

ABBREVIATED CURRICULUM VITAE

PATRICK C. TOBIN

WORK ADDRESS

123B Anderson Hall, 3715 W. Stevens Way, NE, School of Environmental and Forest Sciences,
University of Washington, Seattle, WA 98195-2100.

Voice: 206-685-7588; FAX: 206-685-0790; Email: pctobin@uw.edu

EDUCATION

Ph.D. (2002), Entomology, Minors in Statistics and Operations Research, The Pennsylvania State
University, University Park, PA.

M.S. (1997), Entomology, The Pennsylvania State University, University Park, PA.

B.S. (1991), Environmental Health Sciences, The University of Georgia, Athens, GA.

PROFESSIONAL EXPERIENCE

2023 – Present Professor of Disturbance Ecology, School of Environmental and Forest
Sciences, University of Washington

2023 – Present Professor, Quantitative Ecology and Resource Management Program,
University of Washington.

2019 – Present David R.M. Scott Endowed Professor in Forest Resources

2017 – 2023 Associate Professor of Disturbance Ecology, School of Environmental and
Forest Sciences, University of Washington

2014 – 2017 Assistant Professor of Disturbance Ecology, School of Environmental and
Forest Sciences, University of Washington

2010 – 2014 Research Entomologist (GS-14), USDA Forest Service, Northern Research
Station, Morgantown, WV.

2006 – 2010 Research Entomologist (GS-13), USDA Forest Service, Northern Research
Station, Morgantown, WV.

2003 – 2006 Research Entomologist (GS-12), USDA Forest Service, Northern Research
Station, Morgantown, WV.

2002 – 2003 Research Entomologist (GS-11, Post-Doctoral), USDA Agricultural Research
Service, Beneficial Insects Introduction Research, Newark, DE.

2002 Postdoctoral Research Associate, Department of Entomology, The
Pennsylvania State University, University Park, PA

1999 – 2002 Graduate Research Fellow (Ph.D.), U.S. Environmental Protection Agency
Science to Achieve Results Program, The Pennsylvania State University,
University Park, PA.

1998 – 1999 Graduate Research Assistant (Ph.D.), Department of Entomology, The
Pennsylvania State University, University Park, PA.

1995 – 1997 U.S. Peace Corps Campus Recruiter (M.S. Graduate Research Assistantship),
Office of International Agricultural Programs, The College of Agriculture, The
Pennsylvania State University, University Park, PA.

1992 – 1994 U.S. Peace Corps Volunteer, Program in Urban Environmental Management,
Séguéla, Republic of Côte d'Ivoire.

HONORS AND PROFESSIONAL RECOGNITION

- 2016 Faculty Member of the Year, School of Environmental and Forest Sciences
- 2015 Rogel Endowed Faculty Support Fund
- 2014 Leadership and Professional Service Award, National Gypsy Moth Management Board
- 2012 Faculty Member, Faculty of 1000, *F1000Prime* (Population Ecology)
- 2010 Early Career Innovation Award, Entomological Society of America.
- 2006 USDA Forest Service, Northeastern Research Station, Early Career Scientist Award.
- 2005 Recognized by the *Oikos* Editorial Office for a “High Profile Paper” published in *Ecography* (Tobin 2004).
- 2001 Lloyd Adams Memorial Grant-In-Aid, Pennsylvania State University, University Park, PA.
- 2000 Michael E. Duke Memorial Award, Pennsylvania State University, University Park, PA.
- 1999 Ph.D. Fellowship, U.S. Environmental Protection Agency Science to Achieve Results (S.T.A.R.) Program.
- 1998 Dow Agro Sciences National Graduate Student Award for Leadership in Applied Entomology.
- 1997 LaMarr W. Kopp Graduate Student International Achievement Award, The Pennsylvania State University, University Park, PA.
- 1997 Pi Chi Omega National Professional Pest Control Fraternity Scholarship, The Pennsylvania State University, University Park, PA.
- 1996 Pi Chi Omega National Professional Pest Control Fraternity Scholarship, The Pennsylvania State University, University Park, PA.

PROFESSIONAL SERVICE: External

- 2023 External Tenure Reviewer, Department of Forestry and Environmental Resources, North Carolina State University, Raleigh, North Carolina
- 2022 Grant Panel Member, U.S. Department of Defense, Strategic Environmental Research and Development Program
- 2022 Grant Panel Member, Fund for Scientific Research (Belgium) (Ad hoc)
- 2020-present Working Group Member, “Forecasting high-impact insect invasions by integrating probability models with i-Tree from urban to continental scales, "USDA Forest Service National Urban and Community Forestry Challenge Cost-Share Working Group
- 2020 Grant Panel Member, U.S.-Israel Agricultural Research and Development Fund (Ad hoc)
- 2020 External Tenure Reviewer, Department of Biological Sciences, Oakland University, Rochester, Michigan
- 2018 External Tenure Reviewer, Centre for Invasion Biology, Stellenbosch University, Stellenbosch, South Africa
- 2016-2020 Co-Lead, USGS John Wesley Powell Center for Analysis and Synthesis Working Group on “Predicting the next high-impact insect invasion: Elucidating factors determining the risk of introduced herbivorous insects on North American native plants”
- 2016 Grant Panel Member, French National Research Agency, Environmental Health Panel (Ad hoc).
- 2015 Grant Panel Member, USDA NIFA, Agroecosystems Panel, Washington D.C.
- 2013-2018 Editorial Board, *F1000Research*.
- 2013-2018 Member, Board of Directors, Natural Sciences and Engineering Research Council of

- Canada, TRIA-Net: Turning Risk into Action for the Mountain Pine Beetle Epidemic.
- 2013 External Tenure Reviewer, Department of Entomology, University of Minnesota, St. Paul, Minnesota
- 2013 Ad Hoc Grant Reviewer, NSF Decision, Risk, and Management Sciences Program.
- 2012 External Grant Reviewer, Argentina Ministry of Agriculture, Sustainable Plantation Forest Grants Program.
- 2011 Member, External Reviewer Team, USDA APHIS NAPPFAST Program.
- 2011 Grant Panel Member, USDA NIFA, Insects and Nematodes in Plant Systems, Washington D.C.
- 2010 Grant Panel Member, USDA NIFA, Insects and Nematodes in Plant Systems, Washington D.C.
- 2010 Judge, Buell and Braun Awards for Best Student Presentations, Annual Meeting of the Ecological Society of America.
- 2010 Ad Hoc Grant Reviewer, West Virginia University Faculty Senate Public Service Grants Program.
- 2009 Grant Panel Member, USDA CSREES, Food and Agricultural Sciences National Needs Fellowship Program, Washington D.C.
- 2008-2010 Working Group Member, “Applying population ecology to strategies for eradicating invasive forest insects,” National Center for Ecological Analysis and Synthesis, Santa Barbara, CA.
- 2005-2015 Research Liaison to the Gypsy Moth Slow the Spread Foundation Board of Directors.
- 2004-2016 Chair, Gypsy Moth Technical Advisory Committee.
- 2004-2015 Research Representative to the Executive Committee of the National Gypsy Moth Management Board
- 2005-2013 Subject Matter Editor, *Environmental Entomology*.
- 2005 Chair, Subsection in Quantitative Ecology, Entomological Society of America.
- 2004 Secretary, Subsection in Quantitative Ecology, Entomological Society of America.
- 2004-2007 Judge, Graduate Student Poster and/or 10-minute Paper Competition, Annual Meeting of the Entomological Society of America.

LEADERSHIP IN ORGANIZING CONFERENCES AND SYMPOSIA

- 2023 Conference Host and Chair of the Program Committee, Western Forests Insect Work Conference, Seattle, Washington
- 2018 Co-organizer (with Dylan Parry, SUNY-ESF), Symposium on “The Gypsy Moth (*Lymantria dispar* L.) at 150: Contributions to the development of invasion ecology,” Joint annual meeting of the Entomological Society of America, Entomological Society of Canada, and the Entomological Society of British Columbia, Vancouver, British Columbia.
- 2018 Co-organizer (with Allan Carroll, UBC and Kyle Haynes, UVA), Symposium on “Climate Change: Shifts in the geographical ranges and outbreak dynamics of forest insect pests and impacts on forest health,” Joint annual meeting of the Entomological Society of America, Entomological Society of Canada, and the Entomological Society of British Columbia, Vancouver, British Columbia.
- 2016 Co-organizer (with Dylan Parry, SUNY-ESF and Christelle Robinet, INRA-France), Symposium on “Forest insect invasions in a changing climate: mechanisms and risks,” International Congress of Entomology, Orlando, FL.

- 2014 Co-organizer (with Christelle Robinet, INRA-France), Symposium on “Changes in distributional ranges in a changing world,” 2014 IUFRO World Congress, Salt Lake City, UT.
- 2013 Chair of the Planning Committee, 2013 Annual Gypsy Moth Review, Evanston, IL.
- 2012 Co-organizer (with Yong Lak-Park, West Virginia University), Symposium on “Spatial dynamics and movement of insect pests,” International Congress of Entomology, Daegu, Korea.
- 2012 Member, Planning Committee, 18th Central Hardwood Forest Conference, Morgantown, WV.
- 2011 Co-organizer (with Brian Aukema, University of Minnesota), Symposium on “Climate change and trophic interactions,” North American Forest Insect Work Conference, Portland, OR.
- 2011 Organizer, Symposium on “Forest insect eradication: theory and practice,” North American Forest Insect Work Conference, Portland, OR.
- 2011 Organizer, Symposium on “Forest insect eradication,” USDA Interagency Research Forum on Invasive Species, Annapolis, MD.
- 2010 Member, Planning Committee, 2010 Annual Gypsy Moth Review, Durham, NC.
- 2010 Organizer, Symposium on “The spread of invasive species,” USDA Interagency Research Forum on Invasive Species, Annapolis, MD.
- 2008 Co-organizer (with Brian Aukema, Canadian Forest Service and Hugh Evans, Forestry Commission-United Kingdom), Symposium on “Expansion of forest insect species and outbreak ranges,” 2008 International Congress of Entomology, Durban, South Africa.
- 2007 Co-Chair of the Planning Committee, 2007 Annual Gypsy Moth Review, Shepherdstown, WV.
- 2006 Chair of the Planning Committee, 2006 Annual Gypsy Moth Review, St. Louis, MO.
- 2006 Track Coordinator-Invasive Species, North American Forest Insect Work Conference, Asheville, NC
- 2006 Co-organizer (with Sandy Liebhold, USDA Forest Service), Symposium on “Quantitative approaches to understanding insect invasions in forests,” North American Forest Insect Work Conference, Asheville, NC.
- 2005 Member, Planning Committee, 2005 Annual Gypsy Moth Review, Conshohocken, PA.

LEADERSHIP IN ORGANIZING TECHNICAL WORKSHOPS

- 2014 Organizer and Chair, Gypsy Moth Slow-the-Spread Technical Committee Meeting, Nashville, IN.
- 2013 Organizer and Chair, Gypsy Moth Slow-the-Spread Technical Committee Meeting, Blacksburg, VA.
- 2012 Organizer and Chair, Gypsy Moth Slow-the-Spread Technical Committee Meeting, Morgantown, WV.
- 2011 Organizer and Chair, Gypsy Moth Slow-the-Spread Technical Committee Meeting, Cambridge, OH.
- 2010 Organizer and Chair, Gypsy Moth Slow-the-Spread Technical Committee Meeting, Madison, WI.
- 2009 Organizer and Chair, Gypsy Moth Slow-the-Spread Technical Committee Meeting, Asheville, NC
- 2008 Organizer and Chair, Gypsy Moth Slow-the-Spread Technical Committee Meeting, Morgantown, WV.

