

MONICA T. ROTHER

CONTACT INFORMATION

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ACADEMIC HISTORY

University of Colorado, Boulder

PhD, Geography, August 2015 (*Biogeography*)

Advisor: Dr. Thomas T. Veblen

Dissertation Title: "Conifer regeneration after wildfire in low-elevation forests of the Colorado Front Range: Implications of a warmer, drier climate."

University of Tennessee, Knoxville

MS, Geography, August 2010 (*Biogeography*)

Advisor: Dr. Henri D. Grissino-Mayer

Thesis Title: "Influences of climate and anthropogenic disturbances on wildfire regimes of the Zuni Mountains, New Mexico, U.S.A."

Willamette University, Salem, Oregon

BA, Environmental Science & Spanish, May 2005

Completed undergraduate theses in both majors

summa cum laude

RESEARCH INTERESTS

Plant community ecology; dendrochronology; biogeography; forest management; fire ecology; prescribed fire; wildfire; conifer regeneration; climate change

CURRENT POSITION

Fire Ecologist, Tall Timbers Research Station & Land Conservancy

2015-

Tall Timbers aims to foster exemplary land stewardship through research, conservation, and education. As Fire Ecologist, my research is focused on fire's influence on longleaf pine ecosystems.

FELLOWSHIPS AND AWARDS

National Science Foundation, Grad. Research Fellowship Program, \$90,000

2009–2014

Colorado Mountain Club Foundation, Al Ossinger Fellowship, \$6,000

2011–2013

John W. Marr Ecology Fund Award, \$1400

2012

Robert Long Outstanding M.S. Student Award, UT-Knoxville, Geography

2010

Outstanding Graduate Teaching Assistant, UT-Knoxville, Geography

2009

J. Wallace & Katie Dean Fellowship, UT-Knoxville, \$15,000

2008–2009

Amgen Teaching Fellow in Math & Science, Teach for America, \$5,000

2005–2006

William B. Webber Scholarship, Willamette University, \$4,000

2004–2005

Mary Stuart Rogers Teaching Scholar, Willamette University, \$4,000

2004–2005

Gilman International Scholar, Inst. of International Education, \$3,000

2003–2004

Merit Scholarship, Willamette University, \$44,000

2001–2005

FUNDED GRANTS

GG Wade Foundation Grant. Project title: Using tree rings to learn about past fires in the Red Hills Region. Role on grant: PI. Co-PI Jean Huffman and Thomas Veblen. \$10,000.

2017

National Science Foundation, Doctoral Dissertation Research

2012–2014

Improvement Grant. Project Title: "Spatial and temporal variability of post-fire conifer regeneration in lower treeline forests of the U.S. Rocky Mountains: Implications of a warmer, drier climate." Total: \$15,993.

Boulder County Parks and Open Space Grant. Project Title: “Post-fire conifer regeneration in lower treeline forests of Boulder County: Implications of a warmer, drier climate.” Total: \$4,300. Role on grant: PI. Co-PI: Thomas Veblen. 2012

National Park Service, Fire and Aviation Program. Project Title: “Assessing fuel contiguity within and between El Malpais National Monument and Cibola National Forest, New Mexico: Implications for fuels management.” Total: \$39,000. Role on grant: Graduate Student Researcher. PI: Henri Grissino-Mayer. 2009–2010

PEER-REVIEWED PUBLICATIONS

Robertson, K.M., **Rother, M.T.**, and Reid, A.M. (In review). Soil disturbance by disking affects plant species composition in a native longleaf pine-grassland community.

Rother, M.T. and Veblen, T.T. (2017). Climate Drives Episodic Conifer Establishment after Fire in Dry Ponderosa Pine Forests of the Colorado Front Range, USA. *Forests* 8(5), doi: 10.3390/f8050159

Huffman, J.M. and **Rother, M.T.** (2017). Dendrochronological field methods for fire history in pine ecosystems of the Southeastern Coastal Plain. *Tree-Ring Research* 73(1), 42–46.

