Tanya E. Cheeke
Assistant Professor, School of Biological Sciences
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Education:

Doctor of Philosophy, Biology, Portland State University. Title: *An evaluation of the nontarget effects of Bacillus thuringiensis maize on arbuscular mycorrhizal fungi in the soil ecosystem.* Advisor: Mitchell Cruzan

Bachelor of Science, The Evergreen State College. *Emphasis*: Sustainable Agriculture, Environmental Science

Experience and Professional appointments:

2017 – present	**Assistant Professor**, School of Biological Sciences, Washington State University (WSU)
2015 – 2017	**National Science Foundation Postdoctoral Fellow**, Department of Biology, Indiana University (IU), Mentors: James Bever (Department of Biology), Yuzhen Ye (Informatics and Computing). Title: *Evaluating the role of plant-soil feedbacks in invaded grasslands*
2013 – 2015	**Carl Tryggers Postdoctoral Fellow,** Department of Forest Mycology and Plant Pathology, Swedish University of Agricultural Sciences (SLU) Mentors: Petra Fransson (SLU), Anna Rosling (Uppsala University), Richard Phillips (IU). Title: *Improving process level understanding of the roles of fungal mycelia in carbon sequestration in temperate forests*
2010 – 2013	**Environmental Protection Agency Science to Achieve Results Fellow,** Terrestrial Systems Soils and Plant Ecology Division
2011 – 2012	**Visiting Scholar**, Indiana University. Research training in molecular identification of arbuscular mycorrhizal fungi
2010	**Local Organizer**, *Evolution* Annual Meeting, Portland, OR
2005 – 2009	**Teaching Assistant**, Portland State University (PSU), Portland, OR

Grants and Fellowships:

2019	Washington State Wine Commission and the Washington Grape and Wine Research Program, *Effect of mycorrhizal inoculants on grapevine growth and nutrient uptake*, $25,000
2018	MJ Murdock Charitable Trust Partners in Science Program, *Evaluating the role of soil microbes in ecological restorations,* $15,000
2018	WSU ADVANCE Leadership Grant for Faculty Success Program, National Center for Faculty Development and Diversity, $3450

2018	WSU College of Arts and Sciences International Travel Grant for travel to the International Mycological Congress, San Juan, Puerto Rico, $1000
2018	International Mycological Congress Travel Grant, $500
2017	Meyers Point Environmental Field Station, Co-PIs T.E. Cheeke and S. Roley. *Intersections of plant communities, soil microbes, and biogeochemical processes in the ecological restoration of agricultural land*, $3000
2017	Alaska Airlines Imagine Tomorrow Travel Grant for travel to the International Mycological Congress, San Juan, Puerto Rico, $1858
2015	National Science Foundation Postdoctoral Fellowship in Biology, *Evaluating the role of plant-soil feedbacks in invaded grasslands,* $138,000
2014	Indiana Academy of Sciences, Senior Research Grants Program $2,908
2014	NSF REU Supplement Grant (co-written with PI Phillips) $7,000
2011	Sigma Xi Grant in Aid of Research $1,100
2010	Environmental Protection Agency STAR Fellowship $111,000
2010	Sigma Delta Epsilon-Graduate Women in Science Grant $3,000
2010	*Create a modern student commons in Science Building 2*. M. Kaiser, T.E. Cheeke, L. Bliss-Ketchum, T. Davidson, M. Eastman. $300,000
2010	NSF Doctoral Dissertation Improvement Grant $15,000
2009	Lindbergh Foundation $10,580

Honors and awards:

2017	Mycological Society of America Translational Mycology Postdoctoral Research Award $1200
2016	Early Investigator Award, New Phytologist Trust
2015	Mycological Society of America Forest Fungal Ecology Postdoctoral Research Award $2,500
2013	Dean's Award for Outstanding Academic Achievement, College of Liberal Arts and Sciences, Portland State University
2012	EcoService Award, Honored Distinction, Union of Concerned Scientists
2010	Botanical Society of America Graduate Student Research Award $500
2009	Best Student Oral Presentation, ESA Annual Meeting, Albuquerque, NM
2009	PSU President's Award for Outstanding University Service

Publications: (*undergraduate co-author)

Cheeke, T. E., Zheng, C., Koziol, L., Gurholt, C., J. Bever. 2019. *Ecology.* Sensitivity to AMF species is greater in late-successional than early-successional native or non-native plants. Accepted July, 2019. Awaiting DOI.

