

Kelsey E. Fisher

Iowa State University, Department of Entomology • 2299 Pammel Dr • 339 Science II • Ames, IA 50011
609-221-5129 • kefisher@iastate.edu

EDUCATION

Iowa State University

Ph.D. in Entomology, GIS Certification
Cumulative GPA: 3.84

Ames, IA
December 2020 (anticipated)

University of Delaware

Master of Science in Entomology
Cumulative GPA: 3.72

Newark, DE
December 2015

Widener University

Bachelor of Science in Biology, Honors in Biology
Cumulative GPA: 3.322

Chester, PA
May 2013

PROFESSIONAL EXPERIENCE

RESEARCH EXPERIENCE

Iowa State University; Ph.D. Dissertation Research

“Movement ecology of the monarch butterfly (*Danaus plexippus*): Understanding perception distance and utilization of resources” ’16-present

Using a variety of experimental techniques, adult and larval monarch movement behavior at the host plant, patch and landscape scales are being investigated. Next generation sequencing of mitochondrial DNA is being used to determine if haplotype variability in field-collected eggs can be exploited as a relative measure of female dispersal and population diversity. Using automated radio telemetry, female perceptual range to host plants and nectar sources as well as flight patterns are being characterized in landscapes with different spatial arrangements of habitat patches. Experiments with and without conspecific competition are elucidating larval movement patterns on and between host plants. Research results will inform monarch butterfly conservation plans in the summer breeding grounds.

University of Delaware; M.S. Thesis Research

“Evaluation of natural plant defenses on the growth, development, and survival of *Ostrinia nubilalis*” ’13-’15

The European corn borer, *Ostrinia nubilalis* (Hübner), was introduced in North America in the early 1900s and for nearly 80 years before the introduction of Bt corn was a major pest of corn. After its introduction, it was found on >200 other plant hosts, but corn remained its primary host. Early life history studies indicated that European corn borer had the potential of a wide host range. This study investigated the growth, survivorship, and feeding preference of the Z-pheromone race European corn borer on a range of hosts that vary in defensive chemistries and historic degree of infestation to better understand the current host plant range of Z-pheromone race of *O. nubilalis*. The plants tested include sweet corn, cry1F Bt field corn, non-Bt corn, cucumber, tomato, and green bean. In most cases, results supported the expected outcome, with significantly higher survival and a preference for non-Bt corn hosts than the other hosts tested. Therefore, non-Bt corn was found to be the most suitable host plant, overall for European corn borer among those tested.

Widener University; Undergraduate Research

“Impact of host plant on larval success of *Epimecis hortaria*” ’10-’13

Polyphagous insect herbivores may exhibit monophagous feeding behaviors due to patchy host plant distributions and limited dispersal mechanisms. The polyphagous moth species, *Epimecis hortaria*, feeds on tulip poplar (*Liriodendron tulipifera*), pawpaw (*Asimina triloba*), sassafras (*Sassafras albidum*), and spicebush (*Lindera benzoin*). These host plant species have uneven distributions across the eastern United States and are often patchily distributed within a single field site. *Epimecis hortaria* disperse as neonates through ballooning. It is likely that this dispersal mechanism results in functional monophagy. In this study, we found significant effects of monophagous diets on *E. hortaria* caterpillar weight, pupal weight and adult weight. Additionally, diet significantly affected weight loss during pupation, such that the largest caterpillars did not become the largest pupae, or adult moths.

Senior Thesis: “Food choice preference throughout the lifespan of *Epimecis hortaria*”

’12-’13

Previously, it was found that a monophagous diet had significant effects on fitness characteristics of *Epimecis hortaria* (larval, pupal, and adult weight). Additionally, heavier pupae and adults often correlate with higher reproductive output and fitness. It was hypothesized that when presented with a choice, larvae would prefer to feed on hosts that will make them larger as adults. We conducted no choice and choice feeding assays with neonates to explore innate feeding preferences. Additional larvae were reared to third instar and fifth instar on a monophagous diet prior to being tested in no choice and choice assays to explore acquired feeding preferences. Preference was determined by comparing amount of feeding on each host plant. In this study, no preference was observed.

“Invertebrate Biodiversity in an Urban Setting”

‘12

Land conversion to urban areas is reducing natural habitat. Biodiversity is often increased in urban areas because of the introduction of non-natives. Microhabitats created through urbanization (streets, curbs, grass, sidewalk, and buildings) may offer resources, division, and protection for invertebrates. Non-native ant species flourish from disturbance in city and captured natural habitats. Because of this, surveys of ant populations were conducted to understand urban biodiversity. Pitfall traps were set and collected weekly for six weeks at two field sites differing in amount of microhabitats. Results suggest that the site with many microhabitats had higher biodiversity than the site with only one microhabitat.

“Do floral spiders limit pollination rate in pawpaw?”