Rother, M.T. and Veblen, T.T. (2016). Limited conifer regeneration following wildfires in dry ponderosa pine forests of the Colorado Front Range. *Ecosphere* 7(12), 1-17, e01594.

Rother, M.T., Veblen, T.T., and Furman, L.G. (2015). A field experiment informs expected patterns of conifer regeneration after disturbance under changing climate conditions. *Canadian Journal of Forest Research* 45, 1607–1616.

Rother, M.T. and Grissino-Mayer, H.D. (2014). Climatic influences on fire regimes in ponderosa pine forests of the Zuni Mountains, New Mexico, USA. *Forest Ecology and Management* 322, 69–77.

OUTREACH PUBLICATIONS

Rother, M.T. (2016). Long after the flames, tree rings tell the story of past fires. *Tall Timbers Research Station & Land Conservancy e-journal*.

CONFERENCE PRESENTATIONS

Rother, M.T. and Huffman, J.M. “Using dendrochronology to reconstruct fire regimes of longleaf pine ecosystems in the Southeastern Coastal Plain.” The Longleaf Alliance, Biennial Meeting. Savannah, GA, 2016.

Rother, M.T. and Huffman, J.M. “Determining the seasonality of historic fires in southeastern pine savanna, central Florida.” Association of American Geographers (AAG), Annual Meeting. San Francisco, CA, 2016.

Rother, M.T. and Veblen, T.T. “Limited conifer regeneration following wildfires in low-elevation forests of the Colorado Front Range.” The Association for Fire Ecology (AFE), International Fire Ecology and Management Conference. San Antonio, TX, 2015.

Rother, M.T. and Veblen, T.T. “Climatic Influences on Episodic Post-Fire Conifer Establishment in Low-Elevation Ponderosa Pine Forests of the Colorado Front Range.” Ecological Society of America (ESA), Annual Meeting. Sacramento, CA, 2014.

Rother, M.T. and Grissino-Mayer, H.D. “Climatic Influences on Episodic Post-Fire Conifer

Establishment in Low-Elevation Ponderosa Pine Forests of the Colorado Front Range.” Association of American Geographers (AAG), Annual Meeting. Tampa, FL., 2014.

Grissino-Mayer, H.D., Gavin, D.G., **Rother, M.T.**, and Schneider, E.A. “Testing Fire Synchrony and Fire-Climate Relationships in Dendroecology using the One-Dimensional Ripley’s k-Function.” Association of American Geographers (AAG), Annual Meeting. Tampa, FL., 2014.

Rother, M.T. and Grissino-Mayer, H.D. “Climate as a Driver of Wildfire in Northwestern New Mexico, USA.” Association of American Geographers (AAG), Annual Meeting. Washington DC, 2010.

Rother, M.T. and Grissino-Mayer, H.D. “The Spatial and Temporal Interconnectivity of Wildfire Regimes Across Land-Ownership Boundaries in Northwestern New Mexico, U.S.A.” Southeastern Division of the Association of American Geographers (SEDAAG), Annual Meeting. Knoxville, TN., 2009.

COLLOQUIA AND INVITED TALKS

Invited Talk – Joseph W. Jones Ecological Research Center. “Climate’s role in shaping fire regimes and post-burn landscapes in ponderosa pine forests of northwestern New Mexico and the Colorado Front Range. Upcoming – Aug. 2017.

Colloquium Talk – Florida State University, Department of Biology. “Tree rings and natural disturbances: using dendroecological techniques to reconstruct the past frequency and seasonality of fire.” Sept. 2016.

Invited Talk – Boulder County Parks and Open Space. “Management Implications of Research in Recently Burned Ponderosa Pine Forests of the Colorado Front Range.” Jan. 2015.

Invited Panel Member – Dawson School. “Fire and Flooding in Colorado.” Feb. 2014.

Colloquium Talk – Regis University, Department of Biology. “Climate Change and the Trajectory of Recently Burned, Low-Elevation Forests of the Colorado Front Range.” Oct. 2012.