Cheeke, T. E., Phillips, R. P., Brzostek, E. R., Rosling, A., Bever, J. D. and P. Fransson. 2017. Dominant mycorrhizal association of trees alters carbon and nutrient cycling by selecting for microbial groups with distinct enzyme function. New Phytologist. 214: 432–442. *Highlighted in*

the Meetings summary of New Phytologist: Chagnon P-L, Rineau F, Kaiser C. 2016. New Phytologist 209 (3): 913-916.

Rosling, A., Midgley, M., **Cheeke, T. E.,** Fransson, P., and R.P. Phillips. 2016. Phosphorus cycling in deciduous forest soil differs between stands dominated by ecto- and arbuscular mycorrhizal trees. New Phytologist. 209:887-1323. *This study was highlighted in a Commentary: Kuyper and Koele 2016, New Phytologist, 209 (3): 894–895.*

Kolseth, A.K., D'Hertefeldt, T., Emmerich, M., Forabosco, F., Marklund, S., **Cheeke, T.E.,** Hallin, S., and M. Weih. 2015. Influence of genetically modified organisms on agro-ecosystem processes. Agriculture, Ecosystems and Environment. 214: 96-106.

Cheeke, T. E., Schutte, U.M.E., Hemmerich, C.M., Cruzan, M.B., Rosenstiel, T.N., and J.D. Bever. 2015. Spatial variation and heterogeneity in the field has a greater effect on the composition of AMF communities than *Bt* genetic insertion. Molecular Ecology. 24: 2580-2593.

Cheeke, T. E., Darby, H.*, Bever, J. D., Rosenstiel, T. N., and M. B. Cruzan. 2014. Effect of *Bt* maize cultivation history on arbuscular mycorrhizal fungal colonization, spore abundance and diversity, and plant growth. Agriculture, Ecosystems and Environment. 195: 29-35.

Cheeke, T. E., Cruzan, M. B., and Todd N. Rosenstiel. 2013. A field evaluation of arbuscular mycorrhizal fungal colonization in multiple lines of *Bt* and non-*Bt* maize. Applied and Environmental Microbiology. 79(13): 4078-4086.

Cheeke, T. E., Rosenstiel, T. N., and Mitchell B. Cruzan. 2012. Evidence of reduced arbuscular mycorrhizal fungal colonization in multiple lines of *Bt* maize. American Journal of Botany. 99(4): 700-707. *This study was featured on the journal cover.*

Cheeke, T. **E**., Pace, B. A.*, Rosenstiel, T. N., and Mitchell B. Cruzan. 2011. The influence of fertilizer level and spore density on arbuscular mycorrhizal colonization of transgenic *Bt* 11 maize (*Zea mays*) in experimental microcosms. FEMS Microbiology Ecology. 75: 304-312.

Book chapters (peer-reviewed)

Cheeke, T. E. 2012. Effects of the cultivation of genetically modified *Bt* crops on nontarget soil organisms. In: Microbial Ecology in Sustainable Agroecosystems. Advances in Agroecology Series. Cheeke, T. E., Coleman, D.C., Wall, D.H. (Eds.) Boca Raton: CRC Press. pp. 153-227.

Books – edited volumes

Cheeke, T.E., Coleman, D. C., Wall, D.H. (Editors) 2012. Microbial Ecology in Sustainable Agroecosystems. Advances in Agroecology Research. Boca Raton: CRC Press.

Other articles, reports:

Bever, J.D., Bauer, J.T., House, G.L., **Cheeke, T.E.,** Koziol, L. Tipton, A., Schultz, P.A., Copprick, P.R., Duell, E.B., Zaiger, K.L., Wilson, G.W., and K.R. Hickman. 2017. Soil microbial communities: Critical roles in control of non-native invasive species and restoration of ecosystem functions. SERDP Project R3-2330. Indiana University, Bloomington, Indiana, USA.

Cheeke, T.E., Branco, S., Haelewaters, D., Natvig, D.O., Maltz, M., Cantrell Rodriguez, S., Cafaro, M.J., and Georgiana May. 2018. Diversity in the Mycological Society of America. Inoculum (MSA society newsletter, March 2018).

