Victoria M. Pocius
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Education

Ph.D. Iowa State University (ISU), Ames, IA, USA
Ecology and Evolutionary Biology
Major Advisors: Dr. Diane Debinski and Dr. John Pleasants
Dissertation: Monarch butterfly preference and use of nine Midwestern milkweed species
Degree Expected: May 2018

M.A. The University of Kansas (KU), Lawrence, KS (2014)
Ecology and Evolutionary Biology.
Major Advisor: Dr. Orley Taylor
Thesis: A Re-examination of Reproductive Arrest in the Monarch Butterfly, *Danaus plexippus.*

B.S. Lafayette College (LC), Easton, PA, USA (2011)
Major: Biology
Minor: Environmental Science
Honors Thesis: Exposure to endocrine disrupting pesticides and impacts on parasitic infection in the monarch butterfly, *Danaus plexippus*
Advisors: Dr. Nancy Waters, Dr. Art Kney, and Mr. John Drummond

Employment Experience

- **January 2016-present:**
  Graduate Research Assistant with Iowa Monarch Conservation Consortium, ISU
  - Provided research support to the Iowa Monarch Conservation Consortium as a member of the Iowa Monarch Working Group based at Iowa State University.
  - Conducted field research, as a member of a larger field team, regarding monarch habitat establishment at ~1 acre sites across Iowa throughout the summer and
  - Managed the undergraduate technicians (5-7) who act as members of the field team.
  - Collected data concerning monarch use of nine native milkweed species at four field plots in central Iowa from March to October each year.
  - Collaborated with farm managers across the state to collect monarch oviposition data on nine milkweed species.
  - Analyzed and published data while conducting public outreach regarding monarch conservation efforts in Iowa.

  Accomplishments
  - Three years of milkweed plot data collected; publication in preparation
  - Publications regarding larval survival and feeding published in fall 2017
  - Two oviposition studies completed in the laboratory; manuscript published January 2018
  - Mentored two undergraduate students in the Science with Practice Program at Iowa State
    - Nancy Shryock presented at NCUR 2017 and published in the NCUR Proceedings
    - Logan Crees presented at Iowa State in spring 2017 and spring 2018
  - Mentored four undergraduate students in field and laboratory methods related to monarch research
    - Ali Ford Summer 2015
    - Callie Erwin, Honors Student, Spring 2016

- Cory Haggard, Jackie Appelhans Summer 2016

❖ **August 2015-December 2015:**
Graduate Teaching Assistant EEOB BIOL 312L: Ecology Laboratory, ISU

- Provided instruction to 2 laboratory sections (40 students) of Biology 312, a writing intensive course covering the basics of Ecology.
- Guided students through three field labs in different environments including prairies and streams.
- Taught students the basics of island biogeography theory and how populations may change over time.
- Provided weekly feedback on student lab reports both on subject matter but also scientific writing style.

❖ **August 2014-July 2015:**
Graduate Research Assistant: EEB Program Fellowship, ISU

- Began my research program at Iowa State University.
- Outlined my dissertation project involving monarch preference and use of several native milkweed species.
- Wrote several small grants detailed below and planned out my first field season.
- Joined the newly established Monarch Conservation Consortium as a member of the Monarch Working Group.

Accomplishments

- Applied for a small grant from Prairie Biotics, Inc.
- Applied for a small grant from the Iowa Native Plant Society
- Applied for a travel grant for field work from CGER at the University of Iowa
- Provided part of the text and references for a Consortium NRCS grant proposal
- Mentored Allison Volk, Honors Student, in occurrence data retrieval for species distribution modeling

❖ **June 2014-August 2014:**
Graduate Research Assistant: Entomology Fellow, KU

Completed my Masters Thesis at the University of Kansas; presented my research in an Entomology seminar.

