of non-native riparian vegetation on an unregulated canyon-bound river," American Geophysical Union Fall Meeting, December 3-7, 2012, San Francisco, CA.

2011. **Manners, R.B.,** J.C. Schmidt, and J.M. Wheaton, "Multi-scalar model for the determination of spatially explicit roughness," American Geophysical Union Fall Meeting, December 5-9, 2011, San Francisco, CA.

2010. **Manners, R.B.,** J.C. Schmidt, and J.M. Wheaton, "Field characterization of stand structure and the quantification of flow field alterations of a woody riparian shrub indicates that scale matters," American Geophysical Union Fall Meeting, December 13-17, 2010, San Francisco, CA.

2009. **Manners, R.B.** and J.C. Schmidt, "Chicken or egg? Geomorphic controls on tamarisk and tamarisk controls on geomorphology within the Colorado River Basin," Binghamton Geomorphology Symposium. October 2-4, 2009, Blacksburg, VA

2006. **Manners, R.B.** and M.W. Doyle, "The Structure and Hydraulics of Natural Debris Jams," International Conference on Riverine Hydroecology: Advances in Research and Applications, August 14-18, 2006, Stirling, Scotland.

2005. **Manners, R.B.,** F.J. Magilligan and P. Goldstein, "Floodplain development, El Niño, and cultural adaptation in a hyper-arid Andean environment," Association of American Geographers Annual Meeting, April 2005, Denver, CO.

AWARDS AND HONORS

Association of American Geographers- Reds Wolman Student Research Award, **2005&2012**
Stirling Hydroecology Student Presentation Winner, ISWWR II, **2006**
Magna Cum Laude, Dartmouth College, **2004**
Presidential Scholar, Dartmouth College, **2004**
George Perkins Marsh Thesis Award, Dartmouth College, **2004**
Geography Department Honors Thesis Award, Dartmouth College, **2004**

GRANTS AND FELLOWSHIPS

NSF Science, Engineering, and Education for Sustainability (SEES) Fellowship, **2014-2017** ($375, 300)
Colorado Plateau Cooperative Ecosystem Studies Unit, **2011-2013** ($13,500)
NSF Doctoral Dissertation Improvement Grant, **2010-2012** ($12,000)
USGS Southwest Biological Science Center, **2010-2011** ($34,655)
S.J. & Jessie E. Quinney Ph.D. Fellowship, Utah State University, **2008-2012**
Geological Society of America Graduate Student Research Grant, **2005** ($1,500)
Dean of Faculty Undergraduate Research Grant, Funding for Thesis-Related Research, **2003**
John Sloan Dickey Center for International Understanding Undergraduate Research Grant, Funding for Thesis-Related Research, **2003**
Rockefeller Center for Public Policy Grant, Off-Campus Internship with the Friends of the Animas River and Ecosystem Management International, Durango, Co., **2002**

SERVICE AND OUTREACH

Journal Reviewer: *Annals of the Association of American Geographers, Environmental Management, Geomorphology, Journal of Hydraulic Engineering, Water Resources Research*

Committees/Panels: *Graduate student representative on Geography faculty position search committee at Utah State University, ASCE technical committee on River Restoration, Participant on Tamarisk Coalition's Tamarisk Beetle Expert Panel*

Media Interview: *University of Montana University Relations*