

Curriculum Vita

Kurt O. Reinhart

US Department of Agriculture, Agricultural Research Service
Fort Keogh Livestock & Range Research Laboratory
243 Fort Keogh Rd.
Miles City, MT 59301-4016
Phone: (406) 874-8211 Fax: (406) 874-8289
E-mail: kurt.reinhart@ars.usda.gov

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 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

* *Additional training in molecular methods for identifying soil fungi*: Participated in the Fungal Environmental Sampling Informatics Network “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

PROFESSIONAL POSITIONS

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

Adjunct faculty, Montana State University (2007-present)

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

HONORS (continued)

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: 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 Stuan (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.iecology.net/images/on_graduate_studies_in_biology.pdf

Reinhart. Ongoing. Developed <http://iecology.net> website and interactive content to stimulate the understanding of ecological concepts and concepts relevant to other sub-disciplines of Biology including: Development, Plant Taxonomy, Mycology, Microbiology, etc.

RESEARCH**PUBLICATIONS** (* Mentored undergraduate)

Peer-reviewed articles and book chapters

Reinhart and Clay. In Press. Spatial variation in soil-borne disease dynamics of a temperate tree, *Prunus serotina*. **Ecology**

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.

PUBLICATIONS (continued)

- 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. **J. 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.
- 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.
✓ research widely publicized by the press (e.g. BBC Wildlife Magazine, March 2004; The Chronicle of Higher Education, August 2005; etc.)
- 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, Zuger, Engh, Reinhart and Holekamp. 1997. Induction of natal dispersal in female Belding's ground squirrels (*Spermophilus beldingi*). **Behav Ecol Sociobiol**. 40:199-207.

GRANTS AND AWARDS

- 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

GRANTS AND AWARDS (continued)

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**

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 the 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

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

The role of plant-microbe interactions in plant invasions

Soil Ecology Society 2005

PROFESSIONAL LECTURES, SYMPOSIUM, AND POSTERS (continued)

- 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

MANUSCRIPT AND GRANT PROPOSAL REVIEWS

Ecology, Ecological Applications, Ecology Letters, Planta, Oecologia, Journal of Ecology,
Oikos, Journal of Biogeography, Journal of Applied Ecology, American Journal of Botany,
Botany, Applied Vegetation Science, Basic & Applied Ecology, Biological Invasions,
Biotropica, Diversity & Distributions, Global Change Biology, Ecography, Functional
Ecology, Journal of Vegetation Science, International Journal of Plant Sciences, Acta
Oecologia, Australian Journal of Botany, Mycologia, Pedobiologia, Pedosphere, Soil Biology
& Biochemistry, Plant Ecology, Applied Soil Ecology, Plant & Soil, Weed Research,
American Midland Naturalist, Journal of the Torrey Botanical Society, Micologia Aplicada
International, National Science Foundation, New York Sea Grant Institute, and Research
Commission for Eidgenössische Technische Hochschule Zürich

PROFESSIONAL SERVICE

- 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
- 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
Mycological Society of America

PHOTOGRAPHY

Developer of educational website <http://iecology.net> including time-lapse videos and panorama
photography.

PHOTOGRAPHY (continued)

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)