

# Jordan M. Marshall

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## Experience

- 2023-present** Associate Chair, Department of Biological Sciences, Purdue University Fort Wayne
- 2022-present** Professor, Department of Biological Sciences, Purdue University Fort Wayne
- 2018-present** Graduate Program Director, Department of Biological Sciences, Purdue University Fort Wayne
- 2016-2022** Associate Professor, Department of Biology, Purdue University Fort Wayne
- 2010-2016** Assistant Professor, Department of Biology, Purdue University Fort Wayne
- 2007-2010** Post-Doc, School of Forest Resources and Environmental Science, Michigan Technological University

## Education

- PhD** Natural Resources, The University of Tennessee, 2007
- MS** Forestry, Michigan Technological University, 2004
- BS** Natural Resources and Environmental Management, Ball State University, 2002

## Publications

<sup>1</sup>undergraduate student, <sup>2</sup>graduate student

1. Aderanti, T<sup>2</sup>, **JM Marshall**, and J Thekkiniath. 2025. Effect of protease inhibitors on the intraerythrocytic development of *Babesia microti* and *Babesia duncani*, the causative agents of human babesiosis. *The Journal of Eukaryotic Microbiology* 72, e13064.
2. Danielson, JC, AR Warrix, ME Lehman, AC Lehman, and **JM Marshall**. 2024. *Pinus banksiana* regeneration patterns in a lacustrine dune system. *Forests* 15, 1138.
3. Aby-Kruger, TM<sup>1</sup>, J Stebing<sup>1</sup>, ME Beckstedt<sup>1</sup>, and **JM Marshall**. 2023. Ecological and floristic plant surveys of Little Wabash River Nature Preserve, Indiana. *The Great Lakes Botanist* 62, 122-141.
4. Kovach-Hammons, AM<sup>2</sup>, and **JM Marshall**. 2023. Predictive modeling of kudzu (*Pueraria montana*) habitat in the Great Lakes basin of the United States. *Plants* 12, 216.
5. Steiner, SM, **JM Marshall**, A Mohammadpour, and AW Thompson. 2022. Applying social science to bring resident stakeholders into pollution governance: A rural environmental justice public health case study. *Journal of Applied Social Science* 16, 44–69.
6. Paulus, KR<sup>1</sup>, and **JM Marshall**. 2022. Competitive interactions between two non-native species (*Alliaria petiolata* [M. Bieb.] Cavara & Grande and *Hesperis matronalis* L.) and a native species (*Ageratina altissima* [L.] R.M. King & H. Rob.). *Plants* 11, 374.
7. Warrix, AR<sup>2</sup>, TM Aby<sup>1</sup>, B Yankowiak, and **JM Marshall**. 2022. Plant community recovery and change following soil transfer of a forb-dominated meadow. *Ecological Restoration* 40, 10–15.

8. **Marshall, JM.** 2021. Spotted knapweed spread and plant community changes in a lacustrine dune system. *Natural Areas Journal* 41, 11–17.
9. Hale, CE<sup>2</sup>, MA Jordan, G Iriarte, K Broders, AJ Storer, VJ Nalam, and **JM Marshall.** 2021. Genome-wide SNP identification in *Fraxinus* linking genetic characteristics to tolerance of *Agilus planipennis*. *Ecology and Evolution* 11, 14775–14788.
10. Myers, AL<sup>2</sup>, and **JM Marshall.** 2021. Influence of forest fragment composition and structure on ground-dwelling arthropod communities. *The American Midland Naturalist* 186, 76–94.
11. **Marshall, JM.** 2020. Forest compositional and structural changes after a decade of emerald ash borer. *Forests* 11, 949.
12. Boyes, KN<sup>1</sup>, KG Hietala-Henschell<sup>2</sup>, AP Barton<sup>1</sup>, AJ Storer, and **JM Marshall.** 2019. Linking tree growth rate, damage repair, and susceptibility to a genus-specific pest infestation. *Journal of Forestry Research* 30, 1935-1941.
13. Harman, RR<sup>2</sup>, AR De Leon<sup>1</sup>, HM Lancaster<sup>1</sup>, and **JM Marshall.** 2019. Relative influence of spatial and structural characteristics of forest fragment on woody plant communities. *The Great Lakes Botanist* 58, 32-54.
14. Yaney-Keller, AM<sup>2</sup>, P Santridrián Tomillo, **JM Marshall**, and FV Paladino. 2019. Using unmanned aerial systems (UAS) to assay mangrove estuaries on the Pacific coast of Costa Rica. *PLoS One* 14, e0217310.
15. Granger, JJ, DS Buckley, TL Sharik, JM Zobel, WW DeBord, JP Hartman, JG Henning, TL Keyser, and **JM Marshall.** 2018. Northern red oak regeneration: 25-year results of cutting and prescribed fire in Michigan oak and pine stands. *Forest Ecology and Management* 429, 467-479.
16. Keough, S<sup>2</sup>, J Danielson<sup>1</sup>, **JM Marshall**, D Lagos-Kutz, DJ Voegtlin, R Srinivasan, and P Nachappa. 2018. Factors affecting population dynamics of thrips vectors of soybean vein necrosis virus. *Environmental Entomology* 47, 734-740.
17. Warrix, AR<sup>2</sup>, and **JM Marshall.** 2018. Callery pear (*Pyrus calleryana*) response to fire in a managed prairie ecosystem. *Invasive Plant Science and Management* 11, 27-32.
18. Warrix, AR<sup>2</sup>, AL Myers<sup>2</sup>, and **JM Marshall.** 2017. Estimating invading Callery pear (*Pyrus calleryana*) age and flowering probability in an Indiana managed prairie. *Proceedings of the Indiana Academy of Science* 126, 153-157.
19. **Marshall, JM.** 2017. Insect visitors of *Cirsium pitcheri*, a threatened and endemic dune species, in relation to annual weather variation. *The Great Lakes Entomologist* 50, 86-92.
20. Bisht, A<sup>2</sup>, KL Fracica<sup>1</sup>, AM Gutierrez<sup>2</sup>, JR Hinson<sup>2</sup>, AA Hopkins<sup>2</sup>, JM Josimovich<sup>2</sup>, MN Matthews<sup>2</sup>, AL Myers<sup>2</sup>, JE Myers<sup>1</sup>, RA Ratsch<sup>2</sup>, AJ Rudolph<sup>1</sup>, AJ Silowsky<sup>2</sup>, CE Smith<sup>2</sup>, K Tolliver<sup>2</sup>, AM Yaney-Keller<sup>2</sup>, and **JM Marshall.** 2017. Survey of Haskamp Woods, Allen County, Indiana, and floristic comparison with neighboring forest properties. *Phytoneuron* 2017-69, 1-13.

