

Matthew Richard Helmus

Associate Professor
Temple University
Department of Biology
1925 N. 12th Street, Suite 502
Philadelphia, PA 19122-1801

mrhelimus@temple.edu

<https://www.iecolab.org/matthew-r-helmus/>

<https://orcid.org/0000-0003-3977-0507>

EDUCATION

2008 PhD Zoology, University of Wisconsin Madison
2001 BS Biology and Sociology, University of Central Arkansas

ACADEMIC POSITIONS*current*

2024- Associate Professor, Department of Biology, Temple University, Philadelphia

past

2016-2024 Assistant Professor, Department of Biology, Temple University, Philadelphia
2012-16 Postdoctoral Fellow, Amsterdam Global Change Institute, Vrije Universiteit
2010-11 Postdoctoral Fellow, Department of Ecology and Evolution, University of Chicago
2009-10 Postdoctoral Fellow, Xishuangbanna Tropical Botanical Garden (XTBG), China
2002-08 Graduate Student, Department of Zoology, University of Wisconsin, Madison

TEACHING EXPERIENCE*current*

2018- *Global Change Science Analytics with R*, Temple University (designed course)
2017- *Principles of Ecology*, Temple University (designed course)

past

2020 *Foundations of Ecology*, Temple University, graduate seminar (designed course)
2013 *Ecology of Sustainable Lands*, VU University, Netherlands (co-designed course)
2009 *Advanced Field Ecology and Conservation*, XTBG China (co-designed course)
2005-06 *Ecology and Evolution*, University of Wisconsin (TA, lecturer)
2003-08 *Introduction to Biology II*, University of Wisconsin (TA)
2002 *Introduction to Biology I*, University of Wisconsin (TA)
2002 *Principles of Biology II*, University of Central Arkansas (TA)

PUBLICATIONS[Google Scholar](#)

† Indicates Undergraduate mentee

* Indicates Graduate or Postdoc mentee.

Preprints

71. *Keller, J., S. De Bona, & **M.R. Helmus**. Leveraging spatial scale and temporal variation to optimize estimates of invasive spread rates. bioRxiv. 636321
70. *Gleditsch, J.M., J.E. Behm, & **M.R. Helmus**. The great acceleration of island saturation by species introductions in the Anthropocene has altered species-area relationships. bioRxiv. 523426
69. *Huron, N.A., S.B. Hedges & **M.R. Helmus**. Detecting stabilizing, directional, and disruptive patterns of anthropogenic species loss with general models of nonrandom extinction. bioRxiv. 507476.
68. *Huron, N.A. & **M.R. Helmus**. Predicting host associations of the invasive spotted lanternfly on trees across the USA. bioRxiv. 507604.

Published

67. J.E. Behm, J. Ellers, W.A.M. Jesse, T.J. Tran & **M.R. Helmus**. 2026. Estimating competition outcomes between native and invading species using trait and count data. *Ecology*. 107(2):e70304.
66. Cannon, S.L., & **M.R. Helmus**. 2025 Honeydew and feeding-wound exudate from invasive spotted lanternfly (Hemiptera: Fulgoridae) on invasive tree-of-heaven (Sapindales: Simaroubaceae) subsidize North American pollinators, parasitoids, and other invertebrates. *Environmental Entomology*. 54(6):1216–1230.
65. Belouard, N., S. De Bona, **M.R. Helmus**, I.G. Smith & J.E. Behm. 2025. A method to quantify jump dispersal of invasive species from occurrence data: the case of the spotted lanternfly, *Lycorma delicatula*. *NeoBiota*. 98:319–334.
64. *Woods, J., *F. Seker, B. Seibold & **M.R. Helmus**. 2025. Mathematical framework for modeling the movement of adult spotted lanternfly into vineyards and application for optimal control. USDA Forest Service Spotted Lanternfly Research & Technology Development Meeting. (Conference Proceeding). R9–PR–018–25:54–56.
63. **Helmus, M.R.** 2025. Invasion risk of *Lycorma delicatula* to the Lake Erie Grape Belt. USDA Forest Service Spotted Lanternfly Research & Technology Development Meeting. (Conference Proceeding). R9–PR–018–25:42–46.
62. *Keller, J. & **M.R. Helmus**. 2025. Spotted lanternfly spread in the United States 2014 through 2023, a multi-scale analysis. USDA Forest Service Spotted Lanternfly Research & Technology Development Meeting. (Conference Proceeding). R9–PR–018–25:36–37.
61. Seibold, B. & **M.R. Helmus**. 2025. Quantifying spotted lanternfly establishment risk and resistance based on principled life cycle models. USDA Forest Service Spotted Lanternfly Research & Technology Development Meeting. (Conference Proceeding). R9–PR–018–25:57-59.
60. *Lewkiewicz, S. M., B. Seibold & **M.R. Helmus**. 2024. Quantifying population resistance to climatic variability: The invasive spotted lanternfly grape pest is buffered against temperature extremes in California. *Ecological Modeling*. 497:110841

