JULIE BECKSTEAD
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*(*CV modified for website; contact me for complete CV)*

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EDUCATION

2001 Ph.D. Department of Plant Biology, University of Illinois at Urbana-Champaign. Advisor: Dr. Carol Augspurger.
1994 M.S. Department of Botany and Range Science, Brigham Young University, Provo, UT. Advisors: Drs. Bruce Smith and Susan Meyer.
1991 B.S. Departments of Biology and Secondary Education, Brigham Young University, Provo, UT. Cum Laude Honors.

PROFESSIONAL EXPERIENCE

2012-present Professor, Gonzaga University, Spokane, WA.
2007-2012 Associate Professor, Gonzaga University, Spokane, WA
2002-2007 Assistant Professor, Gonzaga University, Spokane, WA.
2000-2002 Postdoctoral Fellow, Univ. of California, Santa Cruz, Advisor: Dr. Ingrid Parker.
1994-1999 Teaching Assistant, Dept. of Plant Biology, University of Illinois (UIUC).
1997-1998 Course Coordinator, Dept. of Plant Biology, University of Illinois (UIUC).
1992-1994 Research Assistant, USDA Shrub Sciences Lab, Provo, UT.
1992-1993 Teaching Assistant, Dept. of Botany and Range Science, Brigham Young University.
1992 Teaching Consultant, Curricula Development, Nebo School District, UT.
1991-1992 Teacher, Springville Middle School, Springville, UT.
1991 Teaching Assistant, Dept. of Biology, Brigham Young University.

RESEARCH INTERESTS

My research focuses on restoration ecology and plant invasion biology from a community ecology perspective. For instance, I investigate the interplay between fungi and plants, examining how beneficial fungi may promote plant establishment and enhance survival in habitat restoration projects following wildfires. Additionally, I explore the possible role that fungal pathogens can play in controlling invasive plant species, primarily naturally occurring pathogens. Recent and ongoing studies include testing the Natural Enemies Hypothesis of invasion biology, natural resistance to invasion, spillover effects of a seed pathogen, and tools to facilitate restoration ecology. At present, my aim is to advance restoration efforts by uncovering microbial tools and other factors that enhance seedling establishment.

RESEARCH

Restoration ecology, Plant invasion biology, Plant endophyte research, Plant-pathogen interactions

RESEARCH IN THE NEWS

Cheatgrass-pathogen research has been featured in the local Spokesman Review newspaper; Titled "Weeding out a pest: 'Death' fungus offers hope" by James Hagengruber August 22, 2007. The article was picked up by the Associated Press and appeared in newspapers in California, Oregon, Washington, Idaho, Montana, and Utah along with online news organizations (i.e., MSNBC.com). In 2009, research was focused on National Public Radio Northwest radio "Fungus May Help Eradicate Invasive Cheatgrass in NW". In 2014, research was featured in a land management journal called SageSTEP News (Fall 2014 Issues 25; Title: "Decoding cheatgrass die-off in Great Basin Lands").

AWARDS AND HONORS

- Inspiring Women in STEM Award from *INSIGHT into Diversity* of higher education (prestigious national recognition as one of 100 women selected in the United States; June 3, 2015)
- Exemplary Faculty Award from Gonzaga University (April 21, 2015)
- Mentoring Undergraduate Research Award, 2001, Chancellor UC Santa Cruz (presented for mentoring and directing the research of Haivan V. Ngo's project selected for UC Day).
- Robert Emerson Memorial Award, 2000, School of Life Science, UIUC (presented to the outstanding graduating doctoral candidate).
- Ecology Best Talk Award, 2000, Graduate Students in Ecology and Evolutionary Biology Symposium, UIUC.
- Dissertation Completion Fellowship, 1999, Graduate College, UIUC.
- Outstanding Teacher in Plant Biology, 1997, School of Life Science, UIUC.
- Scholarship, Tropical Ecology, 1995, Organization for Tropical Studies (OTS), UIUC.
- Julia Greenwell Award, 1992-1994, Dept. Botany and Range Science, BYU.
- Elected to Phi Kappa Phi and Sigma Xi, 1994, BYU.

RESEARCH PATENT

United States Patent. No. US 9,622,487 B2. Inventors: Susan E. Meyer, Suzette Clement, and Julie Beckstead. Entitled: Annual Brome control using a native fungal seed pathogen. Provisional application filed August 3, 2011. Filed July 27, 2012. Issued April 18, 2017.

GRANTS AWARDED (*peer-reviewed nationally)

2022 Gonzaga University, GSRP (Gonzaga Science Research Program). Title: Applied Seed Microbiology for Restoration Ecology. Total Award: $8,750. Awarded Feb. 4, 2022.

*2021 USDA-NIFA, Research and Extension Experiences for Undergraduates (REEU). Title: Undergraduate training in applied plant microbiology for regenerative agriculture and habitat restoration in the Inland Northwest. PI: Mary Ridout, University of Idaho Extension. CoPI: George Newcombe, University of Idaho and Julie Beckstead, Gonzaga University. Total Award $291,665. Gonzaga: $106,039. Awarded February 4, 2021. Start date: July 1, 2021. End date: April 15, 2026.