❖ **August 2013-May 2014:**
Graduate Teaching Assistant: BIOL 152L, Introductory Organismal Biology Laboratory, KU

Guided students through 14 laboratories regarding an introduction to the principles of organismal biology. Activities included vertebrate dissections from echinoderms to mammals, building a population simulation using data generated from a game based on island biogeography theory, identification of plant structures, and observing the dominance behavior of crayfish. Administered lab quizzes weekly and supervised the use, care, and cleaning of all laboratory equipment.

❖ **June 2012-August 2013:**
Graduate Research Assistant: Milkweed Coordinator, Monarch Watch, KU

- Tested different artificial diets for raising fritillary species in the Monarch Watch Laboratory
- Coordinated the collection of milkweed seeds with Wild Ones Chapters and
- Shipped Monarch Watch educational materials to master gardeners, master naturalists, and conservation organizations across the United States.
- Managed all milkweed plant orders and coordinated milkweed plant numbers and plant shipping with Applied Ecological Services, about 10,000 plants and 300 orders per season.

- Supervised set up and managed undergraduate volunteers (10-20) at Monarch Watch annual events such as the fall and spring open houses and monarch tagging demonstrations.

❖ **January-June 2012: Laboratory Technician:**
Monarch lipid analysis, Sweet Briar College

- Prepared monarch butterflies for lipid extraction (included weighing, drying, grinding, and exposing each butterfly to a solvent to extract lipids from each sample).
- Collected data from over 250 butterflies, and managed all data entry.
- Completed preliminary data exploration with Dr. Lincoln Brower to compare samples from a normal weather year to the drought year of 2011.

❖ **September 2011-November 2011:**
Seasonal Field Biologist, New Jersey Audubon Society

- Counted migrating monarch butterflies in Cape May Point, NJ as part of seasonal surveys.
- Caught wild butterflies for daily public tagging demonstrations.
- Conducted daily outreach programs about monarch butterfly migration and tagging.
- Reared caterpillars for the Cape May Bird Observatory display case.
- Updated the MMP blog with field notes and pictures throughout the tagging season.

❖ **September 2010-May 2011:**
Laboratory Assistant, LC

- Set up and tore down weekly laboratory activities in both ecology and advanced aquatic ecology.
- Cleaned, packed, and organized all laboratory equipment.
- Assisted with running labs that required student supervision such as simulating an oil spill in ecology lab with 3-4 lab sections weekly (20 students per section).

❖ **May-August 2010:**
Mellon Scholar, LC

- Planted and maintained a garden of *Asclepias* sp. in the Lafayette College Organic Garden.
- Reared monarch caterpillars on sterilized milkweed leaves.
- Conducted experiments exposing monarch larvae to atrazine; entered and analyzed all data.

  Accomplishments
  - Presented this research at NCUR 2011
  - Published my results in the NCUR Proceedings

❖ **May-August 2009:**
Conservation Educator, Lehigh Valley Zoo

- Conducted outreach programs for the Lehigh valley zoo including presentations at nursing homes, baseball games, camps, and schools.
- Conducted and supervised zoo camps, birthday parties, and zoo tours.
- Interacted with patrons to explain the zoo's conservation mission and strategy.
- Cared for the education animals including birds of prey, reptiles, and rodents.
- Trained in handling animals in the education department as well as patron safety, first aid and cpr/aed.

Peer Reviewed Publications

Pocius, V.M., D.M. Debinski, J.M. Pleasants, K.G. Bidne, R.L. Hellmich, S.P. Bradbury, and S.L. Blodgett. 2018. Common garden studies suggest monarch butterflies show oviposition preferences among nine milkweed species native to Iowa. (In prep).

Pocius, V.M., N.J. Lyon, and D.M. Debinski. 2018. The implications of milkweed species responses to climate change for monarch butterflies. PLoS One (Under Review).

