

Curriculum Vita

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OVERVIEW

EDUCATION

The University of Montana (UMT), Division of Biological Sciences

Ph.D. (May 2003, advisor Ragan M. Callaway)

Mechanisms for invasion by non-native trees – facilitation, ecosystem engineering, and escape from belowground enemies

Appalachian State University, Department of Biology

B.S. (December 1996), minor in Geography

- * *Additional training in analysis of complex community data sets*: Participated in the Fungal Environmental Sampling Informatics Network (FESIN) training “Ecological approaches to analyzing complex community datasets,” Mycological Society of American annual meeting, Snowbird, UT, 25-26 July 2009
- * *Additional training in molecular methods for identifying soil fungi*: Participated in the FESIN training “Molecular tools for assessing fungal biodiversity” and “Sampling fungi from the environment—challenges and solutions,” Ecological Society of America Meeting, Milwaukee, WI, August 2-3, 2008
- * *Additional training in soil-borne plant pathogens*: Participated in the “First International Workshop for the Morphological and Molecular Identification of the Straminopiles: *Phytophthora* and *Pythium*,” North Carolina State University, 23-27 July 2004

PROFESSIONAL POSITIONS

Ecologist, USDA-ARS, Fort Keogh Livestock & Range Research Laboratory (2007-present)

Adjunct faculty, Division of Biological Sciences, The University of Montana (2008-present)

Adjunct faculty, Montana State University (2007-present)

Post-doctoral Research Associate, Indiana University, mentors include Drs. Keith Clay at IU and Wim Van der Putten at the Netherlands Institute of Ecology (2003-2007)

Research Supervisor for Drs. Ragan Callaway (2003) and Anna Sala (1999), UMT

Teaching Assistant, UMT (1998-2002)

Research Technician II for Dr. Steven Pennings, University of Georgia Marine Institute (1997-1998)

Research Technician for Dr. Bob Mitchell, Joseph W. Jones Ecological Research Center, GA (1997)

Intern for Dr. Eric Menges, Archbold Biological Station, FL (1997)

Intern for Dr. David Tilman, Cedar Creek Natural History Area LTER, MN (1996)

Field Research Assistant for Scott Nunes, Michigan State University (1995)

HONORS

National Parks Ecological Research, Post-doctoral research fellowship, 2006

USDA-NRI, Post-doctoral research fellowship, 2003

Bertha Morton Scholarship, the most prestigious award given to a graduate student at UMT, 2001

Outstanding Seniors Award- recognized as one of five outstanding seniors in the Biology Department, ASU for the class of 1996

Member of Beta Beta Beta Biological Honor Society

Member of Pi Gamma Mu, International Honor Society in Social Sciences

TEACHING**TEACHING EXPERIENCE**

Teaching assistant: Introductory Biology, Honors Introductory Biology^{*2}, Rocky Mountain Flora, Trailside Botany¹, General Botany, and Ecology^{1,2}, UMT

* This experimental class emphasized inquiry-based learning techniques and incorporated technology into the classroom to facilitate learning and assess pedagogical techniques.

¹ field oriented class; ² writing intensive course

Invited lecturer: Community Ecology, IU and Rocky Mountain Flora, Trailside Botany, and Introductory Ecology, UMT

Mentored: Marnie Rout (2011-12) post-doctoral research associate at Fort Keogh; Jennifer Stogner (2010) summer intern at Fort Keogh; Stacie Kageyama (2008-9) temporary technician at Fort Keogh; Luke Flory (2003-2007) graduate student at IU, who is studying the invasion dynamics of exotic shrub and grass species in Indiana; Shadi Pooyaei, Brandon Hatcher, Manuel Rodriguez IV, Sam Orr, and Michael Yuan (2005) and Jessica Stuuun (2004), undergraduates at IU, who are studying various aspects of plant ecology; Julie Gurnee, an undergraduate Research Fellow at UMT, who conducted an independent research project (2002; see PUBLICATIONS: Reinhart et al. 2006); and Rachel VandeVoort, an undergraduate at UMT, collaborated with me on an aquatic ecology project (1999-2000; see PUBLICATIONS: Reinhart & VandeVoort 2006).

EDUCATIONAL MATERIALS

Reinhart. 2002. On Graduate Studies in Biology. Pg 1-19 (downloadable PDF-

[http://www.biol.ttu.edu/Biology Shared Files/On Graduate Studies in Biological Science.pdf](http://www.biol.ttu.edu/Biology%20Shared%20Files/On%20Graduate%20Studies%20in%20Biological%20Science.pdf))

RESEARCH**PUBLICATIONS** (* Mentored undergraduate)

Peer-reviewed articles and book chapters

Reinhart. In press. The organization of plant communities: negative plant-soil feedbacks and semiarid grasslands. **Ecology**.