*2021 USDA-AFRI, Research and Extension Experiences for Undergraduates (REEU). Title: Improving crops resiliency: multidisciplinary training of future agriculture leaders through research and extension. PI: Andrei Smertenko. Gonzaga: supporting letter to advertise to students for the program. J. Beckstead: Advisory Board to evaluate education activities and

goals of the proposal. Total Award: $400,000.00. Gonzaga Award: $0.00. Awarded February 4, 2021.

2020 Gonzaga University, GSRP (Gonzaga Science Research Program). Title: Development of Fungal Biocontrol. Total Award: $16,800. Awarded Feb.11, 2020.

2019 Gonzaga University, GSRP (Gonzaga Science Research Program). Title: Development of Fungal Biocontrol. Total Award: $10,600. Awarded Feb.11, 2019.

2019 Gonzaga University, GIEL (Gonzaga Inclusive Excellence in Learning). Title: Mentoring students in plant-pathogen research. Total Award: $6000. Awarded Feb. 11, 2019.

2018 Gonzaga University, College of Arts and Science, Faculty and Student Research Award. Title: Development of fungal Biocontrol. Total Award: $1384. Received Nov. 14, 2019.

*2014 Great Basin Landscape Conservation Cooperative (USDI and USDA). Title: Cheatgrass Stand Failure in the Great Basin: Fungal Pathogens, Litter Dynamics, and Fungistasis (with Dr. Susan Meyer, USDA Shrub Science Laboratory and Dr. Phil Allen, Brigham Young University). Total Award currently being determined: requested $98,150, receiving $73,208; Gonzaga Award: requested $46,130, receiving $18,047. Received October 2014. End date September 2017.

*2011 Joint Fire Science Program (USDI and USDA). Title: Enhancing the Effectiveness of Annual Grass Weed Biocontrol with the Black Fingers of Death Pathogen (*Pyrenophora semeniperda*). (with Dr. Susan Meyer, USDA Shrub Science Laboratory and Dr. Phil Allen, Brigham Young University). Total Award: $424,018; Gonzaga Award: $136,675. Received November 2011. End date May 2015.

2011 Bureau of Land Management (USDI). Understanding the Causes and Consequences of Cheatgrass Dieoffs in the Great Basin. (with Dr. Meyer USDA Shrub Science Laboratory; Drs. Leger, Weisberg and Forister from University of Nevada-Reno; Drs. Aanderud and Geary from Brigham Young University). Total Award: $360,300 for first 2 yrs; Gonzaga Award: $36,412. Received Sept. 2011. End date Dec. 2013.

*2009 NIFA Agriculture and Food Research Initiative (USDA). Title: Exotic *Bromus* grasses in agroecosystems of the western U.S.: REE-net synthesis of current and future invasions, impacts, and management. PI: Matt Germino. One of 26 experts selected to participate. Total Award: $199,704; Gonzaga Award: $0.00. Received Oct. 2009.

2009 Gonzaga University, Dean's Office College of Arts and Sciences. Donor Funds for Student Research. Title of Proposal: Gonzaga Undergraduate Biology Researchers Participate In National Scientific Evolution 2009 Meetings in Moscow, Idaho. Award: $2000.

*2008 Research Council Award, Gonzaga University. Title: GIS Mapping To Establish Conservation Priorities Along The Spokane River Centennial Trail. Award: $866.90.

*2007 CSREES National Research Initiative (USDA). Title: Evolutionary and Community Ecology of the Seed Bank Pathogen *Pyrenophora semeniperda* on Cheatgrass Dominated Rangelands. (with Dr. Meyer, USDA Shrub Science Laboratory; Drs. Allen, Coleman, and Stevens, Brigham Young University; and Dr. Boose, Gonzaga University). Total Award: $388,699; Gonzaga Award: $100,154. Received December 2007.

*2007 Joint Fire Sciences Program (USDI and USDA). Title: Annual brome biocontrol after wildfire using a native fungal seed pathogen. (with Dr. Susan Meyer, USDA Shrub Science Laboratory and Dr. Phil Allen, Brigham Young University). Total Award: $353,089; Gonzaga Award: $116,256. Received September 2007.

*2005 M.J. Murdock Charitable Trust. Murdock College Research Program for Life Sciences. Title: The invasive cheatgrass encounters a new seed pathogen: strategies to copy with infection

and consequences of these relations on native co-occurring plant species. Received April 2005 - $39,610.

2004-2014 McDonald Work Award, Gonzaga University. $700-1500 per award. These awards support student research in my lab (specific years and semesters: 2004 fall and spring, 2005 spring, 2006 spring and fall, 2007 spring and fall, 2008 spring, 2010 spring, 2011 fall, 2012 spring and fall, 2013 spring and fall, 2014 spring and fall, 2018 Fall, 2019 spring.