- 2007 Organizer and Chair, Gypsy Moth Slow-the-Spread Technical Committee Meeting, Minneapolis, MN.
- 2006 Organizer and Chair, Gypsy Moth Slow-the-Spread Technical Committee, Blacksburg, VA.
- 2005 Organizer and Chair, Gypsy Moth Slow-the-Spread Technical Committee Meeting, USDA APHIS, OTIS Air National Guard Base, Buzzards Bay, MA.
- 2005 Co-organizer, 5-year Review of the Gypsy Moth Slow-the-Spread Program, USDA Forest Service, Forest Health Protection–Washington Office, Raleigh, NC.
- 2005 Organizer and Chair, Gypsy Moth Slow-the-Spread Technical Committee Meeting, Grand Marais, MN.
- 2004 Organizer and Chair, Gypsy Moth Slow-the-Spread Technical Committee Meeting, Madison, WI.

SERVICE: University of Washington

- 2018-2019 Royalty Research Fund, Subcommittee for the Basic Biological and Biomedical Sciences

SERVICE: College of the Environment

- 2019-2022 UW Graduate Council Representative
- 2018 Labs Unlocked: Beetles, Blazes and Biofuels
- 2017-2019 College Council Alternate, School of Environmental and Forest Sciences
- 2016 Meet, Greet, Teach: Teaching in Context
- 2015 Science Inside Out

SERVICE: School of Environmental and Forest Sciences

- 2023-Present Promotion and Tenure Committee
- 2022-Present Research Committee
- 2018-2022 Scholarship Committee
- 2020 Chair, Holistic Admissions Task Force
- 2018-2021 Graduate Program Coordinator
- 2015-2020 Curriculum Committee
- 2017-2018 Faculty Search Committee, UW Botanic Gardens Director
- 2016-2020 Coordinator-Peace Corps Masters International Program
- 2014-2016 Lands and Educational Outreach Committee

MENTORSHIP AND TEACHING

Post-Doctoral Mentorship

- 2016-2018 Angela Mech, School of Environmental and Forest Sciences, University of Washington
- 2004-2007 Stefanie Whitmire, USDA Forest Service, Northern Research Station

Graduate Student Mentorship (as committee chair): *Current*

- 2023-present Gissella Quiroga (MS)
- 2023-present Marlee Theil (MS)
- 2020-present Ryan Garrison (PhD)
- 2020-present Autumn Maust (PhD)

Participation on Graduate Student Committees: *Current*

- 2023-present Amelia Keyser-Gibson (MS), School of Environmental and Forest Sciences, University of Washington.
- 2023-present Fern Crossway (MS), School of Environmental and Forest Sciences, University of Washington.
- 2023-present Melissa Leon Norena (PhD), Department of Biology, University of Washington (GSR)
- 2022-present Madeleine Strait (PhD), Department of Biology, University of Washington (GSR)
- 2022-present Sandeep Jandu (PhD), Department of Biology, University of Washington (GSR)
- 2020-present Natalia Guayazan Palacios (PhD), Department of Biology, University of Washington (GSR)

Graduate Student Mentorship (as committee chair/co-chair): *Graduated*

- 2017-2022 Alex Pane (PhD), School of Environmental and Forest Sciences, University of Washington.
- 2016-2021 Lila Westreich (PhD), School of Environmental and Forest Sciences, University of Washington.
- 2016-2020 Michael Bradshaw (PhD), School of Environmental and Forest Sciences, University of Washington.
- 2016-2020 Ryan Garrison (MS), School of Environmental and Forest Sciences, University of Washington.
- 2016-2020 Scott Elliott (PCMI), School of Environmental and Forest Sciences, University of Washington.
- 2015-2020 Spencer Swanson (PCMI), School of Environmental and Forest Sciences, University of Washington.
- 2015-2019 Jaime Wilson (PCMI), School of Environmental and Forest Sciences, University of Washington.
- 2016-2018 Jacob Betzen (MS), School of Environmental and Forest Sciences, University of Washington.
- 2015-2017 Sean Callahan (MS), School of Environmental and Forest Sciences, University of Washington.
- 2015-2017 Riley Metz (MS), School of Environmental and Forest Sciences, University of Washington.
- 2015-2017 Michael Freeman (MS), School of Environmental and Forest Sciences, University of Washington.
- 2016-2017 Ian Hash (PCMI), School of Environmental and Forest Sciences, University of Washington (Co-Chair).
- 2016-2017 Zachary Williams (PCMI), School of Environmental and Forest Sciences, University of Washington.
- 2016-2017 Tabatha Rood (PCMI), School of Environmental and Forest Sciences, University of Washington.
- 2016-2017 Jordan Bunch (PCMI), School of Environmental and Forest Sciences, University of Washington (Co-Chair).
- 2016-2017 Jake Dunton (PCMI), School of Environmental and Forest Sciences, University of Washington (Co-Chair).
- 2015-2017 Amanda Bidwell (MS), School of Environmental and Forest Sciences, University of Washington (Co-Chair).
- 2014-2016 Alia Kroos (PCMI), School of Environmental and Forest Sciences, University of

Washington (Co-Chair).
2015-2016 Marisa Bass (MFR), School of Environmental and Forest Sciences, University of Washington.

Participation on Graduate Student Committees: *Graduated*

2019-2023 Michele Buonanduci (PhD), Quantitative Ecology and Resource Management Program, University of Washington.
2018-2022 Michelle Agne (PhD), School of Environmental and Forest Sciences, University of Washington.
2016-2022 William Brightly (PhD), Department of Biology, University of Washington (GSR).
2019-2022 Nora Gilbertson (PhD), Applied Mathematics, University of Washington (GSR).
2020-2021 Benjamin Liu, Applied Mathematics, University of Washington (GSR).
2018-2020 Kelsey Marcinko (PhD), Applied Mathematics, University of Washington (GSR).
2018-2019 Michele Buonanduci (MS), Quantitative Ecology and Resource Management Program, University of Washington.
2017-2020 Zhengxin Lang (PhD), School of Environmental and Forest Sciences, University of Washington.
2015-2021 Rea Manderino (PhD), Department of Environmental and Forest Biology, SUNY-ESF.
2015-2021 Meera Sethi (PhD), Department of Biology, University of Washington (GSR).
2015-2019 Russell Kramer (PhD), School of Environmental and Forest Sciences, University of Washington
2016-2017 Mathis Messenger (MS), School of Aquatic and Fisheries Sciences, University of Washington.
2017 Austin Philips (PhD), Quantitative Ecology and Resource Management Program, University of Washington (GSR).
2016-2017 Cole Gross (MS), School of Environmental and Forest Sciences, University of Washington.
2016-2017 Margaret Wilder (PCMI), School of Environmental and Forest Sciences, University of Washington.
2016-2017 Jennifer Stacy (PCMI), School of Environmental and Forest Sciences, University of Washington.
2015-2016 Corey Dolbear (PCMI), School of Environmental and Forest Sciences, University of Washington.
2015-2016 Mikhael Kazzi (PCMI), School of Environmental and Forest Sciences, University of Washington.
2013-2015 Marissa Streifel (MS), Department of Entomology, University of Minnesota.
2014 Seth Kammer (PCMI), School of Environmental and Forest Sciences, University of Washington.
2010-2015 Sunghoon Baek (MS), Division of Plant and Soil Sciences (Entomology), West Virginia University.
2012-2014 James Watson (MS), Division of Forestry and Natural Resources, West Virginia University.
2007-2009 Joseph White (MS), Division of Plant and Soil Sciences (Entomology), West Virginia University.
2007-2009 Kevin Bigsby (MS), Department of Forestry and Environmental Resources, North Carolina State University.

Undergraduate Mentoring (Capstone Project Adviser)

- 2023 Camile Cubé, School of Environmental and Forest Sciences, University of Washington.
- 2021-2022 Mia Taylor, School of Environmental and Forest Sciences, University of Washington.
- 2021 Diane Shi Wang, School of Environmental and Forest Sciences, University of Washington.
- 2019-2020 Adara Schneider, School of Environmental and Forest Sciences, University of Washington.
- 2018-2019 Marisa De Luccia, School of Environmental and Forest Sciences, University of Washington.
- 2018-2019 Hiruni Jayaseketa, School of Environmental and Forest Sciences, University of Washington.
- 2018-2019 Mackenzie Morgan, School of Environmental and Forest Sciences, University of Washington.
- 2018-2019 Helen Kesting, School of Environmental and Forest Sciences, University of Washington.
- 2018-2019 Sabrina Gilmour, School of Environmental and Forest Sciences, University of Washington.
- 2016-2017 Kjaisa Gifford, School of Environmental and Forest Sciences, University of Washington.
- 2016-2017 Justin Beach, Program on the Environment, University of Washington.
- 2016-2017 Ceci Henderson, School of Environmental and Forest Sciences, University of Washington.
- 2016-2017 Grace Masaoka, School of Environmental and Forest Sciences, University of Washington.
- 2015-2016 Constance Lin, School of Environmental and Forest Sciences, University of Washington.
- 2015-2016 Ed Nebendahl, School of Environmental and Forest Sciences, University of Washington.
- 2015-2016 Alex Blumenfeld, School of Environmental and Forest Sciences, University of Washington.
- 2015-2016 Rachel DeCordova, School of Environmental and Forest Sciences, University of Washington.
- 2014-2015 Kaitlin Stair, School of Environmental and Forest Sciences, University of Washington.

Teaching (University of Washington)

- 2023 Insect Ecology (ESRM 435), University of Washington, Seattle, WA (3 credits, 29 students, Adjusted Evaluation Score: 4.8/5.0)
- 2023 Introduction to Probability and Statistics (Q SCI 381), University of Washington, Seattle, WA (5 credits, 148 students, Adjusted Evaluation Score: 4.6/5.0)
- 2022 Insect Ecology (ESRM 435), University of Washington, Seattle, WA (3 credits, 27 students, Adjusted Evaluation Score: 4.9/5.0)
- 2022 Introduction to Probability and Statistics (Q SCI 381), University of Washington, Seattle, WA (5 credits, 142 students, Adjusted Evaluation Score: 4.6/5.0)
- 2021 Introduction to Probability and Statistics (Q SCI 381), University of Washington, Seattle, WA (5 credits, 198 students, Adjusted Evaluation Score: 4.6/5.0)