21. Adkins, KD<sup>1</sup>, JA Chang<sup>1</sup>, LA Danels<sup>1</sup>, LM DeBruhl<sup>1</sup>, MM Ellison<sup>1</sup>, JL Hammond<sup>1</sup>, DC Klepper<sup>1</sup>, TM Lehman<sup>2</sup>, SD Rupert<sup>1</sup>, M Shistova<sup>1</sup>, RR Smith<sup>1</sup>, DL Thomas<sup>1</sup>, JA Thompson<sup>1</sup>, LW Vorndran<sup>1</sup>, and **JM Marshall**. 2016. An analysis of a Hackberry-American Elm-Green Ash forest type at Moser Park, Allen County, Indiana. *Rhodora* 118, 189-205.
22. Warrix, AR<sup>1</sup>, D Moore<sup>1</sup>, and **JM Marshall**. 2015. Influence of garlic mustard presence and leaf litter composition on litter dwelling arthropod diversity. *Proceedings of the Indiana Academy of Science* 124, 16-25.
23. Clark, RE<sup>2</sup>, KN Boyes<sup>1</sup>, LE Morgan<sup>1</sup>, AJ Storer, and **JM Marshall**. 2015. Development and assessment of ash mortality models in relation to emerald ash borer infestation. *Arboriculture & Urban Forestry* 41, 270-277. <https://codeberg.org/plantecology/fsmm>
24. Habegger, RA<sup>1</sup>, and **JM Marshall**. 2015. Relationships between algal biomass and diversity with stream size and adjacent land use. *Fine Focus* 1, 21-28.
25. Arvola, KD<sup>1</sup>, PF Booth<sup>1</sup>, CC Ellinwood<sup>1</sup>, AJ Fry<sup>2</sup>, JL Furge<sup>1</sup>, KA Haehnle<sup>1</sup>, LE Hall<sup>2</sup>, MA Jablonski<sup>1</sup>, DK Jones<sup>1</sup>, JT Martin<sup>1</sup>, KM McLane<sup>2</sup>, KC Mensch<sup>1</sup>, RN Quirindongo<sup>1</sup>, MJ Ravesi<sup>2</sup>, JJ Rinard<sup>1</sup>, PR Selig<sup>1</sup>, AP Sellan<sup>1</sup>, MB Sljivar<sup>1</sup>, EA Stulik<sup>2</sup>, TR Sunday<sup>1</sup>, AN Turley<sup>1</sup>, MT Voors<sup>1</sup>, AR Warrix<sup>1</sup>, VA Wesolowski<sup>2</sup>, TC Wood<sup>2</sup>, and **JM Marshall**. 2014. Comparative analysis of urban and rural forest fragment structure and diversity in Northeastern Indiana. *The Michigan Botanist* 53, 39-59.
26. **Marshall, JM**. 2014. Noteworthy collection of *Papaver rhoeas* from Indiana. *Phytoneuron* 112, 1-4.
27. **Marshall, JM**. 2014. Influence of topography, bare sand, and soil pH on the occurrence and distribution of plant species in a lacustrine dune ecosystem. *Journal of the Torrey Botanical Society* 141, 29-38.
28. **Marshall, JM.**, MA Miller<sup>1</sup>, JP Lelito, and AJ Storer. 2013. Latitudinal variation in body size of *Agrilus planipennis* and relationship with fecundity. *Agricultural and Forest Entomology* 15, 294-300.
29. **Marshall, JM**. 2013. Occurrence of *Diabrotica undecimpunctata howardi* Barber (Coleoptera: Chrysomelidae) feeding on *Cirsium pitcheri* flowers. *The Great Lakes Entomologist* 46, 138-141.
30. **Marshall, JM**, EL Smith, R Mech, and AJ Storer. 2013. Estimates of *Agrilus planipennis* infestation rates and potential survival of ash. *American Midland Naturalist* 169:179-193.
31. **Marshall, JM**, MJ Porter, and AJ Storer. 2012. Predicting emerald ash borer, *Agrilus planipennis* (Coleoptera: Buprestidae), landing behavior on unwounded ash. *The Great Lakes Entomologist* 45, 29-39.
32. **Marshall, JM**. 2011. *Tanacetum bipinnatum* germination and competitive interaction with *Centaurea stoebe* seedlings. *The Michigan Botanist* 50, 139-145.
33. **Marshall, JM**, AJ Storer, I Fraser, and VC Mastro. 2011. A predictive model for detection of *Agrilus planipennis* larvae in girdled ash (*Fraxinus* spp.). *Journal of Applied Entomology* 135, 91-97. (Addendum. *J Appl Ent* 135, 714)