Pocius, V.M., D.M. Debinski, J.M. Pleasants, K.G. Bidne, and R.L. Hellmich. 2018. Monarch butterflies do not place all of their eggs in one basket: oviposition on nine Midwestern milkweed species. Ecosphere. 9: e02064. 10.1002/ecs2.2064

Pocius, V.M., D. M. Debinski, J.M. Pleasants, K.G. Bidne, R.L. Hellmich, and L.P. Brower. 2017. Milkweed Matters: Monarch butterfly (Lepidoptera: Nymphalidae) survival and development on nine Midwestern milkweed species. The Journal of Environmental Entomology. doi.org/10.1093/ee/nvx137

Pocius, V.M., D.M. Debinski, K.G. Bidne, R.L. Hellmich, and F.K. Hunter. 2017. Performance of early instar monarch butterflies (Danaus plexippus L.) on nine milkweed species native to Iowa. The Journal of the Lepidopterist's Society, 71:153-161.

A. L. McCombs; A. J. Albertsen; M. M. Cox; E. E. Ernst; H. J. Haley; D. A. Loney; M. M. Mackert; F. Piatscheck; **V.M. Pocius**; D. S. Stein; E. A. Altrichter; A. J. Almond; J. M. Dale; J. N. Dupuie Jr.; P. G. McGovern; B. A. Nixon; J. E. Swanson; R. W. Klaver. **2016**. Large Carnivore Conservation: Integrating Science and Policy in the North American West Journal of Mammalogy 2016;doi: 10.1093/jmammal/gyw019

Pocius, V., B. Hilbig. **2011**. Exposure To Endocrine Disrupting Pesticides And Impacts On Parasitic Infection In The Monarch Butterfly, Danaus plexippus. The Proceedings of the National Conference for Undergraduate Research.

Hilbig, B., **V. Pocius**, J. Marchese, N.M. Waters, and J. Drummond. **2010**. Effects of endocrine disrupting contaminants on the monarch butterfly, Danaus plexippus. The Proceedings of the National Conference for Undergraduate Research.

Reports and Book Chapters

Pocius, V.M., D.M. Debinski, and R.L. Hellmich, **2017.** Monarch Oviposition and Larval Survival on Nine Native Milkweed Species During the 2016 Breeding Season. *Farm Progress Reports*, *2016*(1), p.73.

Hellmich, R.L., Debinski, D.M. and **Pocius, V.M.**, **2016.** Monarch Oviposition and Larval Survival on Nine Native Milkweed Species. *Farm Progress Reports*, *2015*(1), p.165.

Brower, L. P., L. S. Fink, R. J. Kiphart, **V. Pocius**, R. Zubieta, and M. I. Ramírez. **2015**. The effect of the 2010–2011 drought on the lipid content of monarch butterflies (*Danaus plexippus* L., Danainae) migrating through Texas to their overwintering sites in Mexico, pp. 117–129. In K. S. Oberhauser, K. R. Nail, and S. M. Altizer, (eds.), Monarchs in a changing world: biology and conservation of an iconic butterfly Cornell University Press, Ithaca, New York.

Grants Funded

- Publication Subvention Grant, Iowa State University Libraries, January 2018, $750
- Student Travel Award, Iowa State University EEOB, September 2016 & August 2017, $100
- Student Travel Award, Iowa State University Graduate and Professional Student Senate, August 2017, $200
- Student Travel Award, Iowa State University Graduate and Professional Student Senate, September 2016, $180
- Student Field Travel Award, Center for Global and Regional Environmental Research, June 2015, $1635

- Student Research Award, Iowa Native Plant Society, May 2015, $500
- Student Research Grant, Prairie Biotics, Inc. May 2015, $1000
- Entomology Scholarship, University of Kansas, May 2014, $4600
- Ida Hyde Travel Scholarship, University of Kansas, July 2013, $2000

Research and Outreach Presentations

Invited Research Presentations

Pocius, V.M. "Monarchs do not place all of their eggs in one basket: oviposition studies on nine Midwestern milkweed species" EEB Recruitment Symposium, Iowa State University, Ames, IA, USA February 2018.

Pocius, V.M. "Milkweed Matters: a summary of monarch preference studies" Lafayette College Seminar Series, Easton, PA, USA. September 2017.