- 2020 Terrestrial Invasion Ecology (ESRM 415/SEFS 506, writing credit course, online), University of Washington, Seattle, WA (5 credits, 19 students)
- 2020 Insect Ecology (ESRM 435), University of Washington, Seattle, WA (3 credits, 57 students, Adjusted Evaluation Score: 4.9/5.0)
- 2020 Current Topics in Forest Resources (SEFS 521B, 25% responsibility), University of Washington, Seattle, WA (1 credit, 18 students, Adjusted Evaluation Score: 4.4/5.0)
- 2020 Introduction to Probability and Statistics (Q SCI 381), University of Washington, Seattle, WA (5 credits, 126 students, Adjusted Evaluation Score: 4.4/5.0)
- 2019 Terrestrial Invasion Ecology (ESRM 415 (writing credit course)/SEFS506), University of Washington, Seattle, WA (5 credits, 24 students, Adjusted Evaluation Score: 4.6/5.0).
- 2019 The Natural and Cultural History of Costa Rica (ESRM 498; co-taught), University of Washington, Seattle, WA (5 credits, 22 students).
- 2019 Introduction to Probability and Statistics (Q SCI 381), University of Washington, Seattle, WA (5 credits, 125 students, Adjusted Evaluation Score: 4.5/5.0).
- 2018 Terrestrial Invasion Ecology (ESRM 415 (writing credit course)/SEFS506), University of Washington, Seattle, WA (5 credits, 24 students, Adjusted Evaluation Score: 4.5/5.0)
- 2018 The Natural and Cultural History of Costa Rica (ESRM 498; co-taught), University of Washington, Seattle, WA (5 credits, 17 students)
- 2018 Insect Ecology (ESRM 435), University of Washington, Seattle, WA (3 credits, 29 students, Adjusted Evaluation Score: 4.1/5.0)
- 2018 Introduction to Probability and Statistics (Q SCI 381), University of Washington, Seattle, WA (5 credits, 127 students, Adjusted Evaluation Score: 3.8/5.0)
- 2017 Plant Invasions (ESRM 415 (writing credit course)/SEFS 590D), University of Washington, Seattle, WA (5 credits, 29 students, Adjusted Evaluation Score: 4.7/5.0)
- 2017 Insect Ecology (ESRM 435), University of Washington, Seattle, WA (3 credits, 35 students, Adjusted Evaluation Score: 4.8/5.0)
- 2017 Laboratory in Insect Ecology (ESRM 436), University of Washington, Seattle, WA (2 credits, 11 students, Adjusted Evaluation Score: 3.6/5.0)
- 2017 Statistical Inference in Applied Research II: Regression Analysis for Ecologists and Resource Managers (Q SCI 483), University of Washington, Seattle, WA (5 credits, 28 students, Unadjusted Evaluation Score: 4.7/5.0)
- 2017 Introduction to Probability and Statistics (Q SCI 381), University of Washington, Seattle, WA (5 credits, 127 students, Adjusted Evaluation Score: 4.3/5.0)
- 2016 Forest Entomology (ESRM 435), University of Washington, Seattle, WA (3 credits, 56 students, Adjusted Evaluation Score: 4.9/5.0)
- 2016 Forest Entomology Laboratory (ESRM 436), University of Washington, Seattle, WA (2 credits, 13 students, Adjusted Evaluation Score: 4.5/5.0)
- 2016 Statistical Inference in Applied Research II: Regression Analysis for Ecologists and Resource Managers (Q SCI 483), University of Washington, Seattle, WA (5 credits, 24 students, Unadjusted Evaluation Score: 4.9/5.0)
- 2016 Introduction to Probability and Statistics (Q SCI 381), University of Washington, Seattle, WA (5 credits, 130 students, Adjusted Evaluation Score: 4.4/5.0)
- 2015 Forest Entomology (ESRM 435), University of Washington, Seattle, WA (3 credits, 56 students, Adjusted Evaluation Score: 4.6/5.0)
- 2015 Forest Entomology Laboratory (ESRM 436), University of Washington, Seattle, WA (2 credits, 13 students, Adjusted Evaluation Score: 4.9/5.0)
- 2015 Introduction to Probability and Statistics (Q SCI 381), University of Washington, Seattle, WA (5 credits, 45 students, Adjusted Evaluation Score: 4.6/5.0)

Teaching (Prior to the University of Washington)

- 2012 Special Topics: Spatial Statistics in Ecology (ENT 600), West Virginia University, Morgantown, WV (Graduate Level, 2 credits, 6 students).
- 2007 Co-Instructor (with Erin Sills, North Carolina State University), National Center for Ecological Analysis and Synthesis – Distributed Graduate Seminar on the “Economic and ecological effects of non-native forest pests and pathogens.” Other participating universities were Colorado State University, Northern Arizona University, Oregon State University, the University of Minnesota, the University of Montana, and SUNY-ESF.
- 2002 Instructor, Statistical Analysis in Integrated Pest Management (IPM) Workshop (2-week short course), USAID IPM-CRSP Project in Albania (Year 3 of 3).
- 2002 Laboratory Instructor (1 section, Spring Semester 2002), General Entomology (ENT 313), Pennsylvania State University, University Park, Pennsylvania.
- 2001 Instructor, Statistical Analysis in IPM Workshop (2-week short course), USAID IPM-CRSP Project in Albania (Year 2 of 3).
- 2000 Co-Instructor, Statistical Analysis in IPM Workshop (2-week short course), USAID IPM-CRSP Project in Albania (Year 1 of 3).
- 1999 Teaching Assistant, Insect Population Dynamics (Fall Semester, Entomology 420), Pennsylvania State University, University Park, PA.
- 1999 Teaching Assistant, Forest Entomology (Spring Semester, Entomology 318) Pennsylvania State University, University Park, PA.
- 1998 Co-organized and co-taught (with three fellow entomologists with the Penn State Department of Entomology) a one-week short course on insect taxonomy to two visiting entomology extension agents from Jamaica, University Park, PA.
- 1998 Teaching Assistant, Insect Population Dynamics (Fall Semester, Entomology 420), Pennsylvania State University, University Park, PA.
- 1997 Teaching Assistant, Applied Field Entomology (Fall Semester, Entomology 297B).

University Guest Lectures

- 2023 “Ecosystem benefits of insects,” (ESRM 201), University of Washington, Seattle, WA.
- 2022 “Ecosystem benefits of insects,” (ESRM 201), University of Washington, Seattle, WA.
- 2020 “Beneficial insects,” (ESRM 201), University of Washington, Seattle, WA.
- 2019 “Beneficial insects,” (ESRM 201), University of Washington, Seattle, WA.
- 2019 “Insect ecology and sampling,” (ESRM 304), University of Washington, Seattle, WA.
- 2018 “Beneficial insects,” (ESRM 201), University of Washington, Seattle, WA.
- 2016 “Pest problems and management in urban landscapes,” (ESRM 480), University of Washington, Seattle, WA.
- 2016 “Biology, ecology, and management of non-native insects,” (ESRM 415), University of Washington, Seattle, WA.
- 2015 “Management of non-native insects: what can we learn from historical eradication programs?,” (FISH 423), University of Washington, Seattle, WA.
- 2015 “Insect intruders: biological invasions and the threat to ecosystems and biodiversity,” Wildlife Seminar (ESRM 455), University of Washington, Seattle, WA.
- 2013 “Emerging issues in forest insect pest management,” Forest Pest Management (Entomology 470), West Virginia University, Morgantown, WV.
- 2010 “Biological invasions in forest ecosystems,” Forest Pest Management (Entomology 470), West Virginia University, Morgantown, WV.
- 2009 “Sampling insect populations in forest ecosystems,” Insect Pest Management (Entomology 412), West Virginia University, Morgantown, WV.

- 2008 “The role of the USDA Forest Service Research and Development in invasive species management,” Agroecology 497, The Pennsylvania State University, University Park, PA.
- 2007 “Emerging issues in forest pest management: biological invasions,” Forest Pest Management (Entomology 470), West Virginia University, Morgantown, WV.
- 2007 “Sampling insect populations in forest ecosystems,” Insect Pest Management (Entomology 412), West Virginia University, Morgantown, WV.
- 2007 “Biological invasions: role of the USDA Forest Service,” Agroecology 497, The Pennsylvania State University, University Park, PA.
- 2000 “Modeling insect dispersal and spatial dynamics,” (3 lectures), Insect Population Dynamics (Entomology 420), Pennsylvania State University, University Park, PA.

EXTRAMURAL RESEARCH SUPPORT (awarded)

- 2023-2025 (\$103,190) The effect of mixed severity wildfires on pollinator populations, McIntire Stennis Cooperative Forestry Program (Lead PI)
- 2023-2024 (\$22,500) Historical insect outbreak dynamics in the Pacific coastal temperate rainforest, USDA Forest Service, Pacific Northwest Research Station (Lead PI)
- 2022-2024 (\$117,866) Testing western North America fir species for genetic tolerance and resistance to balsam woolly adelgid, USDA Forest Service, Special Technology Development Program (Lead PI)
- 2020-2022 (\$66,920) Climate warming and forest insect outbreak dynamics in the Pacific Northwest. USDA McIntire-Stennis (Lead PI)
- 2019-2022 (\$324,215; \$233,911 to UW) Spatiotemporal interactions among biotic disturbance agents, biological legacies, and compensatory responses: Consequences for temperate forest resilience, National Science Foundation DEB (Co-PI)
- 2019-2020 (\$5,000) Assessing the biodiversity and epidemiology of common, understudied, Pacific Northwest fungi. Daniel E. Stuntz Memorial Foundation (Lead PI)
- 2018-2019 (\$3,800) Epidemiology studies of powdery mildew in urban and forest settings focusing on the relationship between host resistance and divergence, Daniel E. Stuntz Memorial Foundation (Lead PI)
- 2018-2019 (\$16,500) Optimizing management guidelines for the non-native Azalea Lace Bug on *Rhododendron* species in Western Washington, Horticultural Research Institute (sole PI)
- 2018 (Next-Gen Sequence Kits) Using Next-Generation Sequencing to measure native bee health, Illumina-UW Grant Program for Innovative Investigators (Lead PI)
- 2017-2018 (\$33,581) Build me up buttercup: The effects of non-native plants on invertebrate-based ecosystem services, University of Washington Royalty Research Fund (sole PI)
- 2017-2018 (\$59,532) Effects of non-native plants on native bees in the Pacific Northwest, USDA McIntire-Stennis (Lead PI)
- 2016-2019 (\$792,577; \$179,769 to UW) Collaborative research: A landscape resistance mapping approach to understanding species invasion patterns, National Science Foundation DEB (PI)
- 2016-2018 (\$159,574) Predicting the next high-impact insect invasion: Elucidating factors determining the risk of introduced herbivorous insects on North American native plants, USGS John Wesley Powell Center for Analysis and Synthesis (Co-PI)
- 2016-2018 (\$55,468) Bigleaf maple decline in Western Washington, USDA McIntire-Stennis (Lead PI)
- 2016-2017 (\$12,482) Modeling the spread of *Heterobasidion* root disease in red pine, USDA Forest Service (Sole PI)

2016-2017 (\$55,014) Identifying emerging pathways of Asian gypsy moth in the Pacific Northwest, USDA Farm Bill (Sole PI)

2016-2017 (\$20,000) Elucidating traits and factors determining the risk of introduced herbivorous insects on North American native plants, USDA Forest Service (Sole PI)

2015-2017 (\$30,000) Evaluation of emerald ash borer trapping schemes, USDA Forest Service (Sole PI)

2015-2017 (\$88,981) Metal deposition along an urban-to-wildland gradient in the Puget Sound Region, USDA McIntire-Stennis (Co-PI)

2015-2016 (\$45,000) Spatiotemporal patterns of gypsy moth colony growth and persistence, Slow-the-Spread Foundation, Inc. (sole PI)

2014-2015 (\$45,000). Optimization of trapping grids for the detection of the gypsy moth, a non-native invasive forest pest that threatens North American hardwoods, Slow-the-Spread Foundation, Inc. (Sole PI)

2013-2014 (\$45,000) Research Support for the National Gypsy Moth Slow-the-Spread Program, USDA Forest Service (Sole PI)

2013-2015 (\$199,000) Evaluation of novel traps against the Emerald Ash Borer. SERG International, Forest Pest Management Products (Co-PI)

2013-2015 (\$142,100) Asian gypsy moth: populations, phenologies, pathways. USDA Farm Bill (Co-PI)

2012-2013 (\$45,000) Research Support for the National Gypsy Moth Slow-the-Spread Program, USDA Forest Service (Sole-PI)

2011-2012 (\$45,000) Research Support for the National Gypsy Moth Slow-the-Spread Program, USDA Forest Service (Sole-PI)

2010-2011 (\$45,000) Research Support for the National Gypsy Moth Slow-the-Spread Program, USDA Forest Service (Sole-PI)

2009-2010 (\$45,000) Research Support for the National Gypsy Moth Slow-the-Spread Program, USDA Forest Service (Sole-PI)