34. **Marshall, JM**, AJ Storer, I Fraser, and VC Mastro. 2010. Efficacy of trap and lure types for detection of *Agrilus planipennis* (Col., Buprestidae). *Journal of Applied Entomology* 134, 296-302.
35. **Marshall, JM**, and DS Buckley. 2009. Influence of *Microstegium vimineum* presence on insect abundance in hardwood forests. *Southeastern Naturalist* 8, 515-526.
36. **Marshall, JM**, DS Buckley, and JA Franklin. 2009. Competitive interactions between *Microstegium vimineum* and first-year seedlings of three central hardwoods. *Journal of the Torrey Botanical Society* 136, 342-349.
37. **Marshall, JM**, AJ Storer, I Fraser, JA Beachy, and VC Mastro. 2009. Effectiveness of differing trap types for the detection of emerald ash borer (Coleoptera: Buprestidae). *Environmental Entomology* 38, 1226-1234.
38. Buck, JH, and **JM Marshall**. 2008. Hitchhiking as a secondary dispersal pathway for adult emerald ash borer (*Agrilus planipennis*). *The Great Lakes Entomologist* 41, 155-157.
39. **Marshall, JM**, and DS Buckley. 2008. Effects of microsites created by selective harvesting on growth of *Microstegium vimineum* in a Central Hardwood forest. *Forest Science* 54, 534-542.
40. **Marshall, JM**, AJ Storer, and B Leutscher. 2008. Comparative analysis of plant and ground dwelling arthropod communities in lacustrine dune areas with and without *Centaurea biebersteinii* (Asteraceae). *American Midland Naturalist* 159, 261-274.
41. **Marshall, JM**, and DS Buckley. 2008. Influence of litter removal and mineral soil disturbance on the spread of an invasive grass in Central Hardwood forests. *Biological Invasions* 10, 531-538.
42. **Marshall, JM**. 2007. Parasitism of *Urophora affinis* (Diptera: Tephritidae) by *Aprostocetus* sp. (Hymenoptera: Eulophidae) in Michigan. *The Great Lakes Entomologist* 40, 166-168.
43. **Marshall, JM**, and AJ Storer. 2007. Presence of the “Threatened” *Trimerotropis huroniana* (Orthoptera: Acrididae) in relation to the occurrence of native dune plant species and the exotic *Centaurea biebersteinii*. *The Great Lakes Entomologist* 40, 17-22.
44. **Marshall, JM**, and AJ Storer. 2006. Influence of *Centaurea biebersteinii* patch size on *Urophora quadrifasciata* (Dipt. Tephritidae) in Michigan, USA. *Journal of Applied Entomology* 130, 91-95.
45. **Marshall, JM**, RA Burks, and AJ Storer. 2004. First host record for *Pteromalus cardui* (Hymenoptera: Pteromalidae) on *Urophora quadrifasciata* (Diptera: Tephritidae) in spotted knapweed (*Centaurea maculosa*, Asteraceae) in Michigan, U.S.A. *Entomological News* 115, 273-278.

## Funding

<sup>1</sup>undergraduate student, <sup>2</sup>graduate student

1. Michigan Botanical Foundation Grant, PI (2025) Plant Community Survey of Ridge and Swale Complex at Albert E. Sleeper State Park. **\$1,426<sup>2</sup>**

2. Senior Faculty Summer Grant, PI (2025) Sand Dune Plant Community Changes. **\$8,000**
3. CELT Course Gamification Cohort Grant, PI (2022) Gamification of Major's Introductory Biology – BIOL 11900. **\$2,000**
4. IndianaView Consortium, Co-PI (2021) Predictive Modeling Kudzu Habitat Availability in the Great Lakes Region. **\$1,245<sup>2</sup>**
5. Purdue Fort Wayne Post-COVID Jumpstart, PI (2021-2022) Patterns of Jack Pine Demographics, Regeneration, Vigor, and Dynamics within Pictured Rocks National Lakeshore. **\$2,025**
6. IRSC Faculty Community Engagement Program, Co-PI (2018-2019) Calibration of Moss as a Bio-Indicator of Toxic Air Contamination. **\$4,462**
7. CELT Summer Instructional Development Grant, PI (2016) Digitization of the IPFW Herbarium and Use in Field Botany and Dendrology Courses. **\$2,000**
8. IRSC Collaborative Grant Program, Co-PI (2016-2017) Diversity and Soil Microstructure Associated with Biological Soil Crusts of the Indiana Dunes State Park. **\$14,994**
9. IRSC Collaborative Grant Program, Co-PI (2016-2017) Evaluation of Genetic Markers Associated with Tolerance-Susceptibility Gradients in Ash under Exposure to Emerald Ash Borer. **\$14,684**
10. Indiana Academy of Science Senior Research Grants Program, Advisor. 2014. Analysis of Ash Leaf Nutrient Content and Emerald Ash Borer Feeding Behavior. **\$1,018<sup>1</sup>**
11. Indiana Academy of Science Senior Research Grants Program, Advisor. 2013. Diversity and Distribution of Herbaceous Plant Communities Related to Agricultural Forest Size, Shape, and Structure. **\$1,105<sup>2</sup>**
12. Tree Research and Education Endowment Fund John Z. Duling Grant, PI. 2013. Development and Assessment of Municipal Ash Tree Management Decision Models. **\$9,428**
13. Indiana Academy of Science Senior Research Grants Program, PI. 2012. Feeding Preference of Emerald Ash Borer Adults on Tolerant and Susceptible Ash. **\$944**
14. Pro Products LLC., PI, 2012. Comparison of Fertilizers on Turfgrass Above- and Below-Ground Growth. **\$7,516**
15. IPFW Summer Faculty Grant, PI, 2012. Survey of Pollinating Insect Visitors and Subsequent Seed Viability of Pitcher's Thistle in Indiana Dunes National Lakeshore. **\$8,000**
16. USDA Forest Service, Co-PI. 2011. Tolerance and Long-Term Survival of Ash Trees in the Presence of Emerald Ash Borer. \$56,000 (**\$13,695** sub-contract to Purdue Fort Wayne)
17. Indiana Academy of Science Senior Research Grants Program, PI. 2011. Ash Regeneration in Hardwood and Pine Dominated Forest Stands. **\$1,187**
18. IPFW Grant-in-Aid of Research, PI, 2011. Distribution of Lake Huron Tansy in Dune Ecosystems. **\$950**