Pocius, V.M., Bidne, K.G., Hellmich, R., Debinski, D.M, and Pleasants, J.M. "Which native milkweeds are acceptable host plants for larval monarch butterflies (Danaus plexippus) within the Midwestern U.S.?" Reiman Gardens, Day of Insects. Ames, IA, USA. March 2017.

Pocius, V.M., Debinski, D.M., Hellmich, R., Blodgett, S., and Bradbury S.P. "Milkweed and Monarchs in the Agricultural Landscape: An Examination of Milkweed Persistence and Monarch Use." Board of The Center for Global and Regional Environmental Research, University of Iowa. Iowa City, IA, USA. May 2016.

Research Presentations

Pocius, V.M., Debinski, D.M, Hellmich, R., Bidne, K.G., Pleasants, J.M., Blodgett, S., Bradbury, S., and Hartzler, R. "Milkweed matters: Survival and Maturation of Monarch Butterfly (*Danaus plexippus*) Larvae on Nine *Asclepias* Species." Ecological Society of America. Portland, OR, USA August 2017.

Pocius, V.M., Bidne, K.G., Hellmich, R., Debinski, D.M, and Pleasants, J.M. "All Milkweeds Are Not Created Equal: A summary of oviposition preference tests for monarch butterflies (*Danaus plexippus*)." Iowa Chapter of the Wildlife Society. Ames, IA, USA. February 2017.

Shryock, N., **Pocius, V.M.,** and Debinski, D.M. "Does Marking With DayGlo ECO Aurora Pink Pigment Powder Affect the Development or Survival of Monarch Caterpillars?" Poster Presentation. Iowa State EEB Research Symposium. Ames, IA USA. February 2017.

J. M. Pleasants, **Pocius, V.M.,** Blader, T. and Fisher, K.E. "ISU Monarch Workgroup Projects: Progress and Prospects." Iowa State Entomology Departmental Seminar. Iowa State University, Ames IA, USA. February 2017.

Shryock, N., **Pocius, V.M.,** and Debinski, D.M. "Does Marking With DayGlo ECO Aurora Pink Pigment Powder Affect the Development or Survival of Monarch Caterpillars?" Poster Presentation. ISU Agricultural Endowment Board, Ames, IA. Ames, IA, USA. December 2016.

Shryock, N., **Pocius, V.M.,** and Debinski, D.M. "Does Marking With DayGlo ECO Aurora Pink Pigment Powder Affect the Development or Survival of Monarch Caterpillars?" Poster Presentation. Science with Practice, Ames, IA. Ames, IA USA. December 2016.

Pocius, V.M., Bidne, K.G., Hellmich, R., Debinski, D.M, and Pleasants, J.M. "All Milkweeds Are Not Created Equal: A summary of oviposition preference tests for monarch butterflies (*Danaus plexippus*)". International Congress of Entomology. Orlando, Florida, USA. September 2016.

Pocius, V.M., Bidne, K.G., and Debinski D.M. "Which native milkweeds are acceptable host plants for larval monarch butterflies (*Danaus plexippus*) within the Midwestern U.S.?" Iowa Chapter of the Wildlife Society. Ames, IA, USA. February 2016.

Pocius, V.M., Bidne, K.G., and Debinski, D.M. "Which native milkweeds are acceptable host plants for larval monarch butterflies (*Danaus plexippus*) within the Midwestern U.S.?" Iowa State EEB Research Symposium. Ames, IA USA. January 2016.

Pocius, V.M., Bidne, K.G., and Debinski, D.M. "Which native milkweeds are acceptable host plants for larval monarch butterflies (*Danaus plexippus*) within the Midwestern U.S.?" Entomological Society of America. Poster Presentation. Minneapolis, MN, USA. November 2015.

Pocius, V.M., and Taylor, O.R. "A Re-examination of Reproductive Arrest in the Monarch Butterfly, *Danaus plexippus.*" University of Kansas Entomology. Lawrence, KS, USA. August 2015.