2008-2009 (\$30,000) Research Support for the National Gypsy Moth Slow-the-Spread Program, USDA Forest Service (Sole-PI)

2007-2008 (\$30,000) Research Support for the National Gypsy Moth Slow-the-Spread Program, USDA Forest Service (Sole-PI)

2006-2007 (\$30,000) Research Support for the National Gypsy Moth Slow-the-Spread Program, USDA Forest Service (Sole-PI)

2006-2009 (\$385,000) Synchronization of invading gypsy moth populations. USDA NRI (Co-PI)

1999-2001 (\$102,000) Understanding spatial covariance function dynamics for improving insect spatial and temporal management, EPA Science to Achieve Results (S.T.A.R.) Ph.D. Fellowship Grant (Lead PI)

INVITED PRESENTATIONS: SEMINARS

1. 1999, Here and now, there and then: spatial and temporal management of insect populations. DowAgro Sciences, Indianapolis, IN.
2. 2006. Estimating the spread of the gypsy moth, a non-indigenous invader in North America. Department of Geography, West Virginia University, Morgantown, WV.
3. 2007. Allee effects and the invasion dynamics of the gypsy moth. Department of Biology, West Virginia University, Morgantown, WV.
4. 2008. Allee effects and the establishment and spread of invasive species. Department of

- Entomology, Pennsylvania State University, University Park, PA.
5. 2008. Exploiting Allee effects for predicting and managing biological invasions. Department of Entomology, Cornell University, Ithaca, NY.
 6. 2009. Allee effects and mating success in gypsy moth population dynamics. Department of Entomology, University of Wisconsin, Madison, WI.
 7. 2009. Allee effects and biological invasions: exploiting an Achilles' Heel in management strategies. Department of Entomology, Purdue University, LaFayette, IN.
 8. 2011. Allee dynamics: exploiting an Achilles' heel in the management of non-native species. Department of Entomology, Ohio State University, Columbus/Wooster, OH.
 9. 2012. Insect seasonality and reproductive synchrony in a world of changing climates. Department of Entomology and Wildlife Ecology, University of Delaware, Newark, DE.
 10. 2012, Post-establishment, pre-outbreak gypsy moth dynamics in Northern Wisconsin. Forest Supervisor's Office, Chequamegon-Nicolet National Forest, Rhinelander, WI.
 11. 2013. Climatic extremes as constraints to gypsy moth population growth. Presented in various forms to:
 - (11) Warnell School of Forestry and Natural Resources, University of Georgia, Athens, GA.
 - (12) Department of Entomology, University of Wisconsin, Madison, WI.
 - (13) Department of Entomology, University of Maryland, College Park, PA.
 - (14) REU Seminar (Student-Invited), Department of Environmental Sciences, University of Virginia, Blandy Experimental Farm, Boyce, VA.
 15. 2013, Climatic constraints to population growth and range expansion of a non-native forest insect. Department of Entomology, Pennsylvania State University, University Park, PA.
 16. 2014, Drivers and constraints of gypsy moth population growth and range expansion. Department of Biology, Virginia Commonwealth University, Richmond, VA.
 17. 2014, Dynamics of forest insect invasions in North America. Division of Forestry and Natural Resources, West Virginia University, Morgantown, WV.
 18. 2014, Allee effects and biological invasions: Exploiting an Achilles' heel in management strategies. School of Environmental and Forest Sciences, University of Washington, Seattle, WA.
 19. 2015, Drivers and constraints of invasions by non-native species, College of Built Environments, University of Washington, Seattle, WA.
 20. 2017, Looking for black and white in the grey: quantifying traits in invasive insects to predict the next high-impact invasion. Department of Biology, Western Washington University, Bellingham, WA.
 21. 2018, Looking for black and white in the grey: Modeling biological invasions to enhance prediction of high-impact invaders. School of Fisheries and Aquatic Sciences, University of Washington, Seattle, WA.
 22. 2018, Variation in Allee dynamics and their role in biological invasions. Department of Forest and Wildlife Ecology, University of Wisconsin, Madison, WI.
 23. 2018, Known unknowns: Invasive insects in the Anthropocene. Scarabs: The Bug Society, Woodland Zoo, Seattle, WA.
 24. 2019, Old friends and new enemies – how evolutionary history can be used to predict impact of insect herbivores. University of Washington Fish and Wildlife Ecology seminar, Seattle, WA.
 25. 2020, Predicting and managing the impacts of invasive insects, Washington State University Extension (virtual).
 26. 2022, Climate change effects on the spread and impact of plant pests and pathogens. City of Seattle Pesticide Applicator Recertification Webinar

27. 2022, Bigleaf maple decline in Washington. Forest Health in Oregon 2022: State of the State Conference

INVITED PRESENTATIONS: NATIONAL AND INTERNATIONAL CONFERENCES (As Presenter Only)

1. Tobin, P. C., C. W. Pitts, and S. J. Fleischer. 1998. Spatial dynamics of the house fly, *Musca domestica* L. (Diptera: Muscidae) in poultry facilities. Symposium on "Putting a Spatial Dimension into Population Dynamics Field Work and IPM," Annual Entomological Society of America Eastern Branch Meeting, Cherry Hill, NJ.
2. Tobin, P. C. 1999. Markov random field simulations of insect spatio-temporal dynamics. Penn State University Operations Research Annual Conference, University Park, PA.
3. Tobin, P. C., S. Nagarkatti, and M. C. Saunders. 1999. Penn State entomology research program on pest management in grape. New York-Pennsylvania Regional Grape Growers Association, North East, Pennsylvania.
4. Tobin, P. C., S. Nagarkatti, and M. C. Saunders. 2000. Penn State entomology research program on pest management in grape. Annual Pennsylvania Wine Growers Association Meeting, University Park, PA.
5. Tobin, P. C. 2002. Spatial and temporal monitoring and management of insect populations. USDA/ARS, Beneficial Insect Introduction Research Unit, Newark, DE.
6. Tobin, P. C. 2004. The spread of Gypsy Moth in Wisconsin: a new paradigm for the Midwest invasion? USDA Interagency Research Forum on Gypsy Moth and other Invasive Species, Annapolis, MD.
7. Tobin, P. C., A. A. Sharov, D. Leonard, A. M. Liebhold, and E. A. Roberts. 2004. Slowing the spread of the gypsy moth: area-wide management of an invasive forest pest in the United States. 15th International Plant Protection Congress, Beijing, China.
8. Tobin, P. C. 2004. The Slow the Spread Decision Algorithm for Dummies. Annual Gypsy Moth Review, Indianapolis, IN.
9. Tobin, P. C. 2004. The spread of gypsy moth: past, present, and future. Annual Gypsy Moth Review, Indianapolis, IN.
10. Tobin, P. C. and S. L. Whitmire. 2005. Persistence of invading gypsy moth populations. Presented in plenary symposium, "Quantitative Approaches to Understanding Biological Invasions," USDA Interagency Research Forum on Gypsy Moth and other Invasive Species, Annapolis, MD.
11. Tobin, P. C. and S. L. Whitmire. 2005. Allee effects and the space-time signature of gypsy moth invasions. Presented in the symposium "Species Movement in Forests," Southern Forest Insect Work Conference, Austin, TX.
12. Tobin, P. C. 2005. Invited panel member of a panel discussion on "Gypsy Moth in Wisconsin," North Central Forest Pest Workshop, LaCrosse, WI.
13. Tobin, P. C. 2005. Gypsy moth in Minnesota. Annual Gypsy Moth Review, West Conshohocken, PA.
14. Tobin, P. C. 2006. Trials and tribulations of a computer-based decision algorithm in gypsy moth management. Presented in the symposium "Status of Gypsy Moth in the U.S: Insect Detection, Evaluation, and Prediction Committee Symposium," Annual Meeting of the Entomological Society of America-Eastern Branch Meeting, Charlottesville, VA.
15. Tobin, P. C. 2006. Technical considerations to implementation of Slow the Spread in Fiscal Year 2007, West Virginia Gypsy Moth Working Group, Flatwoods, WV.

16. Tobin, P. C. 2006. Technical considerations and cost analyses for the Gypsy Moth Slow the Spread Project Annual Gypsy Moth Review, St. Louis, MO.
17. Tobin, P. C., S. L. Whitmire, D. M. Johnson, O. N. Bjørnstad, and A. M. Liebhold. 2007. Allee effects and gypsy moth invasions. USDA Interagency Research Forum on Invasive Species, Annapolis, MD.
18. Tobin, P. C., S. L. Whitmire, D. M. Johnson, O. N. Bjørnstad, and A. M. Liebhold. 2007. Allee dynamics and biological invasions in forest ecosystems. Presented in the symposium "Population dynamics of insects in forest landscapes," Southern Forest Insect Work Conference Annual Meeting, Jekyll Island, GA.
19. Tobin, P. C., A. E. Hajek, L. M. Blackburn, J. J. Hannam, A. Diss-Torrance, K. F. Raffa, and C. Nielson. 2007. Dispersal of gypsy moth pathogens into areas newly colonized by the gypsy moth. North Central Forest Pest Workshop, Shoreview, Minnesota.
20. Tobin, P. C. 2007. Allee effects and the invasion dynamics of non-indigenous invaders. Presented in the symposium "Exotic forest pests: are we making any progress?," Annual Meeting of the Entomological Society of America, San Diego, CA.
21. Tobin, P. C. 2008. The economics of gypsy moth control. Maryland Department of Agriculture Forest Pest Update, New Germany State Park, MD.
22. Tobin, P. C. and A. M. Liebhold. 2008. The role of Allee effects in gypsy moth invasions. Presented in the symposium "Insect Invasion Dynamics in Forest Ecosystems," XXIII International Congress of Entomology, Durban, South Africa.
23. Tobin, P. C., E. O. Sills, M. Ambrose, S. Bauch, K. Bigsby, and Y. Wu. 2008. The cost of gypsy moth sex in the city. Presented in the symposium "The ecological and economic impacts of nonnative forest pests and pathogens," Annual Meeting of the Ecological Society of America, Milwaukee, WI.
24. Tobin, P. C. 2009. The role of Allee effects in biological invasions. Presented in the symposium, "Invasive Species Research," North Central Branch of the Entomological Society of America, St. Louis, MO.
25. Tobin, P. C., S. J. Fleischer, and E. A. Roberts. 2009. Monitoring the arrival, establishment, and spread of invasive species using a geographic information system. Presented in the symposium, "Transcending boundaries: using GIS applications for invasive species prediction and control," 6th International IPM Symposium, Portland, OR.
26. Tobin, P. C. 2009. The ecology, geopolitics, and economics of area-wide management of invading gypsy moth populations. Keynote Presentation, Annual Meeting of NCERA-148, Migration and Dispersal of Agriculturally-Important Biota, Blacksburg, VA.
27. Tobin, P. C., L. Hunt, K. Thielen Cremers, and J. F. Kyhl. 2009. Not all quiet on the western front: the gypsy moth invasion of Minnesota. Annual Gypsy moth Review, Minneapolis, MN.
28. Tobin, P. C., K. Klein, and D. S. Leonard. 2009. Gypsy moth flight behavior and phenology based upon field-deployed automated pheromone-baited traps. Annual Gypsy moth Review, Minneapolis, MN.
29. Tobin, P. C. 2009. Local spatial patterns along the leading edge of invading gypsy moth populations. Presented in the symposium, "Bringing geospatial colleagues, science, and ideas together: opportunities for spatial analysis and remote sensing in entomology." Annual Meeting of the Entomological Society of America, Indianapolis, IN.
30. Tobin, P. C., de-Camino-Beck, T., O. N. Bjørnstad, and A. M. Liebhold. 2010. Estimating invasion speed through Wombling of waiting times. USDA Interagency Research Forum on Invasive Species, Annapolis, MD.