59. *Jesse, W.A.M., J. Ellers, J.E. Behm, G.C. Costa, S.B. Hedges & **M.R. Helmus**. 2024. Elevated human impact on islands increases the introduction and extinction status of native insular reptiles. *Ecography*. 11:e06817
58. Phillips, P.M., K.E. Langhans, **M.R. Helmus**, W.A. Jesse, Y. Surget-Groba, & J.E. Behm. 2024. Dispersal restriction and facilitation in species with differing tolerance to development: A landscape genetics study of native and introduced lizards. *Diversity and Distributions*. 30(7):e13858
57. Busala, G.M., **M.R. Helmus** & J.E. Behm. 2024. Non-native herpetofauna of Aruba Island (Caribbean): patterns and insights. *Biological Invasions*. 26:2421-2433.
56. *De Bona, S., L. Barringer, P. Kurtz, J. Losiewicz, G.R. Parra, & **M.R. Helmus**. 2023. Iydemapr: an R package to track the spread of the invasive Spotted Lanternfly (*Lycorma delicatula*, White 1845) (Hemiptera, Fulgoridae) in the United States. *Neobiota*. 86:151-168
55. Ramirez, V.A., S. De Bona, **M.R. Helmus** & J.E. Behm. 2023. Multiscale assessment of oviposition habitat associations and implications for management in the spotted lanternfly (*Lycorma delicatula*), an emerging invasive pest. *Journal of Applied Ecology*. 60(3):411-420
54. *Gleditsch, J.M., J.E. Behm, J. Ellers, *W.A.M. Jesse, **M.R. Helmus**. 2023. Contemporizing island biogeography theory with anthropogenic drivers of species richness. *Global Ecology and Biogeography*. 32(2):233-249
53. *Lewkiewicz, S.M., *S. De Bona, **M.R. Helmus**, B. Seibold. 2022. Temperature sensitivity of pest reproductive numbers in age-structured PDE models, with a focus on the invasive spotted lanternfly. *Journal of Mathematical Biology*. 85(3) 1-37
52. *Huron, N.A., J.E. Behm, **M.R. Helmus**. 2022. Paninvasion severity assessment of a US grape pest to disrupt the global wine market. *Communications Biology*. 5(1):1-11
51. Li, D, S Record, E Sokol, ME Bitters, MY Chen, AY Chung, **MR Helmus**, R Jaimes, L Jansen, MA Jarzyna, MG Just, JM LaMontagne, B Melbourne, W Moss, K Norman, S Parker, N Robinson, B Seyednasrollah, C Smith, S Spaulding, T Surasinghe, S Thomsen, P Zarnetske. 2022. Standardized NEON organismal data for biodiversity research. *Ecosphere*. 13(7):e4141
50. †Turner, D.B., J.E. Behm, P.M. Philips, †V.A. Ramirez and **M.R. Helmus**. 2022. Coding for broader impact: leveraging coding skills for stakeholder communication. *Frontiers in Ecology and the Environment*. 20(4):255-262
49. Cavender-Bares, J., E. Nelson, J.E. Meireles, J. Lasky, D.A. Miteva, D. Nowak, W. Pearse, **M.R. Helmus**, A.E. Zanne, W. Fagan, C. Mihiar, N.Z. Muller, N. Kraft, S. Polasky. 2022. The hidden value of trees: quantifying the ecosystem services of tree lineages and their major threats across the continental US. *PLOS Sustainability and Transformation*. 1(4):e0000010
48. Behm, J.E., G.M. Busala, & **M.R. Helmus**. 2022 First records of three new lizard species and a range expansion of a fourth lizard species introduced to Aruba. *BiolInvasions Records* 11(1):296-306
47. Jarzyna, M.A., K.E.A. Norman, J.M. LaMontagne, **M.R. Helmus**, D. Li, S.M. Parker, M.P. Rocha, S. Record, E.R. Sokol, P.L. Zarnetske, T.D. Surasinghe. 2022. Community stability is related to animal diversity change. *Ecosphere*. 13(3) e3970
46. Nagy, RC, JK Balch, EK Bissell, ME Cattau, NF Glenn, BS Halpern,...**M.R. Helmus**...et al. 2021. Harnessing the NEON data revolution to advance open environmental science with a diverse and data-capable community. *Ecosphere*. 12(12) e03833
45. Prinzing A, S. Pavoine, H Jactel, J Hortal, SM Hennekens, WA Ozinga, IV Bartish, **M.R. Helmus**, I Kühn, DS Moen, E Weiher, M Brändle, M Winter, C Violle, P Venail, O