GRADUATE RESEARCH EXPERIENCE

Graduate Student Researcher, National Science Foundation, WildFIRE PIRE. 2011–2015
Project Title: “Feedbacks and Consequences of Altered Fire Regimes in the Face of Climate and Land-use Change in Tasmania, New Zealand, and the Western U.S.” See: <http://www.wildfirepire.org/>

Summer Graduate Research Assistant, UT-Knoxville. 2009
Collaborated with a team of graduate students, undergraduate students and one K–12 educator to collect fire history data in the Zuni Mountains, New Mexico.

TEACHING APPOINTMENTS

Instructor of Record, CU-Boulder, Geography. 2013, 2014
Redesigned and taught an advanced, semester-long course during Maymester entitled: “GEOG 3521:

Mountain Geography.”

Instructor of Record, CU-Boulder, Geography. Redesigned and taught an introductory, semester-long course entitled: “GEOG: 1001: Introduction to Physical Geography I: Climate and Vegetation” 2014

Instructor of Record, CU-Boulder, Geography. Redesigned and taught an introductory, semester-long course entitled: “GEOG 1011: Introduction to Physical Geography II: Landscapes and Water.” 2011

Teaching Assistant, CU-Boulder, Geography. Taught laboratory sections for semester-long courses in introductory physical geography. 2010–2015

Teaching Assistant, UT-Knoxville, Geography. Taught laboratory sections for semester-long courses in introductory physical geography. 2008–2009

Math & Earth Sciences Instructor, Westlake Middle School, Oakland, CA. Taught 6th grade math and science and 6th-8th grade math for **English-Language Learners** as a member of **Teach for America**. 2005–2007

TEACHER TRAINING

Certificate in College Teaching, CU-Boulder 2015
Attended over 20 workshops on college teaching. Topics included diversity in the classroom, integrating new technologies into teaching, mentoring undergraduates, and course planning and design. My teaching was also repeatedly observed and critiqued.

California Teaching Credential, CSU-East Bay 2007
Completed coursework and teaching evaluations to obtain a teaching credential for 6th grade math and science in Oakland, CA.

MENTORING, LEADERSHIP, AND SERVICE

Teacher Training Event at Tall Timbers Research Station & Land Conservancy. Full Day Teacher Training Event. Field-based ecology lessons for K-12 teachers. 2016

Supervisor of Fire Ecology Program Technicians and Interns. Tall Timbers Research Station. Have supervised eleven individuals, including two deaf interns from Gallaudet University. 2015–

Undergraduate Research Opportunity Program, CU-Boulder. I recruited, trained, and supervised seven undergraduate students to conduct research through this program. This included two undergraduate students who later completed honor’s theses under my mentorship (Luke Furman and Jeremy Arkin) 2010–

Graduate Student Representative, CU-Boulder, Geography. 2012

Graduate Student Representative, UT-Knoxville, Geography. 2009–2010

Geography Awareness Week Coordinator, UT-Knoxville, Geography. Developed and implemented K-12 lessons as part of National Geographic Society’s “Geography Action” week. 2008

**DIVERSITY
TRAINING AND
EXPERIENCE**

Diversity & Inclusion Summit at CU-Boulder. Participant in 2-day summit 2014

Teaching workshops on diversity. Offered as part of the Graduate Teaching Program at CU-Boulder. 2010–2014

Teach for America. Educational equity program, Oakland, CA. 2005–2008

William B. Webber program. Science outreach targeting women in science 2004–2005

**FOREIGN
LANGUAGES**

Spanish

Second undergraduate major completed in Spanish (2005)

Study abroad in Quito, Ecuador (2003)

Taught English-Language Learners in Oakland, CA (2005–2008)

American Sign Language

Beginner level. Used for communication with deaf interns at Tall Timbers Research Station and Land Conservancy.

WEBSITES

<http://rothermonica.wix.com/forestecology>

<http://talltimbers.org/tree-ring-research/>