31. Tobin, P. C., A. Diss-Torrance, L. M. Blackburn, and Brian D. Brown. 2010. What does “local” firewood buy you? Managing the risk of invasive species introduction. North Central Forest Pest Workshop, Elkhart Lake, WI.
32. Tobin, P. C., D. S Leonard, and K. S. Onufrieva. 2010. STS technology development update. Annual Gypsy Moth Review, Durham, NC.
33. Tobin, P. C., J. M. Kean, D. A. Herms, D. Lee, D. G. McCullough, D. M. Suckling, and T. Yamanaka. 2010/2011. Analysis of historical insect eradication programs. Presented (1) in the symposium (2010), “Insect eradication: when is it possible and how do you evaluate success?” Annual Meeting of the Entomological Society of America, San Diego, CA; and (2) in the symposium (2011), “Forest Insect Eradication,” USDA Interagency Research Forum on Invasive Species, Annapolis, MD.
34. Tobin, P. C., J. M. Kean, D. A. Herms, D. Lee, D. G. McCullough, T. Pluess, D. M. Suckling, and T. Yamanaka. 2011. Determinants of cost and success in forest insect eradication programs. Presented in the workshop, “Forest insect eradication: theory and practice,” North American Forest Insect Work Conference, Portland, OR.
35. Tobin, P. C., D. S Leonard, and K. S. Onufrieva. 2011. STS technology development update. Annual Gypsy Moth Review, Madison, Wisconsin.
36. Tobin, P. C. and K. S. Onufrieva, and K. W. Thorpe. 2011. *Lymantria dispar* male moth densities and female mating success: consequences of mate-finding failures of an invading non-native species. Annual Gypsy Moth Review, Madison, Wisconsin.
37. Tobin, P. C. and D. S. Leonard. 2012. STS Technology Committee Update. Annual Gypsy Moth Review, Portland, OR.
38. Tobin, P. C., L. M. Blackburn, R. H. Gray, C. T. Lettau, A. M. Liebhold, and K. F. Raffa 2012. Using delimiting surveys to characterize gypsy moth populations. Annual Gypsy Moth Review, Portland, OR.
39. Tobin, P. C. and R. M. Turcotte. 2012. When one is not a lonely number: Initial colonization dynamics of the hemlock woolly adelgid. Annual Meeting of the Entomological Society of America, Knoxville, TN.
40. Tobin, P. C. 2013. Gypsy moth invasion dynamics in Northern Minnesota. North Central Forest Pest Workshop, Frontenac, MN.
41. Tobin, P. C. 2013. Insect seasonality and population dynamics in a world of changing climates: Implications for policy. Presented in the Symposium “Climate change and arthropod pest dynamics: Research to accelerate our science and inform public policy,” at the Annual Meeting of the Entomological Society of America, Austin, TX.
42. Tobin, P. C. 2014. Drivers and constraints of gypsy moth population growth and range expansion. Presented in the Symposium, “Multi-scale approaches to the ecology and management of forest insect pests in eastern North America,” Annual Meeting of the Eastern Branch of the Entomological Society of America, Williamsburg, VA.
43. Tobin, P. C. 2014. Insect seasonality and population dynamics as influenced by climate change. Annual Meeting of the Virginia Forest Health Professionals, Glen Allen, VA.
44. Tobin, P.C. 2014. Supraoptimal temperatures restrict and retract the distributional range of the gypsy moth. 2014 IUFRO World Congress, Salt Lake City, UT.
45. Tobin, P.C. 2014. Gypsy moth phenological synchrony across the landscape. Annual Gypsy Moth Review, Lexington, KY.
46. Tobin, P.C. 2014. Climate change and insect population dynamics: Implications for management. Seattle Parks and Recreation, West Seattle, WA.
47. Tobin, P.C. 2014. Climate effects on invasive forest pests. Morton Arboretum Urban Tree Conference, Lisle, IL.

48. Tobin, P.C., K. Thielen Cremers, L. Hunt and D. Parry 2015. Dissecting the gypsy moth invasion of northern Minnesota, 2000 to the present. Annual Gypsy Moth Review, Virginia Beach, VA.
49. Tobin, P.C. 2015. Sex and the single insect: the importance of mate finding Allee effects. Ecological Society of America, Baltimore, MD.
50. Tobin, P.C., A.M. Mech, J.M. Kean, D.M. Suckling, D.G. McCullough, D.A. Herms and L.D. Stringer 2016. Learning from the legacy of historical eradication programs: when to pull no punches and when to throw in the towel. North American Forest Insect Work Conference, Washington, D.C.
51. Tobin, P.C., R. Metz, J. Walter, K. Grayson, D. Johnson and K. Haynes 2016. Variation in the speed of invasion: roles of weather, resource availability, and landscape attributes on gypsy moth invasion dynamics. North American Forest Insect Work Conference, Washington, D.C.
52. Tobin, P.C. 2016. Dynamics of non-native insect invasions and the threat to biodiversity. 2016 China-U.S. Biodiversity Workshop, Hangzhou, China.
53. Tobin, P.C. 2016. Watch out for the azalea lace bug. Seattle Parks and Recreation, West Seattle, WA.
54. Tobin, P.C. and K.F. Raffa. 2017. Establishment success and outbreak dynamics in the gypsy moth: A Wisconsin Northwoods paradox. Annual Meeting of the Entomological Society of America, Denver, CO.
55. Tobin, P.C. 2018. Recent research on gypsy moth and implications to its management in the western U.S. Western Gypsy Moh Review, Olympia, WA.
56. Tobin, P.C. 2018. Spread of gypsy moth in the transition zone. Annual Gypsy Moth Review, Indianapolis, IN.
57. Tobin, P.C. and R. Metz. 2018. Effects of temperature and host plant fragmentation on gypsy moth growth rates. Annual Gypsy Moth Review, Indianapolis, IN.
58. Tobin, P.C. 2018. Management of invasive insects: The rise of applied entomology in the United States. Joint Annual Meeting of the Entomological Society of America, Entomological Society of Canada, and Entomological Society of British Columbia, Vancouver, British Columbia.
59. Tobin, P.C. 2019. Insects and pathogens in warmer, urban forests. Urban Forest Symposium, Seattle, WA.
60. Tobin, P.C. 2019. Evolutionary history predicts high-impact invasions by herbivorous insects. Annual Gypsy Moth Review, Seattle, WA.
61. Tobin, P.C. 2019. Disturbia in Cascadia: abiotic and biotic causes of decline in Pacific Northwest forests (Keynote address). Annual Gypsy Moth Review, Seattle, WA.

PUBLICATIONS: THESES

- Tobin, P. C. 1997. Spatio-temporal dynamics of the house fly, *Musca domestica* L. (Diptera: Muscidae), and the predator *Carcinops pumilio* (Erichson) (Coleoptera: Histeridae), in high-rise poultry facilities. M.S. Thesis, Department of Entomology, The Pennsylvania State University, 79 pp.
- Tobin, P. C. 2002. Spatial phenology modeling of selected populations of herbivores, and spatiotemporal patterns in a predator-prey system. Ph.D. Dissertation, Department of Entomology, The Pennsylvania State University, 183 pp.

PUBLICATIONS: NON-REFERRED REPORTS

1. M. C. Saunders, S. Nagarkatti and P. C. Tobin. 2000. Investigating occurrence of races and induction of diapause in the grape berry moth for improved treatment decisions. A Progress

- Report to the Lake Erie Regional Grape Program and New York Grape Production Research Fund, 12 pp.
2. M. C. Saunders, S. Nagarkatti and P. C. Tobin. 2001. Investigating occurrence of races and induction of diapause in the grape berry moth for improved treatment decisions. A Progress Report to the Lake Erie Regional Grape Program and New York Grape Production Research Fund, 25 pp.
 3. Saunders, M. C., S. Nagarkatti, and P. C. Tobin. 2003. Control of grape berry moth with fenpropathrin and phosmet. *Arthropod Management Tests* Report No. C8.
 4. Saunders, M. C., S. Nagarkatti, and P. C. Tobin. 2003. Control of grape berry moth with tebufenozide and RH-2485. *Arthropod Management Tests* Report No. C9.
 5. Saunders, M. C., S. Nagarkatti, and P. C. Tobin. 2003. Control of grape cane gallmaker with fenpropathrin and phosmet. *Arthropod Management Tests* Report No. C10.
 6. Tobin, P. C. 2007. Book Review, "The Great Gypsy Moth War: The History of the First Campaign in Massachusetts to Eradicate the Gypsy Moth, 1890-1901," *American Entomologist* 53: 121-122.
 7. Tobin, P. C. and L. M. Blackburn [Eds]. 2007. Slow the Spread: A National Program to Manage the Gypsy Moth. USDA Forest Service, General Technical Report NRS-6, 109 p.
 8. Tobin, P. C. and A. A. Sharov. 2007. The Decision Algorithm: The Selection of and Recommendation for Potential Problem Areas, In P. C. Tobin and L. M. Blackburn [Eds], *Slow the Spread: A National Program to Manage the Gypsy Moth*. USDA Forest Service, General Technical Report NRS-6, pp. 47-60.
 9. Tobin, P. C., A. A. Sharov, and K. W. Thorpe. 2007. The Decision Algorithm: Project Evaluation, In P. C. Tobin and L. M. Blackburn [Eds], *Slow the Spread: A National Program to Manage the Gypsy Moth*. USDA Forest Service, General Technical Report NRS-6, pp. 61-76.
 10. Liebhold, A. M., A. A. Sharov, and P. C. Tobin. 2007. Population Biology of Gypsy Moth Spread, In P. C. Tobin and L. M. Blackburn [Eds], *Slow the Spread: A National Program to Manage the Gypsy Moth*. USDA Forest Service, General Technical Report NRS-6, pp. 15-32.
 11. Tobin, P. C. 2008. Cost analysis and biological ramifications for implementing the gypsy moth Slow-the-Spread Program. USDA Forest Service, General Technical Report NRS-37, 21 pp.
 12. Klepzig, K., T. M. Poland, N. Gillette, R. Haack, M. A. Keena, D. Miller, M. E. Montgomery, S. J. Seybold, and P. C. Tobin. 2010. Forest Service R&D – Invasive Insects: Visions for the Future, In M. E. Dix and K. Britton [Eds], *A Dynamic Invasive Species Research Vision: Opportunities and Priorities 2009-29*, USDA Forest Service, General Technical Report WO-79, pp. 13-21.
 13. Blackburn, L. M., D. S. Leonard, and P. C. Tobin. 2011. The use of *Bacillus thuringiensis kurstaki* for managing gypsy moth populations under the Slow-the-Spread program, 1996-2010, relative to the distributional range of threatened and endangered species. USDA Forest Service, Research Paper NRS-18, 20 pp.
 14. Tobin, P.C. 2018. Insects of the Arboretum. Washington Park Arboretum Bulletin, Summer 2018. pp.8-11.
 15. Tobin, P.C. 2019. Invasive insects of the Pacific Northwest. Washington Park Arboretum Bulletin, Fall 2019, pp.8-13.

PUBLICATIONS: INVITED BOOK CHAPTERS

1. Liebhold, A. M. and P. C. Tobin. 2005. Slow the Spread: a strategy for integrated pest management of gypsy moth in USA. *Memorias: XXVIII Congreso Nacional de Control Biológico*, R.B. Muniz, J.C.D. Castillo, F.T. Mejia and A.M. Jarillo (Eds.), pp. 378-386, Sociedad Mexicana de Control Biológico (ISBN: 968-839-483-1).