- Purschke, B Yguel. 2021. Disturbed habitats locally reduce the signal of deep evolutionary history in functional traits of plants. *New Phytologist* 232(4) 1849-1862
44. Ordway, E.M., A.J. Elmore, S. Kolstoe, J.E. Quinn, R. Swanwick, M. Cattau, D. Taillie, S.M. Guinn, K.D. Chadwick, J.W. Atkins, R.E. Blake, M. Chapman, K. Cobourn, T. Goulden, **M.R. Helmus**, K Hondula, C Hritz, J Jensen, J.P Julian, Y Kuwayama, V. Lulla, D. O' Leary, D.R. Nelson, J.P. Ocón, S. Pau, G.E. Ponce - Campos, C. Portillo - Quintero, N.G. Pricope, R.G. Rivero, L. Schneider, M. Steele, M.G. Tulbure, M.A. Williamson, C. Wilson. 2021. Leveraging the NEON Airborne Observation Platform for socio-environmental systems research. *Ecosphere*. 12(6):e03640.
43. Li, D., R. Dinnage, L. Neil, **M.R. Helmus** & A.R. Ives. 2020. phyr: An R package for phylogenetic species - distribution modelling in ecological communities. *Methods in Ecology and Evolution*. 11(11):1455-1463
42. Tran, T.J., **M.R. Helmus**, J.E. Behm. 2020. Green infrastructure space and traits (GIST) model: Integrating green infrastructure spatial placement and plant traits to maximize multifunctionality. *Urban Forestry & Urban Greening* 49:126635.
41. Jesse, W.A.M., J. Molleman, O. Franken, M. Lammers, M.P. Berg, J.E. Behm, **M.R. Helmus** & J. Ellers. 2020. Disentangling the effects of plant species invasion and urban development on arthropod community composition. *Global Change Biology*. 26:3294–3306
40. **Helmus, M.R.** & J.E. Behm. 2020. Island Biogeography Revisited. In: *Earth Systems and Environmental Sciences*. Elsevier. Pp. 1-6.
39. **Helmus, M.R.** 2019. Book review of Phylogenetic Diversity Applications and Challenges in Biodiversity Science. *Quarterly Review of Biology*. 94(3):308-309.
38. Rapacciuolo, G., C.H. Graham, J. Marin, J.E. Behm, G.C. Costa, S.B. Hedges, **M.R. Helmus**, V.C. Radeloff, B.E. Young & T.M. Brooks. 2019. Species diversity as a surrogate for conservation of phylogenetic and functional diversity in terrestrial vertebrates across the Americas. *Nature Ecology & Evolution*. 3:53–61.
37. Behm, J.E., G. van Buurt, B.M. DiMarco, J. Ellers, C.G. Irian, K.E. Langhans, K. McGrath, T.J. Tran & **M.R. Helmus**. 2019. First records of the mourning gecko (*Lepidodactylus lugubris* Duméril and Bibron, 1836), common house gecko (*Hemidactylus frenatus* Schlegel, 1836), and Tokay gecko (*Gecko gecko* Linnaeus, 1758) on the island of Curaçao, Dutch Antilles, and remarks on their distributions in the Caribbean region. *BiolInvasion Records*. 8(1):34-44.
36. Jesse, W.A.M., J.E. Behm, **M.R. Helmus** & J. Ellers. 2018. Human land use promotes the abundance and diversity of exotic species on Caribbean islands. *Global Change Biology*. 24(10):4784-4796.
35. **Helmus, M.R.** & J.E. Behm. 2018. Anthropocene Island Biogeography. In: *Encyclopedia of the Anthropocene*. (eds. D. DellaSala, M. Goldstein). Elsevier. Pp. 37-43
34. Behm, J.E., B.R. Waite, S.T. Hsieh, **M.R. Helmus**. 2018. Benefits and limitations of three-dimensional printing technology for ecological research. *BMC Ecology*. 18(32):1-13.
33. Marin, J., G. Rapacciuolo, G.C. Costa, C.H. Graham, T.M. Brooks, B.E. Young, V.C. Radeloff, J.E. Behm, **M.R. Helmus**, S.B. Hedges. 2018. Evolutionary time drives global tetrapod diversity. *Proceedings of the Royal Society B*. 285:1-8.
32. Behm, J.E., C.F. Behm, G.M. Behm, M.C. Behm, S.P. Behm and **M.R. Helmus**. 2018. *Hemidactylus turcicus* (Mediterranean Gecko) Geographic Update. *Herpetological Review*. 49(1): 73. *Natural History Note*
31. Rapacciuolo, G., J. Marin, G.C. Costa, **M.R. Helmus**, J.E. Behm, T.M. Brooks, S.B. Hedges, V.C. Radeloff, B.E. Young, & C.H. Graham. 2017. The signature of human

- pressure history on the biogeography of body mass in tetrapods. ***Global Ecology and Biogeography***. 26:1022-1034.
30. Tucker C.M., M.W. Cadotte, S.B. Carvalho, J. Davies, S. Ferrier, S.A. Fritz, R. Grenyer, **M.R. Helmus**, L.S. Jin, A.O. Mooers, S. Pavoine, O. Purschke, D.W. Redding, D.F. Rosauer, M. Winter & F. Mazel. 2017. A guide to phylogenetic metrics for conservation, community ecology and macroecology. ***Biology Letters***. 92:698-715.
 29. **Helmus, M.R.**, J.E. Behm, *W.A.M. Jesse, J.J. Kolbe, J. Ellers & J.B. Losos. 2017. Exotics exhibit more evolutionary history than natives: A comparison of the ecology and evolution of exotic and native anole lizards. In: ***Invasion Genetics: The Baker and Stebbins Legacy***. (eds. S.C.H. Barrett, R.I. Colautti, K.M. Dlugosch, L.H. Rieseberg) John Wiley & Sons, Ltd, pp. 122-138.
 28. Behm, J.E., and **M.R. Helmus** 2016. *Microhyla butleri* (Tubercled Pygmy frog) predation. ***Herpetological Review***. 47(4): 643-644. *Natural History Note*
 27. Mazel, F., Tucker C.M., M.W. Cadotte, S.B. Carvalho, J. Davies, S.A. Fritz, R. Grenyer, **M.R. Helmus**, A.O. Mooers, S. Pavoine, O. Purschke, D.F. Rosauer & M. Winter. 2016. The forest, the trees, and the phylo-diversity jungle. *bioRxiv*.
 26. Nelson, E.J., **M.R. Helmus**, J. Cavender-Bares, S. Polasky, J.R. Lasky, A.E. Zanne, W.D. Pearse, N.J.B. Kraft, D.A. Miteva, W.F. Fagan. 2016. Commercial plant production and consumption still follow the latitudinal gradient in species diversity despite economic globalization. ***PLOS ONE***. 11(10): e0163002
 25. Yguel B., H. Jactel, I.S. Pearse, D. Moen, M. Winter, J. Hortal, **M.R. Helmus**, I. Kühn, S. Pavoine, O. Purschke, E. Weiher, C. Violle, W. Ozinga, M. Brändle, I. Bartish, A. Prinzing. 2016. The evolutionary legacy of diversification predicts ecosystem function. ***The American Naturalist***. 188:398-410
 24. Behm, J.E., and **M.R. Helmus**. 2016. *Microhyla butleri* (Tubercled Pygmy frog) predation. ***Herpetological Review***, 47(4): 643-644. (*Natural History Note*)
 23. Pearse, W.D., M.W. Cadotte, J. Cavender-Bares, A.R. Ives, C.M. Tucker, S.C. Walker & **M.R. Helmus**. 2015. pez: Phylogenetics for the Environmental Sciences. ***Bioinformatics***. 31:2888-2890
 22. Vermaat, J.E., J. Ellers & **M.R. Helmus**. 2015. The role of biodiversity in the provision of ecosystem services. In: ***Ecosystem Services: From Concept to Practice***. (eds. J.A. Bouma, P.J.H. van Beukering) Cambridge University Press. pp 25-39.
 21. **Helmus, M.R.**, D.L. Mahler & J.B. Losos. 2014. Island biogeography of the Anthropocene. ***Nature***. 513:543-546.
 20. Vasseur D.A., Fox J.W., Gonzalez A., Adrian R., Beisner B.E., **Helmus M.R.**, Johnson C., Kratina P., Kremer C., de Mazancourt C., Miller E., Nelson W.A., Paterson M., Rusak J.A., Shurin J.B. & Steiner C.F. 2014. Synchronous dynamics of zooplankton competitors prevail in temperate lake ecosystems. ***Proceedings of the Royal Society B***, 281, 20140633.
 19. Pearse, W.D., A. Purvis, J. Cavender-Bares & **M.R. Helmus**. 2014. Metrics and models of community phylogenetics. In: ***Modern Phylogenetic Comparative Methods and their Application in Evolutionary Biology - Concepts and Practice*** (ed. L.Z. Garamszegi). Springer. pp 451-464.
 18. Blanchet, S., **M.R. Helmus**, B. Sébastien & G. Gael. 2014. Biogeographic vs. local drivers of phylogenetic and taxonomic diversity patterns in stream fish communities. ***Freshwater Biology***, 59:450-462.
 17. **Helmus, M.R.**, N. Mercado Silva, & M.J. Vander Zanden. 2013. Subsidies to predators, apparent competition and the phylogenetic structure of prey communities. ***Oecologia***. 173:997-1007