Reinhart, Johnson, & Clay. 2012. Conspecific plant-soil feedbacks of temperate tree species in the southern Appalachians, USA. **PLoS One**. 7(7): e40680

Reinhart, Wilson, & Rinella. 2012. Predicting plant responses to mycorrhizae: integrating evolutionary history and plant traits. **Ecology Letters**. 15:689-695

Reinhart, Johnson, & Clay. 2012. Effects of trees on their recruits in the southern Appalachians, USA. **Forest Ecology & Management**. 263:268-274

PUBLICATIONS (continued)

- Callaway, Bedmar, Reinhart, Silvan, & Klironomos. 2011. Effects of soil biota from different ranges on *Robinia* invasion: acquiring mutualists and escaping pathogens. **Ecology**. 92:1027-1035
- Reinhart, Van der Putten, Tytgat, and Clay. 2011. Variation in specificity of soil-borne pathogens from a plant's native range versus its non-native range. **International Journal of Ecology**. 2011:737298
- Reinhart and Rinella. 2011. Comparing susceptibility of eastern and western US grasslands to competition and allelopathy from spotted knapweed [*Centaurea stoebe* L. subsp. *micranthos* (Gugler) Hayek]. **Plant Ecology**. 212:821-828
- Reinhart, Royo, Kageyama, and Clay. 2010. Canopy gaps decrease microbial densities and disease risk for a shade-intolerant tree species. **Acta Oecologica**. 36:530-536
- Reinhart. 2010. The Role of Facilitative Interactions in Tree Invasions. **New Phytologist**. 187: 559-562.
- Reinhart, Van der Putten, Tytgat, and Clay. 2010. Virulence of soil-borne pathogens and invasion by *Prunus serotina*. **New Phytologist**. 186:484-495.
- Reinhart and Clay. 2009. Spatial variation in soil-borne disease dynamics of a temperate tree, *Prunus serotina*. **Ecology**. 90:2984-2993.
- Reinhart. 2008. Rangeland communities: structure, function, and classification. In *Range and Animal Sciences and Resources Management* (Squires, Ed.). in Encyclopedia of Life Support Systems (EOLSS), Developed under the Auspices of the UNESCO, Eolss Publishers, Oxford, UK. pgs. 1-23. [<http://www.eolss.net>]
- Clay, Reinhart, Rudgers, Tintjer, Koslow, & Flory. 2008. Red queen communities. In *Ecology of infectious diseases: Interactions between diseases and ecosystems*. (Eviner, Keesing & Ostfeld, Eds.). Princeton University Press, Princeton. pgs. 148-178.
- Reinhart, Gurnee*, Tirado, and Callaway. 2006. Invasion through quantitative effects: intense shade drives native decline and invasive success. **Ecological Applications**. 16:1821-1831.
- Reinhart and VandeVoort*. 2006. Effect of native and exotic leaf litter on macroinvertebrate communities and decomposition in a western Montana stream. **Diversity and Distributions**. 12: 776-781.
- Reinhart and Callaway. 2006. Tansley Review: Soil biota and invasive plants. **New Phytologist**. 170: 445-457.
- Reinhart. 2006. Letter to Editor: Invasive plants. **Science**. 311: 1865.
- Reinhart, Maestre, & Callaway. 2006. Facilitation and inhibition of seedlings of an invasive tree (*Acer platanoides*) by different tree species in a mountain ecosystem. **Biological Invasions**. 8:231-240.
- Reinhart, Royo, Van der Putten, & Clay. 2005. Soil feedback and pathogen activity associated with *Prunus serotina* throughout its native range. **Journal of Ecology**. 93: 890-898.
- Reinhart, Greene, & Callaway. 2005. Effects of *Acer platanoides* invasion on understory plant communities and tree regeneration in the northern Rocky Mountains. **Ecography** 28: 573-582.
- Reinhart & Callaway. 2004. Soil biota facilitate exotic *Acer* invasions in Europe and North America. **Ecological Applications**. 14:1737-1745.

PUBLICATIONS (continued)

- Reinhart & Menges. 2004. Effects of re-introducing fire to a central Florida sandhill community. **Applied Vegetation Science**. 7:141-150.
- Reinhart, Packer, Van der Putten, & Clay. 2003. Plant-soil biota interactions and spatial distribution of black cherry in its native and invasive ranges. **Ecology Letters**. 6:1046-50.
- Callaway, Reinhart, Moore, Moore, & Pennings. 2002. Epiphyte host preferences and host traits: mechanisms for species specific interactions. **Oecologia**. 132:221-30.
- Callaway, Reinhart, Tucker, and Pennings. 2001. Effects of epiphytic lichens on host preference of the vascular epiphyte *Tillandsia usneoides*. **Oikos**. 94:433-441.
- Knops and Reinhart. 2000. Specific leaf area along a nitrogen fertilization gradient. **American Midland Naturalist**. 144:265-272.
- Nunes, Zugger, Engh, Reinhart and Holekamp. 1997. Why do female Belding's ground squirrels disperse away from food resources. **Behav Ecol Sociobiol**. 40:199-207.