2. Liebhold, A. M. and P. C. Tobin. 2009. Population ecology of managing insect invasions using microbes. *Use of Microbes for Control and Eradication of Invasive Arthropods*, A. E. Hajek, T. R. Glare, and M. O'Callaghan (Eds.), pp. 33-45, Springer (ISBN: 978-1-4020-8559-8).
3. Hajek, A. E. and P. C. Tobin. 2009. North American eradications of Asian and European gypsy moth. *Use of Microbes for Control and Eradication of Invasive Arthropods*, A. E. Hajek, T. R. Glare, and M. O'Callaghan (Eds.), pp. 71-89, Springer (ISBN: 978-1-4020-8559-8).
4. Tobin, P. C., L. M. Blackburn, S. J. Fleischer, and E. A. Roberts. 2011. Population ecology considerations for monitoring and managing biological invasions. *GIS Applications in Agriculture: Invasive Species*, S. Clay (Ed.), pp. 29-58, CRC Press (ISBN: 978-1-4200-7880-0).
5. Tobin, P. C. and A. M. Liebhold. 2011. Gypsy moth. *Encyclopedia of Introduced Invasive Species*, D. Simberloff and M. Rejmánek (Eds.), pp. 298-304, UC Press (ISBN: 978-0-520-26421-2).
6. Tobin, P. C., D. Parry, and B. H. Aukema. 2014. The influence of climate change on insect invasions in temperate forest ecosystems. *Challenges and Opportunities for the World's Forests in the 21st Century*, T. Fenning (Ed.), Springer, pp. 267-296 (ISBN: 978-94-007-7075-1).
7. Tobin, P. C., A. M. Liebhold, E. A. Roberts, and L. M. Blackburn. 2015. Estimating spread rates of non-native species: the gypsy moth as a case study. *Invasive Alien Species: Pest Risk Modelling and Mapping*, R. Venette (Ed.), CABI, pp. 131-144.
8. Tobin, P.C., K.J. Haynes, and A.L. Carroll. 2023. Spatial dynamics of forest insects. *Forest Entomology and Pathology: Volume 1: Entomology*, J. Allison, T.D. Paine, B. Slippers, and M.J. Wingfield (Eds). Springer Nature, Switzerland.

PUBLICATIONS: REFERRED

1. Pitts, C. W., P. C. Tobin, S. Weidenboerner, P. H. Patterson, and E. S. Lorenz. 1998. In-house composting to reduce larval house fly, *Musca domestica* L., populations. *Journal of Applied Poultry Research* 7: 180-188.
2. Tobin, P. C. and C. W. Pitts. 1999. A flotation method for extracting insects from samples. *Journal of Medical Entomology* 36: 121-123.
3. Tobin, P. C., S. J. Fleischer, and C. W. Pitts. 1999. Spatio-temporal dynamics of resident and immigrating populations of *Carcinops pumilio* (Coleoptera: Histeridae) in high-rise poultry facilities. *Journal of Medical Entomology* 36: 568-577.
4. Tobin, P. C. and C. W. Pitts. 1999. Dispersal of *Muscidifurax raptorellus* Kogan and Legner (Hymenoptera: Pteromalidae) in a high-rise poultry house. *Biological Control* 16: 68-72.
5. Gray, J. P., C. W. Maddox, P. C. Tobin, J. D. Gummo, and C. W. Pitts. 1999. Reservoir competence of *Carcinops pumilio* for *Salmonella enteritidis* (Eubacteriales: Enterobacteriaceae). *Journal of Medical Entomology* 36: 888-891.
6. Saunders, M. C. and P. C. Tobin. 2000. Grape cane gallmaker (Coleoptera: Curculionidae), and its impact on cultivated grapes. *Journal of Economic Entomology* 93: 795-799.
7. Sked, S. L., C. T. Myers, A. A. Kazi, T. J. Tomon, and P. C. Tobin. 2001. The use of GMOs in agriculture will lead to increased levels of biological diversity in agroecosystems. *The American Entomologist* 49: 42-43.
8. Nagarkatti, S., P. C. Tobin, and M. C. Saunders. 2001. Diapause induction in the grape berry moth (Lepidoptera: Tortricidae). *Environmental Entomology* 30: 540-544.
9. Tobin, P. C., S. Nagarkatti, and M. C. Saunders. 2001. Modeling development in grape berry moth (Lepidoptera: Tortricidae). *Environmental Entomology* 30: 692-699.
10. Tobin, P. C. and C. W. Pitts. 2002. Geostatistical analysis and the impact of moisture on the spatial and temporal distribution of larval *Musca domestica* (Diptera: Muscidae). *Environmental Entomology* 31: 273-280.
11. Nagarkatti, S., A. J. Muza, M. C. Saunders, and P. C. Tobin. 2002. Role of the egg parasitoid

- Trichogramma minutum* in biological control of the grape berry moth, *Endopiza viteana*. *BioControl* 47: 373-385.
12. Tobin, P. C., S. Nagarkatti, and M. C. Saunders. 2002. Diapause maintenance and termination in grape berry moth (Lepidoptera: Tortricidae). *Environmental Entomology* 31: 708-713.
 13. Nagarkatti, S., P. C. Tobin, A. J. Muza, and M. C. Saunders. 2002. Carbaryl resistance in grape berry moth (Lepidoptera: Tortricidae) in New York and Pennsylvania. *Journal of Economic Entomology* 95: 1027-1032.
 14. Tobin, P. C. and O. N. Bjørnstad. 2003. Spatial structuring and cross-correlation in a transient predator-prey system. *Journal of Animal Ecology* 73: 460-467.
 15. Tobin, P. C., S. Nagarkatti, and M. C. Saunders. 2003. Phenology of grape berry moth (Lepidoptera: Tortricidae), in cultivated grape at selected geographic locations. *Environmental Entomology* 32: 340-346.
 16. Nagarkatti, S., P. C. Tobin, A. J. Muza, and M. C. Saunders. 2003. Release of native *Trichogramma minutum* to control grape berry moth. *The Canadian Entomologist* 135: 589-598.
 17. Smith, M. T., P. C. Tobin, J. S. Bancroft, G. Li, and R. Gao. 2004. Dispersal and spatiotemporal dynamics of Asian longhorned beetle (Coleoptera: Cerambycidae) in China. *Environmental Entomology* 33: 435-442.
 18. Tobin, P. C. 2004. Estimation of the spatial autocorrelation function: consequences of sampling dynamic populations in space and time. *Ecography* 27: 767-775.
 19. Tobin, P. C., A. A. Sharov, A. M. Liebhold, D. S. Leonard, E. A. Roberts, and M. R. Learn. 2004. Management of the gypsy moth through a decision algorithm under the Slow-the-Spread Project. *American Entomologist*. 50: 200-209.
 20. Tobin, P. C. and S. L. Whitmire. 2005. The spread of gypsy moth and its relationship to defoliation. *Environmental Entomology* 34: 1448-1455.
 21. Tobin, P. C. and O. N. Bjørnstad. 2005. Roles of dispersal, stochasticity, and nonlinear dynamics in the spatial structuring of transient predator-prey populations. *Population Ecology* 47: 221-227.
 22. Whitmire, S. L. and P. C. Tobin. 2006. Persistence of invading gypsy moth colonies in the United States. *Oecologia* 147: 230-237.
 23. Nansen, C., A. M. Liebhold, and P. C. Tobin. 2006. Contour mapping and number of point observations. Letter to the Editor, *Journal of Economic Entomology* 99: 599-600.
 24. Huebner, C. D. and P. C. Tobin. 2006. Invasibility of mature and 15-year-old deciduous forests by exotic plants. *Plant Ecology* 186: 57-68.
 25. Liebhold, A. M. and P. C. Tobin. 2006. Growth of newly established alien populations: comparison of North American gypsy moth colonies with invasion theory. Invited paper, Special Issue on "Population Ecology of Biological Invasions," *Population Ecology* 48: 253-262.
 26. Johnson, D. M., A. M. Liebhold, P. C. Tobin, and O. N. Bjørnstad. 2006. Allee effects and pulsed invasion by the gypsy moth. *Nature* 444: 361-363.
 27. Tobin, P. C., A. M. Liebhold, and E. A. Roberts. 2007. Comparison of methods for estimating the spread of a nonindigenous species. *Journal of Biogeography* 34: 305-312.
 28. Tobin, P. C., S. L. Whitmire, D. M. Johnson, O. N. Bjørnstad, and A. M. Liebhold. 2007. Invasion speed is affected by geographic variation in the strength of Allee effects. *Ecology Letters* 10: 36-43.
 29. Tobin, P. C. 2007. Space-time patterns during the establishment of a nonindigenous species. *Population Ecology* 49: 257-263.
 30. Morin, R. S., A. M. Liebhold, P. C. Tobin, K. W. Gottschalk, and E. Luzader. 2007. Spread of beech bark disease in the eastern United States and its relationship to regional forest composition. *Canadian Journal of Forest Research* 37: 726-736.

31. Thorpe, K. W., K. S. Tcheslavskaja, P. C. Tobin, L. M. Blackburn, D. S. Leonard, and E. A. Roberts. 2007. Persistent effects of aerial applications of disparlure on gypsy moth trap catch and mating success. *Entomologia Experimentalis et Applicata* 125: 223-229.
32. Liebhold, A. M. and P. C. Tobin. 2008. Population ecology of insect invasions and their management. *Annual Review of Entomology* 53: 387-408.
33. Tobin, P. C. and L. M. Blackburn. 2008. Long-distance dispersal of the gypsy moth (Lepidoptera: Lymantriidae) facilitated its initial invasion of Wisconsin. *Environmental Entomology* 37: 87-93.
34. Tobin, P. C., S. Nagarkatti, G. Loeb, and M. C. Saunders. 2008. Historical and projected interactions between climate change and insect voltinism in a multivoltine species. *Global Change Biology* 14: 951-957.
35. Robinet, C., D. R. Lance, K. W. Thorpe, K. S. Tcheslavskaja, P. C. Tobin, and A. M. Liebhold. 2008. Dispersion in time and space affect mating success and Allee effects in invading gypsy moth populations. *Journal of Animal Ecology* 77: 966-973.
36. Gray, R. H., C. G. Lorimer, P. C. Tobin, and K. F. Raffa. 2008. Pre-outbreak dynamics of a recently established invasive herbivore: Roles of natural enemies and habitat structure in stage-specific performance of gypsy moth (Lepidoptera: Lymantriidae) populations in northeastern Wisconsin. *Environmental Entomology* 37: 1174-1184.
37. Tobin, P. C. and J. F. Frazier. 2009. A slide down a slippery slope: ethical guidelines in the dissemination of computer-based presentations. *Bulletin of the Ecological Society of America* 90: 39-42.
38. Tobin, P. C., C. Robinet, D. M. Johnson, S. L. Whitmire, O. N. Bjørnstad, and A. M. Liebhold. 2009. The role of Allee effects in gypsy moth (*Lymantria dispar* (L.)) invasions. Invited paper, Special Issue on "Allee Effects: Mating and Invasion," *Population Ecology* 51: 373-384.
39. Raffa, K. F., B. Aukema, B. J. Bentz, A. Carroll, N. Erbilgin, D. A. Herms, J. A. Hicke, R. W. Hofstetter, S. Katovich, B. S. Lindgren, J. Logan, W. Mattson, A. S. Munson, D. J. Robison, D. L. Six, P. C. Tobin, P. A. Townsend, and K. F. Wallin. 2009. A literal use of "Forest Health" safeguards against misuse and misapplication. *Journal of Forestry* 107: 276-277.
40. Contarini, M., K. S. Onufrieva, K. W. Thorpe, K. F. Raffa, and P. C. Tobin. 2009. Mate-finding failure as an important cause of Allee effects along the leading edge of an invading insect population. *Entomologia Experimentalis et Applicata* 133: 307-314.
41. White, J. B., Y.-L. Park, T. P. West, and P. C. Tobin. 2009. Assessment of potential fumigants to control *Chaetodactylus krombeini* (Acari: Chaetodactylidae) associated with *Osmia cornifrons* (Hymenoptera: Megachilidae). *Journal of Economic Entomology* 102: 2090-2095.
42. Tobin, P. C., K. T. Klein, and D. S. Leonard. 2009. Gypsy moth (Lepidoptera: Lymantriidae) flight behavior and phenology based upon field-deployed automated pheromone-baited traps. *Environmental Entomology* 38: 1555-1562.
43. Orozumbekov, A. A., A. M. Liebhold, P. I. Vasily, and P. C. Tobin. 2009. Gypsy moth (Lepidoptera: Lymantriidae) in Central Asia. *American Entomologist* 55: 258-264.
44. Liebhold, A.M. and P. C. Tobin. 2010. Exploiting the Achilles heels of pest invasions: Allee effects, stratified dispersal and management of forest insect establishment and spread. Invited paper, Special Supplemental Issue, Proceedings from the IUFRO Forest Biosecurity Conference, Rotorua, New Zealand. *New Zealand Journal of Forestry Science* 40 Suppl. S25-S33.
45. Tobin, P. C., J. Van Stappen, L. M. Blackburn. 2010. Visitation rates to the Apostle Islands National Lakeshore and the introduction of the non-native species *Lymantria dispar* (L.). *Journal of Environmental Management* 91: 1991-1996.
46. Hajek, A. E. and P. C. Tobin. 2010. Micro-managing arthropod invasions: eradication and control of invasive arthropods with microbes. *Biological Invasions* 12: 2895-2912.