Teaching:

Fall 2019	Plants and People (Bio 401, Capstone course), WSU
Summer 2019	Special Problems (Bio 499, student research), WSU
Spring 2019	General Microbiology (MBios 305), WSU
Fall 2018	Plants and People (Bio 401, Capstone course), WSU
Fall 2018	Special problems (Bio 499; student research), WSU
Summer 2018	Special problems (Bio 499; student research), WSU
Spring 2018	General Microbiology (MBios 305), WSU
Spring 2018	Special problems (Bio 499; student research), WSU
Fall 2009	Research and Society (BI 480), Teaching Assistant, PSU
2007-2009	Molecular Methods in Microbiology (BI 488/588; lab), Teaching Assistant, PSU
2007-2009	Introduction to Microbiology (BI 235; lab), Teaching Assistant, PSU
Spring 2006	Genes and Society (BI 341), Teaching Assistant, PSU
2005-2006	Principles of Biology (BI 251, BI 252; lab), Teaching Assistant, PSU

Invited Lectures:

2019	Graduate student invited seminar speaker, Tyson Research Center, Washington University, St. Louis, MO
2019	University of California Riverside, Riverside, CA
2018	Washington State University, Dept. of Crop and Soil Science, Pullman, WA
2018	Idaho Native Plant Society, Moscow, ID
2018	WSU-Irrigated Agriculture Research and Extension Center, Prosser, WA
2018	Eastern Washington University, Cheney, WA
2017	Pacific Northwest National Laboratory, Richland, WA
2017	Washington State University, Vancouver, WA
2017	Washington State University, Pullman, WA
2017	University of Idaho, Moscow, ID
2017	Missouri State University, Springfield, MO
2017	Washington State University, Richland, WA
2016	Towson University, Towson, MD
2016	University of Kansas, Lawrence, KS
2016	Western Illinois University, Macomb, IL
2016	University of Missouri, Columbia, MO

2016 University of Montana, Missoula, MT
2016 Cleveland State University, Cleveland, OH
2014 Indiana University, Bloomington, IN
2014 Lewis and Clark College, Portland, OR
2013 Army Polytechnic School, Sangolquí, Ecuador (via Skype)
2013 Swedish University of Agricultural Sciences, Uppsala, Sweden
2013 Shahala Middle School, Vancouver, WA
2012 Indiana University, Bloomington, IN

Invited Presentations at Scientific Meetings:

2018 Society for Ecological Restoration, Invited presentation for symposium: Prairie Restoration in the Inland Northwest. Talk title: *Testing the efficacy of soil microbial transplants to facilitate the establishment of native prairie plants in invaded grasslands*. *Upcoming October 2018, Spokane, WA*

2018 International Mycological Congress, Invited presentation for symposium: Boosting Diversity in Mycology. Talk title: *Diversity in the Mycological Society of America.* San Juan, Puerto Rico

2017 Ecological Society of America, Invited Speaker, Organized Oral Session: Plant-Soil Interactions in a Changing World: Exploring the interface between global change drivers and plant-soil feedbacks. Talk title: *Does reintroducing native soil organisms improve plant restoration efforts?* Portland, OR

2016 Mycological Society of America, Invited Symposium: Ecology of Fungal Invasions Symposium – Talk title: *Mycorrhizal responsiveness differs among non-native and native prairie plants*, Berkeley, CA

Contributed Presentations at Scientific Meetings:

2016 Mycological Society of America – Poster title: *Diversity in the Mycological Society of America*, Berkeley, CA

2015 International Conference on Mycorrhiza – Talk title: *Mycelial production and standing fungal biomass are higher in temperate hardwood forests dominated by ectomycorrhizal trees than in forests dominated by arbuscular mycorrhizal trees*. Flagstaff, AZ

2015 Botanical Society of America/Mycological Society of America – Talk title: *Mycelial production and standing fungal biomass are higher in temperate hardwood forests dominated by ectomycorrhizal trees than in forests dominated by arbuscular mycorrhizal trees.* Edmonton, Alberta

2014 Mycological Society of America – Poster title: *Mycelial production and turnover differ in temperate hardwood forests dominated by arbuscular mycorrhizal trees versus ectomycorrhizal trees*. East Lansing, MI

2012 Ecological Society of America (ESA) – Talk title: *An evaluation of AMF colonization in split-plots of Bt and non-Bt maize.* Portland, OR

2011 Environmental Protection Agency Science to Achieve Results Fellowship Conference – Poster title: *Genetically modified corn: Nontarget effects of insect-resistant Bt corn on symbiotic soil fungi.* Washington D.C.

2011	ESA – Talk title: *A field evaluation of AMF colonization in multiple Bt maize lines.* Austin, TX
2010	Botanical Society of America – Talk title: *Transgenes in maize: Evidence of reduced AMF colonization in multiple Bt maize lines.* Providence, RI
2010	Evolution – Talk title: *Transgenes in maize: Evidence of reduced AMF colonization in multiple Bt maize lines.* Portland, OR
2010	Food and Bloom conference – Talk title: *Transgenes in maize: Evidence of reduced AMF colonization in multiple Bt maize lines.* Bloomington, IN
2010	EvoWIBO – Poster title: *Transgenes in maize: Evidence of reduced AMF colonization in multiple Bt maize lines.* Port Townsend, WA
2009	ESA – Talk title: *Transgenes in maize: Evidence of reduced AMF colonization in multiple Bt maize lines.* Albuquerque, NM
2008	ESA – Talk title: *Effects of nutrient stress on the colonization of mycorrhizal fungi in transgenic Bt corn*. Milwaukee, WI