19. IPFW Summer Faculty Grant, PI. 2011. Distribution of Lake Huron Tansy and Competitive Interactions with Spotted Knapweed in Dune Ecosystems. **\$8,000**
20. USDA APHIS PPQ CPHST New Research Initiative, Co-PI. 2010. Multistate Comparison of Emerald Ash Borer Trapping and Survey Tools. **\$75,000**
21. USDA APHIS PPQ CPHST New Research Initiative, Co-PI. 2009. Multistate Comparison of Emerald Ash Borer Trapping and Survey Tools. **\$83,000**
22. Sigma Xi Grant-in-Aid of Research Program, PI. 2005. Competition Between Seedlings of Three Native Hardwoods with Different Strategies and *Microstegium vimineum* Under Contrasting Light Regimes. **\$938**

## R Packages

1. **Marshall, J.** 2025. funredun: Calculate Community Functional Redundancy. R package version 0.4, <https://codeberg.org/plantecology/funredun>
2. **Marshall, J.** 2025. fsmm: Fraxinus Survival and Mortality Model. R package version 0.8, <https://codeberg.org/plantecology/fsmm>
3. **Marshall, J.** 2025. BIOL54210: Data for Purdue Fort Wayne Biometry. R package version 0.2025, <https://codeberg.org/plantecology/BIOL54210>

## Presentation and Posters

<sup>1</sup>undergraduate student, <sup>2</sup>graduate student

1. **Marshall, JM.** 2025. Badges and autopsy: Efforts to improve student learning. Poster presentation at the Biology Leadership Community, Myrtle Beach, SC.
2. Aby-Kruger, TM<sup>2</sup>, and **JM Marshall.** 2025. Plant community of the beach ridge and swale complex at Albert E. Sleeper State Park. Poster presentation at the 140th Annual Meeting of the Indiana Academy of Science, Indianapolis, IN.
3. Auckley, GW<sup>2</sup>, and **JM Marshall.** 2025. Dendrochronological and woody debris assessment of forest development patterns in Grand Sable Dunes, Michigan. Poster presentation at the 140th Annual Meeting of the Indiana Academy of Science, Indianapolis, IN.
4. **Marshall, JM.** 2024. Regeneration and restoration: Ecological inertia and nudges to remain a forest. Invited presentation at the Fox Island Alliance Annual Meeting, Fort Wayne, IN.
5. Stebing, J<sup>2</sup>, and **JM Marshall.** 2024. The vascular flora and plant communities of the Dorothy and Ray Garman Preserve, Allen County, Indiana. Oral presentation at the 139th Annual Meeting of the Indiana Academy of Science, Indianapolis, IN.
6. **Marshall, JM.** 2023. Forest regeneration: Ecological inertia to remain a forest. Invited presentation at Goshen College, Goshen, IN.
7. **Marshall, JM,** and X Jia. 2023. Gamification of major's introductory biology. Poster presentation at the Biology Leadership Community, Raleigh, NC.