47. Onufrieva, K. S., K. W. Thorpe, A. D. Hickman, P. C. Tobin, D. S. Leonard, and E. A. Roberts. 2010. Effects of SPLAT® GM sprayable pheromone formulation on gypsy moth mating success. *Entomologia Experimentalis et Applicata* 136: 109-115.
48. Tobin, P. C., A. Diss-Torrance, L. M. Blackburn, and B. D. Brown. 2010. What does "local" firewood buy you? Managing the risk of invasive species introduction. *Journal of Economic Entomology* 103: 1569-1576.
49. Timer, J., P. C. Tobin, and M. C. Saunders. 2010. Geographic variation in diapause induction: the grape berry moth (Lepidoptera: Tortricidae). *Environmental Entomology* 39: 1751-1755.
50. Vercken, E., A. M. Kramer, P. C. Tobin, and J. M. Drake. 2011. Critical patch size generated by Allee effect in gypsy moth, *Lymantria dispar* (L.) *Ecology Letters* 14: 179-186.
51. Tobin, P. C., L. Berec, and A. M. Liebhold. 2011. Exploiting Allee effects for managing biological invasions. *Ecology Letters* 14: 615-624.
52. Chen, S., S. J. Fleischer, P. C. Tobin, and M. C. Saunders. 2011. Predicting insect voltinism under high and low greenhouse gas emission conditions. Forum Article, *Environmental Entomology* 40: 505-515.
53. Tobin, P. C., A. Zhang, K. Onufrieva, and D. S. Leonard. 2011. A field evaluation of the effect of temperature on the release of disparlure from a pheromone-baited trapping system used to monitor the gypsy moth (Lepidoptera: Lymantriidae). *Journal of Economic Entomology* 104: 1265-1271.
54. Bigsby, K. M., P. C. Tobin, and E. O. Sills. 2011. Anthropogenic drivers of gypsy moth spread. *Biological Invasions* 13: 2077-2090.
55. Hajek, A. E. and P. C. Tobin. 2011. Introduced pathogens follow the invasion front of a spreading alien host. *Journal of Animal Ecology* 80: 1217-1226.
56. Suckling, D. M., P. C. Tobin, D. G. McCullough, and D. A. Herms. 2012. Combining tactics to exploit Allee effects for eradication of alien insect populations. Forum Article, *Journal of Economic Entomology* 105: 1-13.
57. Turcotte, R. M., T. R. Elliott, M. A. Fajvan, Y-L. Park, D. A. Snider, and P. C. Tobin. 2012. Effects of ice-storm damage on hardwoods survival and growth in Ohio. *Northern Journal of Applied Forestry* 29: 53-59.
58. Tobin, P. C., B. B. Bai, D. A. Eggen, D. S. Leonard. 2012. The ecology, geopolitics, and economics of managing the gypsy moth, *Lymantria dispar* (L.), in the United States. Invited Paper, Special Issue on "Forest Pest Management in the Americas," *International Journal of Pest Management* 58: 195-210.
59. Tobin, P. C. and A. E. Hajek. 2012. Release, establishment, and initial spread of the fungal pathogen *Entomophaga maimaiga* in island populations of *Lymantria dispar*. *Biological Control* 63: 31-39.
60. Tobin, P. C., K. S. Onufrieva, and K. W. Thorpe. 2013. The relationship between male moth density and female mating success in invading populations of *Lymantria dispar* (L.). Invited paper, Special Issue on "Female Mating Failures," *Entomologia Experimentalis et Applicata* 146: 103-111.
61. Onufrieva, K. S., K. W. Thorpe, A. D. Hickman, D. S. Leonard, E. A. Anderson, and P. C. Tobin. 2013. Persistence of the gypsy moth pheromone, disparlure, in the environment in various climates. *Insects* 4: 104-116.
62. Frank, K. L., P. C. Tobin, H. W. Thistle Jr. and L. S. Kalkstein. 2013. Interpretation of gypsy moth frontal advance using meteorology in a conditional algorithm. *International Journal of Biometeorology* 57: 459-473.
63. Ranger, C.M. P. C. Tobin, M.E. Reding, A.M. Bray, J.B. Oliver, P.B. Schultz, S.D. Frank, and A. Persad. 2013. Interruption of the semiochemical-based attraction of ambrosia beetles to

- ethanol-baited traps and ethanol-injected trap trees by verbenone. *Environmental Entomology* 42: 539-547.
64. Tobin, P. C., R. M. Turcotte, and D. A. Snider. 2013. When one is not necessarily a lonely number: initial colonization dynamics of *Adelges tsugae* on eastern hemlock, *Tsuga canadensis*. *Biological Invasions* 15: 1925-1932.
 65. Tobin, P.C., L. M. Blackburn, R. H. Gray, C. T Lettau, A. M. Liebhold, and K. F. Raffa. 2013. Using delimiting surveys to characterize the spatiotemporal dynamics facilitates the management of an invasive non-native insect. *Population Ecology* 55: 545-555.
 66. Tobin, P. C., J. M. Kean, D. M. Suckling, D. G. McCullough, D. A. Herms, and L. D. Stringer. 2014. Determinants of successful arthropod eradication programs. *Biological Invasions* 16:401-414.
 67. Tobin, P. C., D. R. Gray, and A. M. Liebhold. 2014. Supraoptimal temperatures influence the range dynamics of a non-native insect. *Diversity & Distributions* 20:813-823.
 68. Bigsby, K. M., M. J. Ambrose, P. C. Tobin, and E. O. Sills. 2014. The cost of gypsy moth sex in the city. *Urban Forestry & Urban Greening* 13:459-468.
 69. Tobin, P. C., J. Bolyard, K. S. Onufrieva, and A. D. Hickman. 2014. The effect of male and female age on *Lymantria dispar* (Lepidoptera: Lymantriidae) fecundity. *Journal of Economic Entomology* 107:1076-1083.
 70. Onufrieva, K. S., A. D. Hickman, D. S. Leonard, and P. C. Tobin. 2014. Efficacies and secondyear effects of SPLAT GM™ and SPLAT GM™ Organic formulations. *Insects* 6:1-12.
 71. Walter, J.A., M.S. Meixler, T. Mueller, W.F. Fagan, P.C. Tobin, and K.J. Haynes. 2015. How topography induces reproductive asynchrony and alters gypsy moth invasion dynamics. *Journal of Animal Ecology* 84:188-198.
 72. Ranger, C.M., P. C. Tobin, and M. E. Reding. 2015. Ubiquitous volatile compound facilitates efficient host location by a non-native ambrosia beetle. *Biological Invasions* 17:675-686.
 73. Hajek, A.E., P.C. Tobin, and K.J. Haynes. 2015. Replacement of a dominant viral pathogen by a fungal pathogen does not alter the collapse of a regional forest insect outbreak. *Oecologia* 177:785-797.
 74. Tobin, P.C. 2015. Ecological consequences of pathogen and insect invasions. Invited Review, *Current Forestry Reports* 1:25-32.
 75. Persad, A. and P.C. Tobin. 2015. Evaluation of ash tree symptoms associated with emerald ash borer infestation in urban forests. *Arboriculture and Urban Forestry* 41:103-109.
 76. Grayson, K.L., D. Parry, T.M. Faske, A. Hamilton, P.C. Tobin, S.J. Agosta, and D.M. Johnson. 2015. Performance of wild and laboratory-reared gypsy moth (Lepidoptera: Erebidae): A comparison between foliage and artificial diet. *Environmental Entomology* 44:864-873.
 77. Liang, J., M. Zhou, P.C. Tobin, A.D. McGuire, and P.B. Reich. 2015. Biodiversity influences plant productivity through niche-efficiency. *Proceedings of the National Academy of Sciences of the United States* 112:5738-5743.
 78. Walter, J.A., D.M. Johnson, P.C. Tobin, and K.J. Haynes. 2015. Population cycles produce periodic range boundary pulses. *Ecography* 38: 1200-1211.
 79. Watson, J., J. Liang, P.C. Tobin, X. Lei, J. Rentch, and C. Artis. 2015. Large-scale forest inventories of the United States and China reveal positive effects of biodiversity on productivity. *Forest Ecosystems* 2:1-16.
 80. Liebhold, A.M., L. Berec, E.G. Brockerhoff, R.S. Epanchin-Niell, A. Hastings, D.A. Herms, J.M. Kean, D.G. G. McCullough, D.M. Suckling, P.C. Tobin, and T. Yamanaka. 2016. Eradication of invading insect populations: From concepts to applications. *Annual Review of Entomology* 61: 335-352.
 81. Limbu, S., K. Cassidy, M. Keena, P.C. Tobin, and K. Hoover. 2016. Host range specificity of