16. Kua, C.S., J. Ruan, **M.R. Helmus**, D. Zhang, J. Yu & C.H. Cannon. 2012. Reference-free comparative genomics of 174 plastids. *PLOS ONE*. 7:e48995
15. **Helmus, M.R.** & Ives A.R. Phylogenetic diversity area curves. 2012. *Ecology*. 93:S31-S43.
14. Eklöf, A., **M.R. Helmus**, M. Moore & S. Allesina. 2012. Relevance of evolutionary history for food web structure. *Proceedings of the Royal Society B*. 279:1588-1596.
13. Ives, A.R. & **M.R. Helmus**. 2011. Generalized linear mixed models for phylogenetic analyses of community structure. *Ecological Monographs*. 81:511-525.
12. Scheiner, S.M., A. Chiarucci, G.A. Fox, **M.R. Helmus**, D.J. McGlenn & M.R. Willig. 2011. The underpinnings of the relationship between space, time, and species richness. *Ecological Monographs*. 81:195-213.
11. **Helmus, M.R.**, W. Keller, M.J. Paterson, N.D. Yan, C.H. Cannon & J.A. Rusak. 2010. Communities contain closely related species during ecosystem disturbance. *Ecology Letters*. 13:162-174.
10. Ives, A.R. & **M.R. Helmus**. 2010. Phylogenetic metrics of community similarity. *The American Naturalist*. 176:E128-E142.
9. Kembel, S.W., P.D. Cowan, **M.R. Helmus**, W.K. Cornwell, H. Morlon, D.D. Ackerly, S.P. Blomberg & C.O. Webb. 2010. Picante: R tools for integrating phylogenies and ecology. *Bioinformatics*. 26:1463-1464.
8. **Helmus, M.R.**, †L. Allen, O. Dominguez-Dominguez, E. Díaz Pardo, P. Gesundheit, J. Lyons & N. Mercado Silva. 2009. Threatened fishes of the world: *Allotoca goslinei* Smith and Miller, 1987 (Goodeidae). *Environmental Biology of Fishes*. 84:197-198.
7. Mercado Silva, N., **M.R. Helmus** & M.J. Vander Zanden. 2009. Food web structure of an impacted semi-desertic river in Mexico's central plateau. *River Research and Applications*. 25:1090-1108.
6. †Ahrenstorff, T.D., G.G. Sass & **M.R. Helmus**. 2009. The influence of littoral zone coarse woody habitat on the home range size, spatial distribution and feeding ecology of largemouth bass (*Micropterus salmoides*). *Hydrobiologia*. 623:223-233.
5. **Helmus, M.R.** & G.G. Sass. 2008. The rapid effects of a whole-lake reduction of coarse woody debris on fish and benthic macroinvertebrates. *Freshwater Biology*. 53:1423-1433.
4. **Helmus, M.R.**, †K. Savage, M.W. Diebel, J.T. Maxted & A.R. Ives. 2007. Separating the determinants of phylogenetic community structure. *Ecology Letters*. 10:917-925.
3. Newton, R.J., S.E. Jones, **M.R. Helmus** & K.D. McMahon. 2007. Phylogenetic ecology of the freshwater ael lineage. *Applied and Environmental Microbiology*. 73:7169-7176.
2. **Helmus, M.R.**, †T.J. Bland, C.K. Williams & A.R. Ives. 2007. Phylogenetic measures of biodiversity. *The American Naturalist*. 169:E68-E83.
1. **Helmus, M.R.** & D.E. Dussourd. 2005. Glues or poisons: which triggers vein cutting by monarch caterpillars? *Chemoecology*. 15:45-49.

COMPETITIVE RESEARCH FUNDS

\$2.7 million – Total as a professor at Temple University

\$3.7 million – Total career

bold indicates current funding.