8. **Marshall, JM.** 2022. Forest colonization and regeneration in a lacustrine dune system. Invited presentation at Eastern Illinois University, Charleston, IL.
9. Kovach-Hammons, A<sup>2</sup>, and **JM Marshall.** 2022. Predicting site suitability for kudzu (*Pueraria montana*) in the Great Lakes basin. Oral presentation at the 137th Annual Meeting of the Indiana Academy of Science, Indianapolis, IN.
10. Aby, T<sup>1</sup>, J Stebing<sup>2</sup>, and **JM Marshall.** 2021 Ecological and floristic plant surveys of Little Wabash River Nature Preserve. Oral presentation at the 135th Annual Meeting of the Indiana Academy of Science, Indianapolis, IN.
11. Aby, TM<sup>1</sup>, AR Warrix, and **JM Marshall.** 2019. Soil transfer from a mesic prairie to conserve a native seed bank and control non-native plants. Poster presentation at the Midwest-Great Lakes Society for Ecological Restoration Annual Meeting, Pella, IA.
12. Danielson, JC<sup>2</sup>, and **JM Marshall.** 2019. Community patterns and distribution of rare species in Grand Sable Dunes, Pictured Rocks National Lakeshore. Oral presentation at the 134th Annual Meeting of the Indiana Academy of Science, Indianapolis, IN.
13. **Marshall, JM.** 2018. Forest change through exposure to emerald ash borer. Oral presentation at the Natural Areas Conference, Bloomington, IN.
14. Aby, TM<sup>1</sup>, AR Warrix, and **JM Marshall.** 2018. Soil transfer from a mesic prairie to conserve a native seed bank and control non-native plants. Poster presentation at the 133rd Annual Meeting of the Indiana Academy of Science, Indianapolis, IN.
15. Smith, CE<sup>2</sup>, VJ Nalam, and **JM Marshall.** 2018. SNP identification in *Fraxinus* linking genetic characteristics to tolerance of emerald ash borer. Oral presentation at the 133rd Annual Meeting of the Indiana Academy of Science, Indianapolis, IN.
16. Myers, AL<sup>2</sup>, and **JM Marshall.** 2017. Influence of forest fragment compositional and structural heterogeneity on ground-dwelling arthropod communities. Oral presentation at the 132nd Annual Meeting of the Indiana Academy of Science, Indianapolis, IN.
17. Rudolph, AJ<sup>1</sup>, VJ Nalam, and **JM Marshall.** 2017. *Asimina triloba* patch density and reproduction in four urban forest fragments. Oral presentation at the 132nd Annual Meeting of the Indiana Academy of Science, Indianapolis, IN.
18. Myers, AL<sup>2</sup>, and **JM Marshall.** 2016. Relationships between ground-dwelling arthropod communities and forest fragment environmental and spatial characteristics. Poster presentation at the Natural Areas Conference, Davis, CA.
19. Warrix, AR<sup>2</sup>, and **JM Marshall.** 2016. Callery pear (*Pyrus calleryana*) response to fire in a managed prairie ecosystem. Oral presentation at the Midwest-Great Lakes Society for Ecological Restoration Annual Meeting, Bloomington, IN.
20. **Marshall, JM.** 2016. Characterization of an uncommon Northern Indiana forest type: Hackberry-American Elm-Green Ash. Oral presentation at the 131st Annual Meeting of the Indiana Academy of Science, Indianapolis, IN.

21. Warrix, AR<sup>2</sup>, B Yankowiak, and **JM Marshall**. 2016. Use of soil transfer with a native seed bank to control invasive plant species. Oral presentation at the 131st Annual Meeting of the Indiana Academy of Science, Indianapolis, IN.
22. Lehman, TM<sup>2</sup>, **JM Marshall**, and BA Kingsbury. 2016. Accuracy of GIS data in predicting habitat type for the Massasauga (*Sistrurus catenatus*). Poster presentation at the 76th Midwest Fish and Wildlife Conference, Grand Rapids, MI.
23. Warrix, AR<sup>2</sup>, and **JM Marshall**. 2015. Influence of fire on Callery pear (*Pyrus calleryana*) in a managed prairie. Poster presentation at the Midwest Great Lakes Society for Ecological Restoration Annual Chapter Meeting, Chicago, IL.
24. Clark, RE<sup>2</sup>, and **JM Marshall**. 2015. Fraxinus survival and mortality: Decision models for urban ash tree management. Oral presentation at the 130th Annual Meeting of the Indiana Academy of Science, Indianapolis, IN.
25. Smith, CE<sup>1</sup>, RE Clark<sup>2</sup>, and **JM Marshall**. 2015. Preferential feeding behavior of emerald ash borer relative to tolerance gradients and nutrient content of ash. Oral presentation at the 130th Annual Meeting of the Indiana Academy of Science, Indianapolis, IN.
26. Warrix, AR<sup>2</sup>, and **JM Marshall**. 2015. Influence of fire on Callery pear (*Pyrus calleryana*) in a managed prairie. Poster presentation at the 130th Annual Meeting of the Indiana Academy of Science, Indianapolis, IN.
27. Boyes, KN<sup>1</sup>, and **JM Marshall**. 2014. Dendrochronological assessment of ash growth rates relative to emerald ash borer infestation. Poster. 129th Annual Meeting of the Indiana Academy of Science, Indianapolis, IN.
28. Deleon, AR<sup>1</sup>, and **JM Marshall**. 2014. Characterization of forest structure in Northeastern Indiana. Poster. 129th Annual Meeting of the Indiana Academy of Science, Indianapolis, IN.
29. Fuelling, RR<sup>2</sup>, and **JM Marshall**. 2014. Diversity and distribution of plant communities related to forest fragment size, shape, age, and structure. Presentation. 129th Annual Meeting of the Indiana Academy of Science, Indianapolis, IN.
30. Humnicutt, RE<sup>2</sup>, and **JM Marshall**. 2013. Feeding preference of emerald ash borer adults on tolerant and susceptible ash foliage. The 128th Annual Meeting of the Indiana Academy of Science, Indianapolis, IN.
31. Soule, T, and **JM Marshall**. 2013. The use of course response systems to assess student learning in the classroom. Fort Wayne Teaching Conference, Fort Wayne, IN.
32. Hietala, KG<sup>2</sup>, **JM Marshall**, and AJ Storer. 2012. Evaluation and monitoring of ash trees that have survived long-term exposure to *Agrilus planipennis* in southeast Michigan. Presentation. The Entomological Society of America 60th Annual Meeting, Knoxville, TN.
33. **Marshall, JM**, AJ Storer, and KG Hietala<sup>2</sup>. 2012. Monitoring ash trees tolerant to long-term exposure to emerald ash borer. Poster. Forest Health Monitoring Workgroup Meeting, Tucson, AZ.
34. **Marshall, JM**. 2012. Ash regeneration in hardwood and pine dominated forest stands. Presentation. 127th Annual Meeting of the Indiana Academy of Science, West Lafayette, IN.