- Scymnus camptodromus* (Coleoptera: Coccinellidae), a predator of hemlock woolly adelgid. *Environmental Entomology* 45: 94-100.
82. Uelmen, J.A. Jr., R.L. Lindroth, P.C. Tobin, P.B. Reich, E.G. Schwartzberg, and K.F. Raffa. 2016. Effects of winter temperatures, spring degree-day accumulation, and insect population source on phenological synchrony between forest tent caterpillar and host trees. *Forest Ecology and Management* 362: 241-250.
 83. Tobin, P.C., K. Thielen-Cremers, L. Hunt, and D. Parry. 2016. All quiet on the western front? Using phenological inference to detect the presence of a latent gypsy moth invasion in Northern Minnesota. *Biological Invasions* 18: 3561-3573.
 84. Bjørnstad, O.N., W.A. Nelson, and P.C. Tobin. 2016. Developmental synchrony in multivoltine insects: generation separation versus smearing. *Population Ecology* 58: 479-491.
 85. Walter, J.A., A.L. Firebaugh, P.C. Tobin, K.J. Haynes. 2016. Invasion in patchy landscapes is affected by dispersal mortality and mate-finding failure. *Ecology* 97: 3389-3401.
 86. Thompson, L.M., T.M. Faske, N. Banahene, D. Grim, S.J. Agosta, D. Parry, P.C. Tobin, D.M. Johnson, and K.L. Grayson. 2017. Variation in growth and developmental responses to supraoptimal temperatures near latitudinal range limits of gypsy moth, *Lymantria dispar* (L.), an expanding invasive species. *Physiological Entomology* 42: 181-190.
 87. Streifel, M., P.C. Tobin, L. Hunt, H. Nadel, J. Molongoski, and B.H. Aukema. 2017. Landscape-level patterns of elevated FS1 Asian allele frequencies in populations of gypsy moth (Lepidoptera: Erebidae) at a northern U.S. boundary. *Environmental Entomology* 46: 403-412.
 88. Tobin, P.C. R.M. Turcotte, L.M. Blackburn, J. Juracko, and B. Simpson. 2017. The big chill: Quantifying the effect of the 2014 North American cold wave on hemlock woolly adelgid populations in the central Appalachian Mountains. *Population Ecology* 59: 251-258.
 89. Mech, A.M., P.C. Tobin, R.O. Teskey, J.R. Rhea, and K.J.K. Gandhi. 2018. Increases in summer temperatures decrease the survivorship of an invasive forest insect. *Biological Invasions* 20: 365-374.
 90. Hajek, A.E., P.C. Tobin, S. Kroll, and S. Long. 2018. Symbionts mediate oviposition behavior in invasive and native woodwasps. *Agricultural and Forest Entomology* 20: 365-374.
 91. Tobin, P.C. and R.M. Turcotte. 2018. Phenology of hemlock woolly adelgid (Hemiptera: Adelgidae) in the central Appalachian Mountains, USA. *Journal of Economic Entomology* 111: 2483-2487.
 92. Jagemann, S.M., J. Juzwik, P.C. Tobin, and K.F. Raffa. 2018. Seasonal and regional distributions, degree-day models, and phoresy rates of the major vectors of the oak wilt fungus, *Ceratocystis fagacearum*, in Wisconsin. *Environmental Entomology* 47: 1152-1164.
 93. Tobin, P.C. 2018. Managing invasive species. Invited Review, *F1000 Research Review*-1686; DOI: 10.12688/f1000research.15414.1.
 94. Onufrieva, K.S., A.D. Hickman, D.S. Leonard, and P.C. Tobin. 2019. Ground application of mating disruption against the gypsy moth (Lepidoptera: Erebidae). *Journal of Applied Entomology* 143: 1154-1160.
 95. Callahan, S.T., A. Bidwell, C. Lin, T.H. DeLuca, and P.C. Tobin. 2019. Effects of copper exposure and increased temperatures on Collembola in western Washington, USA. *City and Environment Interactions* 4: 100026.
 96. Onufrieva, K.S., A.D. Hickman, D.S. Leonard, and P.C. Tobin. 2019. Relationship between efficacy of mating disruption and gypsy moth density. *International Journal of Pest Management* 65: 44-52.
 97. Streifel, M., P.C. Tobin, A. M. Kees, and B.H. Aukema. 2019. Range expansion of *Lymantria dispar dispar* (L.) (Lepdoptera: Erebidae) along its northwestern margin in North America

- despite low predicted climatic suitability. *Journal of Biogeography* 46: 58-69.
98. Faske, T.M., L. M. Thompson, N. Banahene, A. Levorse, M. Q. Herrera, K. Sherman, S. E. Timko, B. Yang, D.R. Gray, D. Parry, P. C. Tobin, A. J. Eckert, D. M. Johnson, and K. L. Grayson. 2019. Can gypsy moth stand the heat? A reciprocal transplant experiment with an invasive forest pest across its southern range margin. *Biological Invasions* 21: 1365-1378.
 99. Bidwell, A.L., S.T. Callahan, P.C. Tobin, B.K. Nelson, and T.H. DeLuca. 2019. Quantifying the elemental composition of mosses in western Washington USA. *Science of The Total Environment* 693, 133404.
 100. Mech, A.M., K.A. Thomas, T.D. Marsico, D.A. Herms, C.R. Allen, M.P. Ayres, K.J.K. Gandhi, J. Gurevitch, N.P. Havill, R.A. Hufbauer, A.M. Liebhold, K.F. Raffa, A.N. Schulz, D.R. Uden, and P.C. Tobin. 2019. Evolutionary history predicts high-impact invasions by herbivorous insects. *Ecology and Evolution* 9:12216–12230.
 101. Walter, J.A., K.L. Grayson, L.M. Blackburn, P.C. Tobin, and D.M. Johnson. 2020. Spatiotemporal variability in Allee effects of invading gypsy moth populations. *Biological Invasions* 22: 189-193.
 102. Freeman, M.B., A. LaBarge, and P.C. Tobin. 2020. Phenology of Douglas-fir beetle (Coleoptera: Curculionidae) and its role in Douglas-fir mortality in western Washington. *Environmental Entomology* 49: 246-254.
 103. Schulz, A.N., A.M. Mech, C.R. Allen, M.P. Ayres, K.J.K. Gandhi, J. Gurevitch, N.P. Havill, D.A. Herms, R.A. Hufbauer, A.M. Liebhold, K.F. Raffa, M.J. Raupp, K.A. Thomas, P.C. Tobin, and T. D. Marsico. 2020. The impact is in the details: evaluating a standardized protocol and scale for determining non-native insect impact. *NeoBiota* 55: 61-83.
 104. Bradshaw, M. U. Braun, S. Wang, S. Liu, J. Feng, H-D. Shin, Y-J. Choi, S. Takamatsu, T.S. Bulgakov, and P.C. Tobin. 2020. Phylogeny and taxonomy of powdery mildew on *Viburnum* species. *Mycologia* 112: 616-632.
 105. Bradshaw, M. and P.C. Tobin. 2020. Sequencing herbarium specimens of a common detrimental plant disease (powdery mildew). *Phytopathology* 110:1248-1254.
 106. Kearns, D.N. and P.C. Tobin. 2020. Oregon vs. the gypsy moth: Forty years of battling an invasive species. *The American Entomologist* 66: 50-58.
 107. Jahant-Miller, C., P.C. Tobin, and D. Parry. 2020. Spatial and temporal changes in male gypsy moth wing morphology reflect host tree phenology and habitat quality. *Agricultural and Forest Entomology* 22: 390-400.
 108. De Luccia, M.R., B. Peterson, M.J. Bradshaw, ad P.C. Tobin. 2020. Effectiveness of herbicides on *Lysimachia vulgaris*: A 17-year case study. *Invasive Plant Science and Management* 13: 282-287
 109. Bradshaw, M., U. Braun, J. Meebon, and P.C. Tobin. 202x. Phylogeny and taxonomy of powdery mildew caused by *Erysiphe* species on *Corylus* hosts. *Mycologia* 113: 459-475.
 110. Bradshaw, M., E. Goolsby, C. Mason, and P.C. Tobin. 202x. Evolution of disease severity and susceptibility in the Asteraceae to the powdery mildew *Golovinomyces latissporus*: major phylogenetic structure coupled with highly variable disease severity at fine scales. *Plant Disease* 105: 268-275.
 111. Bradshaw, M., U. Braun, M. Elliott, J. Kruse, S.-Y. Liu, G. Guan, and P.C. Tobin. 2021. A global genetic analysis of herbarium specimens reveals the invasion dynamics of an introduced plant pathogen. *Fungal Biology* 125: 585-595.
 112. Westreich, L.R. and P.C. Tobin. 2021. Comparison of pollen grain treatments without mechanical fracturation prior to protein quantification. *Journal of Insect Science* 21: 1-3.
 113. Tobin, P.C., B.L. Strom, J.A. Francese, D.A. Herms, D.G. McCullough, T.M. Poland, K.L. Ryall, T. Scarr, P.J. Silk, and H.W. Thistle. 2021. Evaluation of trapping schemes to detect emerald ash borer (Coleoptera: Buprestidae). *Journal of Economic Entomology* 114: 1201-1210.

114. Betzen, J.J., A. Ramsey, D. Omdal, G.J. Ettl, and P.C. Tobin. 2021. Bigleaf maple, *Acer macrophyllum* Pursh, decline in western Washington, USA. *Forest Ecology and Management* 501: 119681.
115. Schulz, A.N., A.M. Mech, M.P. Ayres, K.J.K. Gandhi, N.P. Havill, D.A. Herms, A.M. Hoover, R.A. Hufbauer, A.M. Liebhold, T.D. Marsico, K.F. Raffa, P.C. Tobin, D.R. Uden, and K.A. Thomas. 2021. Predicting non-native insect impact: focusing on the trees to see the forest. *Biological Invasions* 23: 3921-3936.
116. Garrison, R.R. and P.C. Tobin. 2022. Development of azalea lace bug, *Stephanitis pyrioides*, on susceptible and resistant *Rhododendron* species in western Washington. *Journal of Economic Entomology* 115: 233-239.
117. Epanchin-Niell, R., J. Lu, A. Thompson, P.C. Tobin, D.R. Gray, and A.M. Liebhold. 2022. Socio-environmental drivers of establishment of *Lymantria dispar*, a nonnative forest pest, in the United States. *Biological Invasions* 24: 157-173.
118. Tobin, P.C. and K.F. Raffa. 2022. Spread rates do not necessarily predict outbreak dynamics in a broadly distributed invasive insect. *Forest Ecology and Management* 520: 120357.
119. Bradshaw, M., L. Quijada, P.C. Tobin, U. Braun, C. Newlander, T.G. Potterfield, E. Alford, C. Contreras, A. Coombes, S. Moparthi, E. Buchholz, D. Murphy, W. Enos, A. Bower, and D. Pfister. 2022. More than just plants: Botanical gardens as a source of fungal diversity. *HortScience* 57:1289-1293.
120. Garrison, R.R. and P.C. Tobin. 2022. Susceptibility of *Rhododendron* to azalea lace bug, *Stephanitis pyrioides* (Scott). *Journal of Environmental Horticulture* 40:94-102.
121. Metz, R. and P.C. Tobin. 2022. Effects of temperature and host plant fragmentation on *Lymantria dispar* population growth along its expanding population front. *Biological Invasions* 24:2679-2691.
122. Tobin, P.C. and C. Robinet. 2022. Advances in understanding and predicting the spread of invading insect populations. *Current Opinion in Insect Science* 54: 100985.
123. Uden, D.R., A.M. Mech, N.P. Havill, A.N. Schulz, M.P. Ayres, D.A. Herms, A.M. Hoover, K.J.K. Gandhi, R.A. Hufbauer, A.M. Liebhold, T.D. Marsico, K.F. Raffa, K.A. Thomas, P.C. Tobin, and C.R. Allen. 2023. Phylogenetic risk assessment is robust for forecasting the impact of non-native insects on North American trees. *Ecological Applications* 33: e2761.
124. Westreich, L.R., S.T. Westreich, and P.C. Tobin. 2023. Native solitary bee reproductive success depends on early season precipitation and host plant richness. *Oecologia* 201: 965-978.
125. Westreich, L.R., S.T. Westreich, and P.C. Tobin. 202x. Bacterial and fungal symbionts in pollen provisions of a native solitary bee in urban and rural environments. *Microbial Ecology* (In Press).
126. Harvey, B.J., S.J. Hart, P.C. Tobin, T.T. Veblen, D. C. Donato, M.S. Buonanduci, A.M. Pane, H.D. Stanke, and K.C. Rodman. 202x. Emergent hotspots of biotic disturbances and their consequences for forest resilience. *Frontiers in Ecology and the Environment* (In Press).
127. Bidwell, A.L., P.C. Tobin. and T.H. DeLuca. 202x. Quantifying nitrogen-fixation in *Acer macrophyllum* canopy bryophytes in the Pacific Northwest, USA. *Plant and Soil* (In Press).