* indicates grants written with mentees

2025-26 **(\$56,608)** California Department of Food and Agriculture: Risk Maps and Apps for the Spread of Spotted Lanternfly in California. PI

2025-26	(\$102,361)	<i>USDA-PPQ: Supporting state risk map web applications to rapidly find and respond to properties with spotted lanternfly outbreaks.</i> PI
*2025-26	(122,352)	<i>USDA-PPQ: Optimizing Survey and Management Plans for Outlying Spotted Lanternfly Populations.</i> PI with CoPI Joe Keller (postdoc)
*2024-25	(126,070)	<i>USDA-PPQ: Modeling <i>Lycorma delicatula</i> survey-method detectability and colonization probability to delineate newly found outbreaks.</i> PI with CoPI Joe Keller (postdoc)
2023-25	(75,000)	<i>Pennsylvania Department of Agriculture: Modeling strategies and mitigation to optimally control the spotted lanternfly invasion and its economic impacts.</i> PI with CoPIs Jocelyn Behm, Benjamin Seibold.
2023-25	(99,604)	<i>USDA-PPQ: Developing state risk map web applications to rapidly find and respond to properties with spotted lanternfly outbreaks.</i> PI
2022-26	(471,156)	<i>USDA-TSAB: Mapping and predicting the spread of the invasive Spotted Lanternfly (<i>Lycorma delicatula</i>) at local and landscape scales using satellite data.</i> CoPI with PI Jocelyn Behm
*2022-24	(112,852)	<i>USDA-PPQ: Mathematical modeling of spotted lanternfly population dynamics to enhance mitigation and optimize rapid response actions.</i> PI with CoPIs Jocelyn Behm, Benjamin Seibold, Stephanie Lewkiewicz (Postdoc)
*2022-24	(82,379)	<i>USDA-PPQ: Deployment of state interactive mapping applications for finding properties with new spotted lanternfly outbreaks.</i> PI written with Victoria Ramirez (Tech)
2021-23	(99,096)	<i>Pennsylvania Department of Agriculture: Furthering computational approaches to model the spotted lanternfly invasion and economic impacts.</i> PI with CoPIs Jocelyn Behm, Benjamin Seibold.
*2021-23	(39,807)	<i>Pennsylvania Department of Agriculture: Changes in wild pollinator populations with the availability of a spotted lanternfly honeydew.</i> PI written with Stefani Cannon (PhD Student)
2020-24	(426,702)	<i>USDA-Specialty Crop Research Initiative: Biology, Management and Reducing the Impact of the Spotted Lanternfly on Specialty Crops in the Eastern USA.</i> Temple PI with CoPIs Jocelyn Behm, Benjamin Seibold
2021-22	(114,644)	<i>California Department of Food and Agriculture: Risk-Based Forecasts of Spotted Lanternfly Establishment Across California.</i> Temple PI with CoPI Jocelyn Behm.
2020-21	(120,044)	<i>USDA-PPQ: Mathematical modeling of spotted lanternfly population dynamics to aide in spread prediction and control optimization.</i> PI with CoPIs Jocelyn Behm, Benjamin Seibold.
*2020-21	(76,890)	<i>USDA-PPQ: Predicting establishment and impact of spotted lanternfly on trees across the USA.</i> PI written with Nick Huron (PhD Student)
2019-20	(145,634)	<i>Pennsylvania Department of Agriculture: Integrated approach to understand spotted lanternfly population dynamics.</i> PI with CoPIs Jocelyn Behm, Benjamin Seibold.
2020	(185,070)	<i>USDA-APHIS: Linking field biology and mathematical modeling to predict spotted lanternfly spread and optimal control.</i> PI with CoPIs Jocelyn Behm, Benjamin Seibold.

2019-20	(75,000)	<i>Pennsylvania Department of Agriculture: Integrated approach to understand spotted lanternfly population dynamics.</i> PI with CoPIs Jocelyn Behm, Benjamin Seibold.
2018-19	(42,601)	<i>Pennsylvania Department of Agriculture: Spotted Lanternfly modeling and economics</i> PI with CoPIs Jocelyn Behm, Benjamin Seibold.
2014-18	(640,000)	<i>Dutch NSF: Caribbean Research Program.</i> PI with CoPIs Jocelyn Behm, Jacintha Ellers.
2012-14	(160,000)	<i>Amsterdam Global Change Institute: Postdoctoral Fellowship.</i>
2010-11	(120,000)	<i>National Science Foundation (U.S.A.): Postdoctoral Fellowship in Biological Informatics.</i>
2009	(44,000)	<i>China NSF: International Young Researchers Research Grant.</i>
2009	(15,000)	<i>Chinese Academy of Sciences: Postdoctoral Research Fellowship.</i>
2008	(5,000)	<i>Google/National Evolutionary Synthesis Center: Fellowship.</i>
2005-06	(25,000)	<i>University of California / MEX NSF: Research Grant.</i>
2001	(600)	<i>Sigma Xi: Research Grant.</i>

Intramural funds

2013	(6,500)	<i>Amsterdam Global Change Institute: Business Outreach Grant</i>
2007	(1,750)	<i>University of Wisconsin Madison Zoology: Research Grant</i>
2006	(1,500)	<i>UW Madison Zoology: Research Grant</i>
2004	(550)	<i>UW Madison Latin American, Caribbean & Iberian Studies</i>
2003	(1,400)	<i>UW Madison Department of Zoology: Research Grant</i>
2003	(950)	<i>UW Madison Latin American, Caribbean & Iberian Studies</i>
2003	(650)	<i>UW Madison Center for Limnology: Research Grant</i>
2002	(1,000)	<i>University of Central Arkansas Biology: Research Grant</i>
2001	(2,000)	<i>UCA Honors College: Tropical Herpetology Education Grant</i>
2000	(5,000)	<i>UCA Honors College: Semester at Sea Education Grant</i>

HONORS & AWARDS

- 2021 College of Science and Technology Dean's Distinguished Teaching Award
- 2020 Governor appointed voting member of the Governor's Invasive Species Council of Pennsylvania (PISC)
- 2019 Blavatnik National Award Nominee. University honor that recognized research and educational achievements in STEM.
- 2019 NEON Data Education Fellow. Selected as a fellow of the 2019 Faculty Mentoring Network by the National Ecological Observatory Network and Quantitative Undergraduate Biology Education and Synthesis
- 2009 Invited Speaker. Ecology and Evolutionary Biology Early Career Scientists Symposium. University of Michigan, Ann Arbor, MI, U.S.A.
- 2007 Outstanding Oral Presentation. Honorable Mention Murray F. Buell Award Ecological Society of America 92nd annual conference, San Jose, CA, U.S.A.
- 2006 Outstanding Oral Presentation. Pioneering Studies of Young Scientists on Chemical Pollution and Environmental Changes Symposium Center for Marine Environmental Studies, Ehime University, Japan.
- 2001 Outstanding Student Award. The highest student honor for excellence in academics and service to the University of Central Arkansas.