35. Miller, MA<sup>1</sup>, and **JM Marshall**. 2011. Influence of accumulated growing degree days and relative population density on emerald ash borer body size. Presentation. 126th Annual Meeting of the Indiana Academy of Science, Indianapolis, IN.
36. Poland, TM, DG McCullough, AJ Storer, **JM Marshall**, and I. Fraser. 2011. Evaluation of different trap types and lures for capturing emerald ash borer adults in low density populations. Presentation. 22nd USDA Interagency Research Forum on Invasive Species, Annapolis, MD.
37. **Marshall, JM**, MJ Porter, and AJ Storer. 2011. Predicting emerald ash borer landing behavior on unwounded ash trees. Poster. 22nd USDA Interagency Research Forum on Invasive Species, Annapolis, MD.
38. **Marshall, JM**, JA Beachy, I Fraser, AJ Storer, and VC Mastro. 2011. Multi-state comparison of emerald ash borer detection tools: A 5 year synthesis. Poster. 22nd USDA Interagency Research Forum on Invasive Species, Annapolis, MD.
39. **Marshall, JM**, MJ Porter, and AJ Storer. 2010. Use of unwounded ash trees for detection of emerald ash borer. Poster. 21st USDA Interagency Research Forum on Invasive Species, Annapolis, MD.
40. **Marshall, JM**, AJ Storer, R Mech, and SA Katovich. 2010. Prospects for long term ash survival in the core emerald ash borer mortality zone. Poster. 21st USDA Interagency Research Forum on Invasive Species, Annapolis, MD.
41. **Marshall, JM**, AJ Storer, I Fraser, and VC Mastro. 2010. Multi-state comparison of trapping tools at sites with low emerald ash borer density. Poster. 21st USDA Interagency Research Forum on Invasive Species, Annapolis, MD.
42. **Marshall, JM**, MJ Porter, and AJ Storer. 2009. Using unwounded host trees for detection of emerald ash borer (*Agrilus planipennis*) adults and prospects for long term tree survival. Presentation. Entomological Society of America Annual Meeting, Indianapolis, IN.
43. **Marshall, JM**, MJ Porter, and AJ Storer. 2009. Use of unwounded ash trees for the detection of emerald ash borer adults: EAB landing behavior. Presentation. Emerald Ash Borer Research and Technology Development Meeting, Pittsburgh, PA.
44. **Marshall, JM**, AJ Storer, I Fraser, and VC Mastro. 2009. Multi-state comparison of detection tools at low emerald ash borer densities. Presentation. Emerald Ash Borer Research and Technology Development Meeting, Pittsburgh, PA.
45. **Marshall, JM**, AJ Storer, I Fraser, and VC Mastro. 2009. Detection efficacy of different trap types for emerald ash borer. Poster. 20th USDA Interagency Research Forum on Invasive Species, Annapolis, MD.
46. **Marshall, JM**, I Fraser, AJ Storer, and VC Mastro. 2008. Assessment of traps for emerald ash borer (*Agrilus planipennis*) detection at low density. Presentation. Entomological Society of America Annual Meeting, Reno, NV.
47. **Marshall, JM**, AJ Storer, I Fraser, JA Beachy, and VC Mastro. 2008. Comparing emerald ash borer detection tools: Are bigger trap trees better? Poster. 19th USDA Interagency Research Forum on Invasive Species, Annapolis, MD.

48. Storer, AJ, **JM Marshall**, M Philip, DG McCullough, and NW Siegert. 2008. The history of emerald ash borer discoveries in the Upper Peninsula of Michigan from 2005-2007. Poster. 19th USDA Interagency Research Forum on Invasive Species. Annapolis, MD.
49. **Marshall, JM**, AJ Storer, I Fraser, JA Beachy, and VC Mastro. 2007. Emerald ash borer (*Agrilus planipennis*): Comparing tools for detection in three Midwestern States. Presentation. Entomological Society of America Annual Meeting, San Diego, CA.
50. **Marshall, JM**, AJ Storer, I Fraser, JA Beachy, and VC Mastro. 2007. Comparing emerald ash borer detection tools. Presentation. Emerald Ash Borer Research and Technology Development Meeting, Pittsburgh, PA.
51. **Marshall, JM**, I Fraser, AJ Storer, and VC Mastro. 2007. A comparison of detection tools for emerald ash borer in three Midwestern states. Presentation. North Central Forest Pest Workshop, Shoreview, MN.
52. Storer, AJ, I Fraser, TL Eberhart, **JM Marshall**, LM Nagel, JA Metzger, and VC Mastro. 2007. Components of a management program for the invasive emerald ash borer, *Agrilus planipennis* (Coleoptera: Buprestidae), in North America. Presentation IUFRO Forest Health Meeting, Vienna, Austria.
53. Buckley, DS, and **JM Marshall**. 2005. Influence of silvicultural practices on understory disturbance regimes, microsites, and plants. Presentation. Society of American Foresters National Convention, Fort Worth, TX.
54. **Marshall, JM**, AJ Storer, and B Leutscher. 2005. Effects of *Centaurea biebersteinii* on plant and ground dwelling arthropod communities within a lacustrine dune system. Presentation. 4th Western Great Lakes Research Conference, Marquette, MI.
55. **Marshall, JM**, AJ Storer, and RA Burks. 2003. Influences of *Centaurea maculosa* patch size and parasitoid activity on the biological control agent *Urophora quadrifasciata*. Poster. Entomological Society of America Annual Meeting, Cincinnati, OH.
56. Beachy, BL, JN Rosemier, EE Graham, **JM Marshall**, and AJ Storer. 2003. Impacts of an exotic disease complex on native forest arthropods. Presentation. 17th Annual Meeting of the Society for Conservation Biology, Duluth, MN.