2003, '04, '07 Gonzaga Science Research Program Award, Gonzaga University. $14,000/award.

*2000 Postdoctoral grant, Weedy and Invasive Plants, USDA-NRI. Title: Invasiveness and impact of *Ammophila arenaria*: Release from soil-borne pathogens? $89,919.

1995-2000 Awards for dissertation research included 18 research grant awards from several funding sources, including national science organizations, university fellowships, and state science programs. Contact for more information.

PEER-REVIEWED BOOK CHAPTER

Meyer, SE, **J. Beckstead**, and J Franke. 2016. Community Ecology of Fungal Pathogens on *Bromus tectorum*. Pages 193-223. *In* M. Germino, J. Chambers, and C. Brown, editors. Exotic brome grasses in arid and semi-arid ecosystems of the western US: causes, consequences, and management implications. Springer International Publishing, Switzerland.

PEER-REVIEWED PUBLICATIONS (*sampling**denotes undergraduate student)

Meyer, SE, **J Beckstead**, PS Allen. 2018. Niche Specialization in *Bromus tectorum* Seed Bank Pathogens. Seed Science Research 28: 215-221.

Beckstead, J. SE Meyer, *TS Ishizuka, *KM McEvoy, and CE Coleman. 2016. Lack of Host Specialization on Winter Annual Grasses in the Seed Bank Pathogen *Pyrenophora semeniperda.* PLoS ONE 11(3): e0151058. DOI 10.1371/journal.pone.0151058.

Meyer, SE, M Masi, S Clement, *T Davis, and **J Beckstead**. 2015. Mycelial Growth Rate and Toxin Production in the Seed Pathogen *Pyrenophora semeniperda*: Resource Trade-offs and Temporally Varying Selection. Plant Pathology 64:1450-1460.

*Barth, CW, SE Meyer, **J. Beckstead**, and PS Allen. 2015. Modeling temperature and water potential effects on conidial germination and mycelial growth for a fungal seed pathogen using hydrothermal time. Fungal Biology 119:720-730.

Meyer, SE, *J Franke, *OW Baughman, **J Beckstead**, and B Geary. 2014 Does Fusarium-caused Seed Mortality Contribute to *Bromus tectorum* Stand Failure in the Great Basin? Weed Research 54:511-519.

Beckstead J, Meyer SE, Reinhart K, *Bergen K, *Holden S, *Boekweg H. 2014. Factors affecting host range in a generalist seed pathogen of semi-arid shrublands. Plant Ecology 215:427-440. DOI 10.1007/s11258-014-0313-3.

Robinson, RS and **J Beckstead.** 2014. Trends in numbers of winter bald eagles at Lake Coeur d'Alene in Idaho. Northwest Science 88(1):1-10.

Meyer, SE, KT Merrill, PS Allen, **J Beckstead**, and *AS Norte. 2014. Indirect Effects of an Invasive Annual Grass on Perennial Grass Seed Fates. Oecologia 174:1401-1413. DOI 10.1007/s00442-013-2868-4.

Beckstead J, *LE Miller, and *BM Connolly. 2012. Direct and indirect effects of plant litter on a seed-pathogen interaction in *Bromus tectorum* seed banks. Seed Science Research 22:135-144.

Beckstead, J, *AN Lagasse, and SR Robinson. 2011. Exploring the population dynamics of wintering bald eagles through long-term data. Teaching Issues and Experiments in Ecology Vol.7: Data sets [online]. http://tiee.esa.org/vol/v7/issues/data_sets/beckstead/abstract.html.

Beckstead, J, SE Meyer, *LE Street, and PS Allen. 2011. Effect of fire on a seed bank pathogen and on seeds of its host *Bromus tectorum*. Rangeland Ecology & Management 64:148-157.

*Dooley, SR and **J Beckstead**. 2010. Characterizing the interaction between a fungal seed pathogen and a deleterious rhizobacteria for cheatgrass control. Biological Control 53: 197-203.

Beckstead, J, SE Meyer, *BM Connolly, *MB Huck, and *LE Street. 2010. Cheatgrass facilitates spillover of a seed bank pathogen onto native grass species. Journal of Ecology 98:168-177.

Meyer, SE, **J Beckstead**, PS Allen, and DC Smith. 2008. A seed bank pathogen causes seedborne disease: *Pyrenophora semeniperda* on undispersed grass seeds in western North America. Canadian Journal of Plant Pathology: 30(4): 525-533.

Beckstead, J, SE Meyer, *CJ Molder, and *C Smith. 2007. A race for survival: can *Bromus tectorum* seeds escape *Pyrenophora semeniperda*-caused mortality by germinating quickly? Annals of Botany 99(5): 1-8.

Beckstead, J and CK Augspurger. 2004. An experimental test of resistance to cheatgrass invasion: limiting resources at different life stages. Biological Invasions 6(4): 417-432.

Beckstead, J and IM Parker. 2003. Invasiveness of *Ammophila arenaria*: release from soil-borne pathogens? Ecology 84(12): 2824-2831.

Additional publications not included…