PRESS

- 2025 [Hearst Television](#). Hitchhiker alert! Why even in the winter you should be on the lookout
- 2025 [Entomology Today](#). Sugar rush: Spotted lanternfly honeydew attracts
- 2025 [ScienceNews](#). Squashing the spotted lanternfly problem
- 2025 [The Detroit News](#). It won't be long before this invasive bug hits Michigan cities
- 2025 [Hearst Television](#). Should you squish it? Spotted lanternfly spreads to 21 states
- 2023 [Phys.org](#). Fighting the spread of the spotted lanternfly with a new data science tool
- 2022 [The Hill](#). Could climate change mean the spotted lanternfly is here to stay?
- 2021 [Smithsonian Magazine](#). How to Easily Catch Spotted Lanternflies Using a Water Bottle?
- 2020 [Salon](#). The spotted lanternfly is invading the Northeast.
- 2020 [New York Times](#). The Dreaded Lanternfly.
- 2020 [NBC 10 Philadelphia](#). Lanternflies Return to Our Area.
- 2020 [NBC 4 New York](#). Insect Infestation Puts Brooklyn Cargo Ship Under Quarantine.
- 2019 [Temple Update](#) Spotted Lanternflies Invade Temple's Campus.
- 2019 [NBC 10 Philadelphia](#) Spotted Lanternflies Invade Philly.
- 2018 [The Temple News](#) Temple Is Researching Invasive Species.
- 2014 [New York Times](#) Overseas Trade Alters a Lizard's Stocks.
- 2014 [Quanta Magazine](#) Lizard Stowaways Revise Principle of Ecology.
- 2014 [National Geographic](#) The New Islands.

WORKSHOP PARTICIPATION

- 2025 *NEON Convergence Summit*. University of Colorado. Boulder CO. NEON.
- 2023- *Macrosystems Ecology for All Research Coordination Network*. NSF RCN. Swarthmore College. Swarthmore, PA.
- 2020-22 *TREETIME: Terrestrial Responses to Emerging Environments, Temporally Integrated from Moments to Eons*. NSF BII. Morton Arboretum. Chicago IL.
- 2020 *People, Land, Ecosystems: Leveraging NEON for Socio-Environmental Synthesis*. SESYNC Annapolis, MD.
- 2019 *NEON Science Summit*. University of Colorado. Boulder CO. Earth Lab.
- 2018 *ARGON – Augmenting research grounded on NEON*. Ecology Center. Utah State University. Will Pearse
- 2017 *Characterizing landscape genomics and reconstructing pathways to plant ecological specialization and speciation*. USGS Powell Center. Fort Collins, CO. Elisabeth Bui, David Smith, Martin Goldhaber
- 2013-17 *Macroevolution of ecosystem services of trees*. SESYNC Annapolis, MD. Jeannine Cavender-Bares & Stephen Polasky
- 2015 *Phylogenetics and biodiversity*, Society for Molecular Biology satellite meeting, Temple University, Philadelphia PA, U.S.A. Blair Hedges (organizer)
- 2013-14 *Synthesizing phylogenetic measures for ecology and conservation*. iDiv Leipzig, Germany. Marc W Cadotte & Dan F Rosauer.
- 2013 *Species communities harboring the outcome of plant diversification*. iDiv Leipzig, Germany. Andreas Prinzing.
- 2012 *Community assembly workshop*. Swiss National Science Foundation Swiss Federal Institute of Aquatic Science and Technology (EAWAG). Blake Matthews.
- 2011 *Plankton dynamics working group*. Canadian Institute for Ecology and Evolution. Jeremy Fox, Jonathan Shurin, & Beatrix Beisner.
- 2009-11 *Linking phylogenetic history, plant traits, and ecological processes at multiple scales*. NCEAS. Jeannine Cavender-Bares.

2008 *Evolutionary and ecological sorting in space*. NCEAS. Mark Urban & Mathew Leibold.