## Directed Student Research

### *Undergraduate*

1. Nick Coomer, Summer 2024-Spring 2025 - Arthropod communities between nature preserves.
2. Sophie Steele, Summer 2022 - Patterns in structure in a second-growth hardwood forest.
3. Makaylee Bahls, Summer 2021 – Dame’s rocket floral color patterns between and within populations.
4. Sophie Steele, Summer 2021 – Soil microbial assays associated with native (northern spicebush) and non-native (Amur honeysuckle) shrub rhizospheres.
5. Madison Beckstedt, Spring 2021 – Comparison of germination and success rates for seeds of native and non-native shrubs.

6. McKalyn Conn, Spring-Summer 2021 – Dendrochronological assessment of Garman, ACRES Land Trust.
7. Kaitlyn Cooper, Summer 2020 – Tree regeneration along forest ecotone gradients.
8. Kaushara Jahan, Spring 2020 – Northern red oak leaf chlorophyll content in varying acorn sizes.
9. Kassandra Paulus, Spring 2020 – Competitive interactions between native and non-native plant species.
10. Tessa Aby, Summer 2019 – Forest plant community at Little Wabash River Nature Preserve.
11. Madison Beckstedt, Summer 2019 – Forest composition at Little Wabash River Nature Preserve.
12. Shilynn Whalen, Fall 2018 – Dendrochronological patterns in Haskamp Woods, New Haven, Indiana.
13. Alexander Barton, Summer 2018 – Dendrochronological assessment of ash growth rates.
14. Tessa Aby, Summer 2017 – Soil transfer from a mesic prairie to conserve a native seed bank and control non-native plants
15. Aaron Rudolph, Summer 2015-Spring 2017 – Distribution, habitat characteristics, and genetic variability of pawpaw in forest fragments.
16. Asif Mortuza, Spring 2016 – Age and growth rate of Callery pear in a managed prairie.
17. Jennifer Troy, Spring-Summer 2015 – Northern red oak growth response in drought and shade stress.
18. Hannah Lancaster, Spring 2015 – Understory and midstory plant distributions relative to seed mass and dispersal mechanisms.
19. Farzana Tarannum, Spring 2015 – Light response curves and biomass accumulation of dame's rocket.
20. Lori Morgan, Summer-Fall 2014 – Light response curves for tree seedlings in southern Great Lakes forests.
21. Cecelia Smith, Summer 2014 – Analysis of ash leaf nutrient content and emerald ash borer feeding behavior.
22. Alexander Silowsky, Summer 2014 – Relationships between weevil diversity, plant strata structure, and soil types within a hardwood forest.
23. Glenneicer Ffrench, Spring 2014 – Quantification and importance of coarse woody debris in a hardwood forest.
24. Kayla Boyes, Summer 2013 – Dendrochronological assessment of ash growth rates relative to emerald ash borer attack.

25. Alicia De Leon, Summer 2013 – Characterization of forest structure in Northeast Indiana woodlots.
26. Rachel Habegger, Summer 2013 – Algal diversity and distribution related to adjacent land use.
27. Shreya Patel, Spring 2013 – Light response and saturation curves for native and exotic shrub species.
28. Shelby Gruss, Spring 2013 – Drought response of the invasive plant garlic mustard. Daniel Moore and Adam Warrix, Summer 2012 – Garlic mustard invasion patterns in a hardwood forest.
29. Rachel Habegger, Summer 2012 – Comparison of fertilizers on turfgrass above- and below-ground growth.
30. Michael Zijlstra, Fall 2011 – Seed germination ecology and seedling establishment for Lake Huron tansy, meadow hawkweed, and spotted knapweed.
31. Rick Thomas, Fall 2011 – Live ash survey in Fort Wayne managed parks.
32. Rachel Hunnicutt, Summer 2011 – Effects of forest understory structure on diversity and distribution of ground dwelling beetles.
33. Celeste Grubaugh, Spring 2011 – Drought response of the invasive plant garlic mustard.
34. Molly A. Miller, Spring 2011 – Influence of accumulated growing degree days and relative population density on emerald ash borer body size.