GRANTS AND AWARDS

- Reinhart. Cost Effective Strategies for Sagebrush Restoration, Sage-grouse Conservation Grant program, 2012 - \$4,000
- Reinhart. Soil microbes and the recovery of mixed-grass prairie following fire, USDA-ARS Post-doctoral Research Associate program, 2010 - \$100,000
- Reinhart. Matching Funding for 2010 Student Internship Program, 2010 - \$1,912
- Reinhart. Addendum: Effect of soil-borne fungal pathogens on forest diversity, National Parks Ecological Research Fellowship Program, 2008 - \$5,636
- Highlands Biological Station Grant-In-Aid, 2007 - \$800
- Reinhart. Addendum: Effect of soil-borne fungal pathogens on forest diversity, National Parks Ecological Research Fellowship Program, 2006 - \$14,000
- Reinhart. Effect of soil-borne fungal pathogens on forest diversity and dynamics, National Parks Ecological Research Fellowship Program, 2006 - \$120,000
- Reinhart. The role of belowground plant-microbe interactions in plant invasion, USDA-NRI, Post-doctoral research fellowship, 2003 - \$90,000
- Travel Awards, University of Montana, 2003 and 2001 - \$200 each
- Reinhart (Co-PI Callaway). Sticking our heads in the sand—Exploring the “Escape Hypothesis” from a belowground perspective, University Research Grant Program, 2002 - \$1,972
- Bertha Morton Scholarship, the most prestigious award given to a graduate student at the UMT, 2001- \$2,000
- John W. Marr Ecology Grant, 2001 - \$500

PROFESSIONAL ACTIVITIES**INVITED PRESENTER**

- Plant-soil feedbacks and plant community composition in semiarid grasslands
 “Plant-soil feedback: the past, the present and the future” symposium at the Ecological Society of America meeting 2012 and members of the Crazy Mountain Stockgrowers in Big Timber, MT, January 2012
- Natural History of Northern Great Plains
 Beef Symposium on Wheels during the American Society of Animal Science's annual western sectional meeting, Miles City, MT, June 2011.

INVITED PRESENTER (continued)

Working for USDA-ARS & my career as an Ecologist

Industry Roundtable, University of Alabama, Birmingham, April 2010

Managing soil health

Annual Prairie County Range Tour in conjunction with the Society for Range Management Northern Great Plains Fall Section Meeting, September 2009

Soil microbes and plant invasions—how soil-borne pathogens regulate plant populations and affect plant invasions Symposium for the Soil Ecology Society meeting 2009

Using metagenomics to better understand affects of range management on soil microbes and improve restoration techniques

USDA-ARS Metagenomics Workshop, Beltsville, MA, February 2009

Plant-soil biota interactions and plant communities

USDA-ARS, Northern Plains Agricultural Research Laboratory, 2008

Plant-soil biota interactions and plant invasions

The Center for Biodiversity and Conservation’s Twelfth Annual Symposium “Small matters: Microbes and Their Role in Conservation” at American Museum of Natural History, 2007

Understanding plant invasions and plant-soil biota interactions

USDA-ARS, Fort Keogh Livestock & Range Research Laboratory, 2007

Looking belowground at plant-pathogen interactions to better understand diversity, succession, and invasion

Iowa State University and SUNY College of Environmental Science and Forestry, 2006

Plant-soil biota interactions and plant invasions

University of California at Berkeley, University of Saskatchewan, & Texas Tech University, 2006 and Washington University, 2005

Invasion through quantitative effects: intense shade as a driver of invasive success and native decline. Poster, Invasive Plants Practical Problems & Research Opportunities, 2006

Soil feedbacks between native vs. introduced ranges of black cherry (*Prunus serotina*)

Poster, USDA/NSF Joint Agency PI National Meeting, 2005

Using plant-soil biota feedbacks to understand plant invasions and biogeography

Ohio University, 2005

Plant-soil community interactions and invasion of black cherry (*Prunus serotina*) in Europe.