Outreach and Education:

2019	Science Extravaganza, Good and Bad Microbes" using a bread dough activity (yeast) and hand washing activity (germs) with preschoolers, Children's Garden Montessori, Richland, WA
2018	Idaho Native Plant Society, Moscow, ID – Invited talk title: *Harnessing the power of soil microbes for ecological restorations*
2018	Science Extravaganza, DNA extraction from strawberries with preschoolers, Children's Garden Montessori, Richland, WA
2017	*Role of mycorrhizal fungi in ecological restorations*. Eco Logic LLC, Bloomington, Indiana
2017	*Role of mycorrhizal fungi in ecological restorations*. City of Bloomington Parks and Recreation Department, Bloomington, Indiana
2016	Donated plants and set up native butterfly garden at Sunflower Daycare for Earth Day, Indiana University, Bloomington, IN
2013	*The wonderful world of soil microbes*. Middle school science classes, Shahala Middle School, Vancouver, WA
2012	*The science of seeds and seed dispersal.* Science Night, Grandview Elementary School, Bloomington, IN
2011	*The science of seed dispersal.* Science Night, The Bloomington Project School. Bloomington, IN
2009 – 2011	Darwin Day, co-organizer, Portland State University

Professional Service:

2018-2019	Mycological Society of America Diversity and Inclusion Committee
2018	WSU CAHNRS Search Committee for Rhizosphere Ecologist, Fall 2018
2018	EMSL grant review panel, Pacific Northwest National Lab, Richland, WA
2017	USDA grant review panel, Washington DC
2016 - 2017	Chair of the Mycological Society of America Diversity Committee
2016	Panelist for professional development workshop for IU women in science

2016	NSF Proposal Reviewer (Ad hoc), Division of Environmental Biology
2016	Organized a Professional Development workshop for students and postdocs at the Mycological Society of America meeting, Berkeley, CA
2016	Organized "Careers in Mycology, Interactive Luncheon" at the Mycological Society of America meeting, Berkeley, CA
2015-2016	Ecology Committee, Mycological Society of America
2015-2016	Diversity Committee, Mycological Society of America, Founding member
2014-2016	Postdoc Representative, Mycological Society of America
2012-present	Reviewer of manuscripts for Fungal Ecology, Soil Biology and Biochemistry, Science, Environmental Evidence, European Journal of Soil Biology, Journal of Applied Ecology, Research in Microbiology, Mycologia, Plant and Soil, New Phytologist, Functional Ecology, Botany, Mycorrhiza, Molecular Ecology, Restoration Ecology
2013	Intel science fair judge, Plant Sciences. Portland, OR
2011– 2012	Promotion and Tenure Committee, Graduate Student Representative, PSU
2011	Session Organizer and Moderator, *Recruitment and Retention of Underrepresented Students in the Sciences*, Environmental Protection Agency STAR Fellows Conference
2011	Student Advisory Council, EPA STAR Conference
2010 – 2011	Promotion and Tenure Committee, Graduate Student Representative, PSU
2010 – 2011	Faculty Liaison, Biology Graduate Student Association, PSU
2008 – 2010	President, Biology Graduate Student Association, PSU
2009	Faculty Hiring Committee, Graduate Student Representative, PSU
2009	McNair Scholar mentor, PSU
2009	Moderator, Ronald E. McNair Research Conference, PSU
2009	Soil microbiology workshop coordinator, Master Gardener Organic Certification Program, Oregon State University
2009	ESA Symposium organizer: *How can soil microbial ecology contribute to the sustainability of agricultural systems?* Albuquerque, NM
2007 – 2008	Secretary/Treasurer, Biology Graduate Student Association, PSU
2006 – 2013	Mentor in the Cruzan and Rosenstiel labs, PSU

Students mentored, trained, and/or supervised: (*independent research project)

2019	Gunnar Wickenhagen, undergraduate researcher, WSU
2019	Jeanette Lilly, undergraduate researcher, WSU
2019	Nicholas Sconzo, undergraduate researcher, WSU
2019	Noah Nilson, undergraduate researcher, WSU
2019	Alea Taylor, undergraduate researcher, WSU
2019	*Javier Chavez Lara, undergraduate researcher, WSU
2019	Patrick Zecchino, undergraduate researcher, Washington State University
2019	Marcy McCall, undergraduate researcher, Washington State University
2018-present	*Austin Frewert, Masters student, Washington State University
2018-present	*Gunner Davies, Masters student, Washington State University
2018-2019	*Megan Brauner, Chancellor Summer Scholar, Washington State Univ.
2018-2019	*Tristan Anderson, post-bacc researcher, Washington State University