### ***Graduate***

1. Tessa Aby-Kruger, 2024-present - Plant Community Patterns along a Lake Shore Ridge-Swale Complex
2. Grace Auckley, 2024-present - Dendrochronological and Woody Debris Assessment of Forest Development Patterns along a Sand Dune Chronosequence
3. Jill Wilson, 2023-2025 - Squalls and Saws: The Influence of Derecho and Management Disturbances on Forest Arthropods
4. Joanna Stebing, 2021-2024 - Vascular Flora and Plant Communities of the Dorothy and Ray Garman Preserve, Allen County, Indiana
5. Patrick Mayo, 2022-2023 - Beaver Activity and Flora Survey in Chain O'Lakes State Park, Noble County, Indiana
6. Madison Beckstedt, 2021-2023 - Forest Response Following the Loss of Ash
7. Ashley Kovach-Hammons, 2020-2022 – Predicting Site Suitability for Kudzu (*Pueraria montana*) in the Great Lakes Basin and Surrounding Region
8. Jonathan Danielson, 2018-2019 – Stable Regimes in an Unstable System: Floral Community and Diversity in the Grand Sable Dunes

9. Cecelia Smith, 2016-2018 – Five Trees Undercover: Genome-wide SNP Identification in *Fraxinus* Linking Genetic Characteristics to Tolerance of *Agrilus planipennis*
10. Andrea Myers, 2015-2017 – Influence of Forest Fragment Compositional and Structural Heterogeneity on Ground-Dwelling Arthropod Communities
11. Adam Warrix, 2014-2016 – Management of Old Field Prairie Ecosystems: Soil Transfer and Exotic Species Invasion
12. Rachel Fuelling, 2012-2014 – Diversity and Distribution of Plant Communities Related to Forest Fragment Size, Shape, Age, and Structure
13. Rachel Hunnicutt, 2011-2013 – Emerald Ash Borer Adult Feeding Behavior and Ash Tree Management Decision Modeling: Relationships between Pest and Host Tolerance Gradients

## Teaching

<b>Purdue University Fort Wayne</b>	Biology of Plants (BIOL 10800), Principles of Structure and Function (BIOL 11900), Intermediate Ecology (BIOL 21700), Silvics of North America (BIOL 34010), Senior Seminar (BIOL 49100), Field Botany (BIOL 50100), Invasion Biology (BIOL 54110), Biometry (BIOL 54210), Introduction to Environmental Conservation (FNR 10300), Dendrology (FNR 22500), Fundamentals of Horticulture (HORT 10100)
<b>Michigan Technological University</b>	Forest and Landscape Ecology (FW 3020), Insect Ecology (FW 3800)
<b>The University of Tennessee</b>	Dendrology and Silvics of North American Trees (FWF 212), Forest Ecology (FOR 215)

## Community Outreach

<b>Stueben County IMN Program</b>	Indiana Trees. Presentation. Angola, IN. <b>2022-2024</b>
<b>Faculty Speaker Series, CollegeTV</b>	Forest change over time: using current stages to interpret the past and the future. Presentation. Fort Wayne, IN. <b>2018</b>
<b>Noble County IMN Program</b>	Ecology and natural history of Indiana forests. Presentation. Rome City, IN. <b>2014, 2016, 2018, 2019</b>
<b>Allen County IMN Program</b>	Ecology and natural history of Indiana forests. Presentation. Fort Wayne, IN. <b>2013-2024</b>
<b>Wells County Public Library</b>	Pushing the Limits – STEM programming for adults in small and rural libraries. Bluffton, IN. <b>2014</b> Dig into Plants. Bluffton, IN. <b>2013</b>

## Service

<b>Biological Sciences</b>	Curriculum Committee - member <b>2023-present</b>
	Assessment Committee - member <b>2013-2023</b> , chair <b>2023-present</b>
	Safety Committee - member <b>2017-present</b>
	Graduate Committee - member <b>2011-2014</b> , chair <b>2015-present</b> , thesis format advisor <b>2017-present</b>
	Welfare Committee - member <b>2011-present</b>
<b>College of Sciences</b>	Educational Policy Committee - member <b>2021-present</b> , chair <b>2022-2024</b>
<b>University</b>	CELT Advisory Board - member <b>2023-present</b>
	Honors Program Council - member <b>2022-present</b>
	Campus Tree Committee - faculty representative <b>2019-present</b>
	Curriculum Review Subcommittee - member <b>2023-2024</b>
	University Advancement Advisory Subcommittee - member <b>2021-2024</b>
	Academic Computing and Information Technology Advisory Subcommittee - member <b>2016-2018</b> , chair <b>2019</b>
	Budgetary Affairs Subcommittee - member <b>2016-2018</b> , chair <b>2019</b>
<b>Professional</b>	CELT Writing and Project Development Institute - mentor <b>2017</b>
	Symposium on Teaching and Learning - faculty facilitator <b>2015</b>
	ACRES Land Trust Board of Directors - member, <b>2024-present</b>
	ACRES Land Trust Stewardship and Protection Committee - member, <b>2023-present</b>
	Indiana Plant Conservation Alliance - partner, <b>2021-present</b>
	Indiana Academy of Science Botany Section - vice-chair, <b>2017-2018</b> ; chair, <b>2018-2019</b>

## Additional Education

<b>Urban Agriculture Certificate</b>	Purdue University Extension, Allen County, 2020
<b>Bayesian Statistics: From Concept to Data Analysis</b>	Coursera.org, University of California, Santa Cruz, 2018
<b>Computing for Data Analysis</b>	Coursera.org, Johns Hopkins University, 2013
<b>Computational Science for Natural Resource Managers</b>	The University of Tennessee, The Institute for Environmental Modeling, 2007
<b>The Wildfire Training Program (I-100, S-130, S-190)</b>	Michigan Technological University and Ottawa National Forest, National Wildfire Coordinating Group, 2003

## Peer Reviewer

**Associate Editor**    *Environmental Entomology*, Topic: Pest Management, 2020-present

**Ad hoc**                      Repeat ad-hoc reviewer for more than 30 ecology, entomology, forestry, and plant science journals

## Membership

**Indiana Academy of Science**    2010-present, 2018 Fellow

**Michigan Botanical Society**    2010-present