Pocius, V.M. "Exposure To Endocrine Disrupting Pesticides And Impacts On Parasitic Infection In The Monarch Butterfly, Danaus plexippus" Lafayette College Senior Research Symposium. Easton, PA, USA. May 2011.

Pocius, V.M., Hilbig, B., and Waters N.M. "Exposure To Endocrine Disrupting Pesticides And Impacts On Parasitic Infection In The Monarch Butterfly, Danaus plexippus." The National Conference on Undergraduate Research. Poster Presentation. Ithaca, NY, USA. April 2011.

Helbig, B, **Pocius**, **V.M.,** and Waters, N.M. "Effects of endocrine disrupting contaminants on the monarch butterfly, Danaus plexippus". The Lehigh Valley Ecology and Evolution Symposium. Poster. Bethlehem, PA, USA. April 2010.

Outreach and Extension Presentations

Pocius, V.M. Monarch Migration and Research Experience. Monarchs on the Move National 4-H Training, Ames, IA, USA February 2018.
Pocius, V.M. Monarch Life Cycle and Conservation. Pollinator Fest. Reiman Gardens, Ames, IA, USA. June 2017
Pocius, V.M. Monarch Tagging Demonstration. Reiman Gardens, Ames, IA, USA. September 2016.
Pocius, V.M. Monarch Life Cycle and Conservation. Pollinator Fest. Reiman Gardens, Ames, IA, USA. June 2016
Pocius, V.M. Monarch Tagging Demonstration. Reiman Gardens, Ames, IA, USA. September 2015.
Pocius, V.M. Monarch butterfly lifecycle, migration, and butterfly gardening family workshop. Des Moines Botanical Garden. Des Moines, IA, USA. June 2015.
Pocius, V.M. Monarch Life Cycle and Conservation. Pollinator Fest. Reiman Gardens, Ames, IA, USA. June 2015
Pocius, V.M. and Grimlund, K. Planting for native bees and butterflies. Des Moines Botanical Garden. Des Moines, IA, USA. January 2015.

Departmental Service

EEOB Graduate Peer Mentor, Iowa State 2016-2018
EEOB Graduate Student Organization (GSO) President, Iowa State 2015-2017
Graduate Research in Ecology and Evolutionary Biology Organization Social Chair, Iowa State 2015-2016
EEOB GSO Treasurer, Iowa State 2014
EEB GSO Fundraising Chair, University of Kansas 2013

Teaching Experience

BIOL 312L: Ecology, ISU
Student survey participation; 60%
Overall rating, 1=poor; 5=excellent

Mean Score	Standard Dev.	Median Score	N
4.38	1.02	5	21

Student Reviews:

- Tori was very good at getting us through the labs without going over time. She had an effective teaching style that helped me understand the information needed for each lab.
- Tori was always upbeat and ready to help us in lab. She was prepared and made lab fun!

BIO 250L: Principles of Organismal Biology, KU
Overall rating, 1=poor; 5=excellent

Survey Type	Mean Score	Standard Dev.	Median Score	N
Student	4.5	1.04	5	60
Supervisor	4.5	n/a	n/a	n/a

Student Reviews:

- She explained things quickly and efficiently yet still made sure we understood.
- She was very approachable and helpful in lab
- She was relatable and excited to teach us.

Supervisor Reviews:

- I came into lab when Tori was working with students on the Vertebrate Anatomy lab. They were hard at work and engaged in dissecting various animals. Tori was busy going from group to group, helping out and answering questions. The lab had a feel of being at ease that is a positive reflection on Tori and her style of teaching. Also, students seemed to find her approachable and friendly.
- Tori is a “nice guy” and that translates into putting students at ease and letting them relax and have fun in lab. This type of at ease lab allows students to ask questions and be more creative in their learning. In addition, Tori if very approachable and thoroughly answers questions asked by students. Finally, she is very responsible in her duties. It has been a pleasure working with her.

Professional Society Membership

Ecological Society of America
Lepidopterists’ Society
Entomological Society of America
Sigma Xi