2018-present	Ashley Finnestad, undergraduate researcher, Washington State University
2018-2019	Sabrina Sandhu, undergraduate researcher, Washington State University
2018	*Ella Krinitsyn, Chancellor Summer Scholar, WSU
2018	*Mary Schneider, Honors Thesis, Washington State University
2018	Gerard Lomas, undergraduate researcher, Washington State University
2018	Shadan Abdali, undergraduate researcher, Washington State University
2018	Lupita Gomez, undergraduate researcher, Washington State University
2018	Bryndalyn Corey, undergraduate researcher, Washington State University
2018	Catalina Yepez, undergraduate researcher, Washington State University
2018	Jasmine Gonzales, undergraduate researcher, Washington State University
2017-2018	Alifya Saify, Lab manager, Washington State University
2016-2017	*K.C. Cifizzari, McNair Scholar, Indiana University
2016-2017	Jake Graham, Lab technician, Indiana University
2016-2017	Alifya Saify, Lab technician, Indiana University
2016	Alex Varney, Lab technician, Indiana University
2016	Wendy Anderson, Lab Manager, Indiana University
2016	T.K. Williams, Lab technician, Indiana University
2016	Jacob Hopkins, Lead Lab Technician, Indiana University
2016	Jaclyn Gill, Lab technician, Indiana University
2016	Vanessa Snyder, Lab technician, Indiana University
2014	*Alex Kuhn, NSF REU student, Phillips lab, Indiana University
2014	Robin Johnson, undergraduate researcher, Phillips lab, Indiana University
2013	Sarah Arteaga, post-baccalaureate, Cruzan lab, Portland State University
2011 – 2013	Scott Kiel, undergraduate researcher, Cruzan lab, PSU
2009 – 2013	*Kiernan Garrett, high school intern: Science fair project: *Effects of elevated CO_2 on mycorrhizal fungi in corn and soybeans*
2009 – 2013	*Alessandra Elliott, high school intern: Science fair project: *Effects of elevated CO_2 on mycorrhizal fungi in corn and soybeans*
2011 – 2012	*Ann Rasmussen, post-baccalaureate researcher, Cruzan lab, PSU (currently a Masters student at University of Mississippi).
2011 – 2012	*Erik Hasenkopf, undergraduate researcher, Cruzan lab, PSU
2010 – 2012	*Hayley Darby, post-baccalaureate researcher, Cruzan lab, PSU (currently a Masters student at University of British Columbia)
2010 – 2012	*Luke Reyes, undergraduate researcher. Senior Honor's Thesis completed Spring 2011, Concordia University. *Root acid invertase activity in transgenic maize.* Cruzan lab, Portland State University
2008 – 2012	Matt LaPlante, undergraduate researcher, Cruzan lab, PSU
2010 – 2011	Jennifer Jones, undergraduate researcher, Cruzan lab, PSU (currently a PhD student at University of Illinois Urbana-Champaign)
2009 – 2010	Danielle Butler, undergraduate researcher, Cruzan lab, PSU
2009 – 2010	Belma Hergic, undergraduate researcher, Cruzan lab, PSU (currently a Masters student at University of Tennessee).
2009	*Denissia Withers, McNair Scholar, Portland State University. Thesis: *Community Learning Garden Programs in the Portland Area: How do Learning Gardens help low-income families access fresh locally grown foods?* (Received her Masters degree at Portland State University).

2007 – 2009	*Corey Guidry, undergraduate researcher, Cruzan lab, PSU
2008 – 2009	Dan Kowalkiewicz, undergraduate researcher, Cruzan lab, PSU
2008	Madeline Steele, post-baccalaureate researcher, Cruzan lab, PSU
2007	Melia Chase, high school summer intern, Cruzan lab, PSU
2007	Sage Wagner, high school summer intern, Cruzan lab, PSU
2007	Emily Fielding, undergraduate researcher, Cruzan lab, PSU
2006 – 2008	*Brian Pace, undergraduate researcher, Cruzan lab, PSU, Senior Honor's Thesis. *Effects of Nutrient Stress in Genetically Modified Bt Corn: Infectivity of Mutualistic Vesicular-Arbuscular Mycorrhizal Fungi* (currently a PhD candidate at The Ohio State University).

Professional Affiliations: Mycological Society of America, Ecological Society of America, Society for Ecological Restoration