The Netherlands Institute of Ecology, 2004

PROFESSIONAL LECTURES, SYMPOSIUM, AND POSTERS

Understanding priority effects may help improve restoration outcomes and establishment of *Artemisia tridentata* spp. *wyomingensis*

Society of Range Management 2011

Effects of prescribed burning and litter type on litter decomposition and nutrient release in mixed-grass prairie in eastern Montana

Society of Range Management 2011

Density and pathogenic activity of soil microbes associated with windthrows of temperate deciduous forests in the Allegheny National Forest, Pennsylvania

Ecological Society of America 2008

Impotent pathogens and invasive success

Ecological Society of America 2007

Testing the Janzen-Connell hypothesis in a temperate forest

Ecological Society of America 2006

PROFESSIONAL LECTURES, SYMPOSIUM, AND POSTERS (continued)

- The role of plant-microbe interactions in plant invasions Soil Ecology Society 2005
 Variation in a plant-soil community interaction across a latitudinal gradient. Ecological Society of America 2004
- Introduction to plant-microbe feedback in plant invasions and invasive non-native trees escaping from soil pathogens. Symposium for the Ecological Society of America 2003
- An invasive tree suppresses natives and facilitates conspecifics by altering the light in the understory. co-author, Ecological Society of America 2003
- How an invasive tree species (*Acer platanoides*) engineers its environment and helps facilitate invasion. Ecological Society of America 2002
- Acer platanoides* invasion in the northern Rocky Mountains—facilitation of exotic seedlings by overstory conspecifics. Ecological Society of America 2001
- Epiphytic host specialization transcends nutrient dependence. Ecological Society of America 1999

EDITORIAL RESPONSIBILITIES

Member of the Editorial Board of the following journal:

PLoS One (since September 2011)

Referee of over 150 research papers for:

Acta Oecologica, Allelopathy Journal, American Journal of Botany, American Midland Naturalist, Applied Soil Ecology, Applied Vegetation Science, Austral Ecology, Australian Journal of Botany, Basic & Applied Ecology, Biological Invasions, Biotropica, Canadian Journal of Forest Research, Diversity & Distributions, Ecography, Ecological Applications, Ecological Research, Ecology, Ecology Letters, Ecosphere, Environmental Microbiology, Environmental Microbiology Reports, European Journal of Soil Biology, Functional Ecology, Global Change Biology, International Journal of Environmental Research and Public Health, International Journal of Plant Sciences, Journal of Applied Ecology, Journal of Biogeography, Journal of Ecology, Journal of the Torrey Botanical Society, Journal of Vegetation Science, Micologia Aplicada International, Mycologia, Oecologia, Oikos, Pedobiologia, Pedosphere, Planta, Plant & Soil, Plant Disease, Plant Ecology, PLoS One, Soil Biology & Biochemistry, Weed Research

Referee of research proposals for:

National Science Foundation; New York Sea Grant; Sigma Delta Epsilon, Graduate Women in Science; Swiss Federal Institute for Technology (ETH Zurich); and University of Wisconsin's Research Growth Initiative

PROFESSIONAL SERVICE

- Moderated session at the annual Meeting of the Society of Range Management 2011
- Organized the Plant Interactions Group meetings at IU during spring 2006
- Volunteered expertise on invasive trees for reference in the article "Choosing a Tree for Your Yard? Go Native" published in National Wildlife on pp. 40, November 2003
- Organized and moderated a professional symposium entitled, "The role of plant-microbe feedbacks in plant invasions," the annual Ecological Society of America meeting 2003
- Served as a graduate student representative on the graduate program development committee, Spring 2002

PROFESSIONAL SERVICE (continued)

Served as a graduate student representative on the plant evolutionary geneticist faculty search committee, Fall 2001- Spring 2002

Represented graduate students at the Organismal Biology and Ecology faculty meetings, Fall 2000- Spring 2001

PROFESSIONAL AFFILIATIONS

Ecological Society of America (Life member)

Mycological Society of America

COMMUNITY SERVICE

Provided demonstrations on “Soil Health” to six separate groups of fifth graders (per year) from regional schools as part of Fort Keogh’s annual school tours program, spring (2008, 2011, and 2012).

Coached youth soccer 2010-2012.

Judged Custer County science fairs 2007-9, 2011.

Served on the planning committee and provided tours for Montana Range Days 2009-2010.

PHOTOGRAPHY & VIDEOGRAPHY

Creator of short nature documentary entitled, “Damping-off” that placed second prize in the 4th Chlorofilm’s film contest

Creator of short nature documentary entitled, “Forests” that won first prize in the 3rd Chlorofilm’s film contest

Contributing photographer to *Montana Outdoors* magazine (2010-12)

Cover and other photographs included in the “IU Research Teaching Preserve Five Year Report” 2006.

Time-lapse photography projects for the mini-series currently in production "Natural Heritage of Indiana" for WFYI and Indiana PBS, with a broadcast date of 2007

Time-lapse photography projects for the nature documentary, “Return of the Cicadas” a co-production of the IU Biology Dept. and PBS station WFYI in Indianapolis 2007 (date broadcasted)