RESEARCH PRESENTATIONS

invited

- 2026 USDA, Spotted Lanternfly Research Summit (Virtual)
 2025 Washington State Department of Agriculture (Virtual)
 2025 Rutgers University, New Brunswick, NJ, U.S.A.
 2025 The Ohio State University, Wooster, OH, U.S.A.
 2025 USDA, Spotted Lanternfly Research Summit (Virtual)
 2025 Cornell University, NY IPM, Marburg, NY, U.S.A.
 2024 USDA APHIS, DESS Webinar (Virtual)
 2024 ESF SUNY, Syracuse, NY. U.S.A.
 2024 Rutgers University, Camden, NJ, U.S.A.
 2024 USDA, Spotted Lanternfly Research Summit, Harrisburg, PA, U.S.A.
 2024 Regional Invasive Species & Climate Change (RISCC) Northeast Management Network Annual Symposium (Virtual)
 2023 Cornell University, New York State Agricultural Experiment Station, Geneva, NY, U.S.A.
 2023 USDA, Spotted Lanternfly Research Summit (Virtual)
 2022 Carnegie Science Center, Pittsburgh, PA, U.S.A. (Virtual)
 2022 USDA, Spotted Lanternfly Research Summit (Virtual)
 2021 USDA, Center for Plant Health Science and Technology (Virtual)
 2019 Universidad Autónoma del Estado de Morelos, Centro de Investigación en Biotecnología, Cuernavaca, Mor., Mexico (Plenary)
 2019 USDA, Center for Plant Health Science and Technology Raleigh, NC, U.S.A.
 2017 Ecological Society of America, Organized Oral Session, Portland OR, U.S.A.
 2016 Academy of Natural Sciences, Philadelphia PA, U.S.A.
 2015 Imperial College London, Department of Life Sciences, U.K.
 2015 Villanova University, Department of Biology, Villanova PA, U.S.A.
 2015 Utah State University, Department of Biology, Logan UT, U.S.A.
 2015 Georgetown University, Department of Biology, Washington DC, U.S.A.
 2015 University of Oklahoma, Department of Biology, Norman OK, U.S.A.
 2015 Temple University, Department of Biology, Philadelphia PA, U.S.A.
 2014 Ursinus College, Biology Department, Collegeville PA, U.S.A.
 2014 Purdue University, Biology Department, West Bend IN, U.S.A.
 2012 University of Amsterdam, Theoretical Ecology, The Netherlands.
 2011 University of California, Ecology and Evolution, Davis, U.S.A.
 2011 Netherlands Institute of Ecology, Wageningen, Netherlands.
 2011 The Field Museum, Chicago, IL U.S.A.
 2010 Kellogg Biological Station, Hickory Corners, MI U.S.A.
 2009 University of Michigan, Ecology and Evolutionary Biology, Ann Arbor, U.S.A.
 2007 Instituto de Ecología, Xalapa, Ver. México.
 2007 University of California, Ecology Evolution and Marine Biology, Santa Barbara, U.S.A.
 2007 Ehime University, Center for Marine Environmental Studies, Matsuyama Japan.

submitted

- 2018 Ecological Society of America Mid-Atlantic annual conference, Newark, New Jersey.
 2012 Center for interdisciplinary research in biology, Collège de France, Paris

- 2011 Ecological Society of America annual conference, Austin, TX U.S.A.
- 2010 The American Genetics Association. Conservation genomics conference, Hilo, HI USA.
- 2009 Association for Tropical Biology & Conservation conference, Chiang Mai Thailand.
- 2007 Ecological Society of America annual conference, San Jose, CA U.S.A.
- 2006 Ecological Society of America international conference, Mérida, Yuc. México
- 2005 Ecological Society of America annual conference, Montréal, QC Canada.
- 2004 Ecological Society of America annual conference, Portland, OR U.S.A.
- 2003 Ecological Society of America annual conference, Savannah, GA U.S.A.
- 2001 Entomological Society of America annual conference, San Diego, CA U.S.A.

SUPPLEMENTAL EDUCATION

- 2020 Foundational Open Science Skills - Online course through CyVerse
- 2014 Data Science Specialization - MOOC through Johns Hopkins
- 2011 Next Generation Sequencing - Vienna Graduate School of Population Genetics
- 2009 Ecological Genomics - Centro Residenziale Universitario di Bertinoro, Italy
- 2002 Mathematics in Biology - University of Tennessee, Knoxville TN
- 2001 Tropical Herpetology - Maderas Rainforest Conservation, Costa Rica/Nicaragua
- 2000 Semester at Sea - University of Pittsburgh, 10 counties around the world

PROFESSIONAL AFFILIATIONS

current

- 2006- Member, Ecological Society of America

past

- 2009 Member, Association for Tropical Biology and Conservation
- 2001 Member, Entomological Society of America

SERVICE

Journal Editorship

- 2022- Associate editor at Frontiers in Ecology and the Environment

Governmental Councils and Panels

- 2024 *U.S. Government Accountability Office (GAO) invited expert* on their review of USDA's actions and plans to help enhance the resilience of national forests and U.S. producers to climate-related vulnerabilities due to forest and agricultural diseases and pests.
- 2024 *Invited member of the USDA spotted lanternfly national strategic plan research coordination group for coordinating U.S. strategy to manage the invasion.*
- 2017 *Governor-appointed member of Pennsylvania's Invasive Species Council* that advises the state government on invasive species policy.
- 2020 *Secretary-invited panelist for the Cultivating Innovation Panel* discussion at the PA Farm Show organized by the PA Secretary of Agriculture.
- 2023 *Division-chief invited member of the PA Department of Agriculture's Spotted Lanternfly Unified Command Board* that plans the annual response of the state to the invasive pest.

Event Organization

- 2020 *Spotted Lanternfly 101: Preparing for the invasion.* I co-organized a virtual international workshop for governmental officials, researchers, stakeholders, and land managers on spotted lanternfly academic

resources and biology. It had >450 participants from across the globe. The event was hosted by the USDA.

University Service

2022 Ecology and Evolution Job Search Committee
 2021 Developed new course: *Foundations of Ecology*
 2019 Organized meet the professors event for the Undergraduate Biology Society
 2018 Developed new course: *Global Change Science Analytics with R*
 2017- Biology Department Graduate Student Committee
 2017- Environmental Science Program Committee

PhD committee member for:

2025-	Jacob Woods	2019-20	Mark Walker
2022-	Christina Tancredi	2019-22	J.J. Smith
2024-	Morgan Will	2018	Caryn Babaian
2020-23	Ryan Gasbarro	2018-21	Diana Paola Lopez
2019-23	Molly Schools	2017-18	Carlos Gomez
2019-	Chris Carnivale	2017-21	Steven Auscavitch
2019-20	Amanda Wilson	2017-18	Mariana Bonfim

OUTREACH

2019- *App Development*: Creator and maintainer of various apps and a dashboard on spotted lanternfly forecasts, spread, risk, and resources slf.iecolab.org
 2017- *Governance*: Member of the Governor's Invasive Species Council of Pennsylvania (PISC) with purpose to develop action plans and advise on policy.
 2018 *Cross-disciplinarity*: Climate, Sustainability and the Arts working group member and presenter at the 2018 Festival at Temple University
 2013-14 *Sustainability*: worked with the Roggebot Estate in the Netherlands to devise strategies for biodiversity-friendly economic development of their landscape
 2013 *Business*: participated in a workshop to promote collaborative ties between the Dutch business community and the Amsterdam Global Change Institute
 2010-11 *International Relations*: developed and co-taught an English as a Second Language night course focused on scientific terminology to XTBG Chinese staff
 2002-08 *Science Promotion*: mentor for Ways of Knowing Biology, an organization that promoted biology to the undergraduate freshman of underrepresented groups
 2003-05 *Public Relations*: presenter at lake association meetings where I described how research at the University of Wisconsin LTER Field Station benefits their lakes
 2003-04 *Science Promotion*: volunteer for Science is Fun with Bassam Shakhashiri, an interactive program that promoted science to elementary school children
 2002 *Science Promotion*: exhibitor at the Arkansas Museum of Discovery, coordinated hands-on exhibit for children

PEER REVIEWER

Agencies

- Czech Science Foundation
- France CNRS
- Israel Science Foundation
- U.K. NERC
- U.S.A. NSF

Journals

- Agricultural and Forest Entomology
- Annals of Geography
- BioScience
- Biological Reviews
- Biological Invasions

- Diversity and Distributions
- Ecography
- Ecological Informatics
- Ecological Monographs
- Ecology
- Ecology and Evolution
- Ecology Letters
- Environmental Biology of Fishes
- Evolution
- Forests
- Frontiers in Ecology and the Environment
- Frontiers in Insect Science
- Functional Ecology
- Global Change Biology
- Global Ecology and Geography
- Hydrobiologia
- Journal of Biogeography
- Journal of Ecology
- Journal of Vegetation Science
- Methods in Ecology and Evolution
- Molecular Ecology
- Nature
- Nature Communications
- Nature Ecology and Evolution
- New Phytologist
- Oecologia
- Oikos
- Perspectives in Plant Eco., Evo. & Sys.
- Pest Management Science
- PLOS ONE
- PNAS
- Proceedings of the Royal Society B
- Scientific Advances
- Systematic Biology
- The American Naturalist
- The Quarterly Review of Biology
- Trends in Ecology and Evolution
- Urban Forestry and Urban Greening

MENTORSHIP

*Total >50 Bachelors, 6 Masters, 3 PhD, 4 Postdoc, * co-advised*

Temple University

Postdoc

2023 - Joe Keller
 2020-23 Seba De Bona
 2020-23 Jason Gleditsch*
 2020-23 Stephanie Lewkiewicz*

PhD

2020-25 Stefani Cannon
 2017-22 Nick Huron

MS

2024-26 Thomas Marshall (PSM)
 2023-25 Lee Zimmerman
 2022 Sam Owens

BS

2025- Gavin Ruddy
 2025- Lilah Shtino
 2025- Tilia Wongcini
 2024-25 Anya Frazier
 2024-25 Hannah Joseph
 2024-25 Fatma Seker*
 2024-25 Yaciere Daniel
 2024-25 Jasleen Kalsi

2024-25 Henry Wu
 2024-25 Jen Weigand
 2024-25 Neeva Kuray
 2023-25 Claire Becker
 2023-25 Kenny Lang
 2023 Violet Lange
 2023 Zubair Abaidullah
 2022-24 Sharlet Abraham
 2022 Delaney Hampton
 2022-23 Arun Agarwal
 2022 Abdullah Alkurdi
 2022 Yasmine Watkins
 2022 Emily Scott
 2022 Zbair Abaidullah
 2022 Adam Kadi
 2022 Salvin Kabir
 2022 Brittney Flinn
 2021-22 Isabella Smith
 2021-22 Hajra Sohail
 2021-22 Emma Lazar
 2021 Abir Islam
 2021 Tony Tran
 2021-22 Russell Abernethy
 2021 Meagan Mendoza
 2021-22 Sydney Reid

2021	Annabelle Horton	2007	Kristina Savage
2020	Margaret Hanley	2007	Tom Bland
2020-21	Lee Zimmerman	2006-07	Tyler Ahrenstorff
2020	Bradley Allen	2005	Lindsay Focht
2019-	Rabbika Rafiu	2004	Sara Green
2019	Adam Gasiewski	2003	Adrienne Tandberg
2019-20	Jeff Stuart		
2019	Renee Johnson*		
2019-20	Cat Olson		
2019-20	Ben Gress*		
2018-	Victoria Ramirez*		
2018	Alex Greenwood		
2018-20	Evan Zangakis		
2017-19	Alexa Gordon		
2017-20	Hannah Assour*		
2018	Ryan Thompson		
2017-18	Thomas Thompson		
2016	Nikhil Patel		
2016	Aquila Choi		
2016	Isabel Liston		
2016-17	Brenna Waite*		

BS (External)

2021	Artem Yakupov (<i>Drexel Uni</i>)
2020	Sai Media (<i>Drexel University</i>)
2018	Henry Williams (<i>Drexel Uni</i>)
2018	Briana DiMarco* (<i>Drexel Uni</i>)

VU University Amsterdam

PhD

2015-22	Wendy Jesse*
---------	--------------

MS

2013-14	Ben Hearn
2012-14	Wendy Jesse
2013	Martin Ruijter
2012-13	Rebecca Reurslag

BS

2013	Elisabeth Barmiento
------	---------------------

University of Chicago

BS

2011	Don Ho
2011	Alaina Valenzuela

University of Wisconsin

BS

2007-08	Lauren Allen
---------	--------------