‘10

It was hypothesized that flower-dwelling spiders would prevent pollination from occurring because the spider would prey upon the pollinator. Twice weekly, pawpaw flowers were inspected for flower dwelling spiders. At the end of the season, fruit yield was recorded. The intention was to look for a correlation between the presence/absence of flower-dwelling spiders and fruit yield. However, only one pawpaw fruit was observed at the end of the season.

AWARDS & HONORS

Awards

Entomological Society of America

- 2019 North Central Branch \$200 student travel award; Cincinnati, OH
- 2018 North Central Branch Third Place Paper: Session 2 Ph.D. P-IE Student Competition
- 2018 North Central Branch \$200 student travel award; Madison, WI

Ecological Society of America

- 2016 Real/Brown Travel Award \$300 travel award; Ft. Lauderdale, FL

University Awards

- 2019 Brown Graduate Fellowship (1 of 12 recipients)
 - Used to strategically advance ISU research in science, agriculture, and space science
- 2019 Professional Advancement Grant: \$200 travel award to attend AniMove Statistics for animal tracking data workshop in Front Royal, VA
- 2018 Department of Entomology – Entomology Alumni Scholarship
 - *Selection is based on scholarship, leadership potential, extracurricular activities, work and community experience, and on promise for a career in Entomology*
- 2018 Three Minute Thesis (3MT®) – One of eight finalists
- 2018 IA State Graduate & Professional Student Senate Leadership Award
 - *Awarded to a student that demonstrates excellence in leadership that exemplifies "going above and beyond"*
- 2017 Professional Advancement Grant: \$200 travel award for poster presentation at ESA in Portland, OR
- 2016 Professional Advancement Grant: \$180 travel award for poster presentation at ESA in Ft. Lauderdale, FL
- 2015 Entomology Departmental Travel Award: \$1000 travel award for oral presentation at ESA in Baltimore, MD
- 2015 Entomology Departmental Travel Award: \$1000 travel award for oral presentation at Ent Soc in Minneapolis, MN
- 2012 Nicholas D. Caputo Biology Student-Faculty Research Collaboration Award
 - *Selected by biology faculty for active involvement in research and excellent academic achievement*
- 2010 Widener Univ. College of Arts & Sciences Summer Research Symposium Third Place Poster Presentation

Honors Societies

- Gamma Sigma Delta, *Honor Society of Agriculture* Induction Spring ‘17
- Sigma Alpha Pi, *National Society of Leadership and Success* Induction Fall ‘12
- Beta Beta Beta, *National Biology Honors Society* Induction Fall ‘11
- Order of Omega, *National Greek Leadership and Honors Society* Induction Fall ‘11

TRAINING

Research Related Training

- AniMove: Statistics for Animal Tracking Data Feb '19
 - AniMove is an international collective of researchers with experience related to animal tracking data that offers a range of movement analysis training courses
 - Five day professional training course, targeted toward students, researchers and conservation practitioners that have collected animal relocation data who want to learn how to analyze these data using continuous time movement models (ctmm). Course participants apply learned techniques to their own data during the course.

Scientific Communication Training

- Reiman Gardens, Ames, IA Portal to the Public – Science Communication Fellow Winter '17
 - Science Communication Fellows are scientists, engineers, graduate students, researchers, and other science-based professionals who have been certified through Portal to the Public as current science ambassadors and excellent communicators
 - Attended three professional development workshops
 - Developed and presented a hands on activity focused on my research
 - Science Communication Fellow Showcase, Meet a Scientist Day, & Butterfly Blizzard

TEACHING EXPERIENCE

Teaching Assistant

Iowa State University ENT 370: Insect Biology Fall '18 semester
Course Description: Structure, physiology, evolution, behavior, life histories, & recognition of insects. Collection required. Ran laboratory section with weekly lectures, biweekly quizzes, insect collecting, insect preserving, and grading.

Undergraduate Mentor

Mentored students through independent research from hypothesis formulation to presentation of results

- Iowa State University
 - IINSPIRE LSAMP: The Iowa, Illinois, Nebraska Louis Stokes Alliance for Minority Participation is a Midwest STEM partnership for innovation in research and education. The alliance is committed to broadening the participation of underrepresented minorities in STEM education in the Midwest.
 1. “Monarch larval movement on common milkweed” Summer '18
 - First-Year Honors Mentor Program: Each spring, first-year Honors students are offered an opportunity to experience the world of research firsthand by working under the guidance of an Iowa State faculty mentor or graduate student.
 1. “Milkweed biomass consumption by monarch caterpillars” Spring '18
 2. “Effect of intraspecific competition on monarch larval movement” Spring '19
 - George Washington Carver Intern Program
The program seeks to improve the research enterprise through increased diversity; champion the value of graduate education; and prepare and recruit the best and brightest for undergraduate and graduate education at ISU. The internship program further seeks to bridge the gap between lack of access to technology/information and opportunities to engage in experiential learning in an effort to increase the participation of students of color in STEM fields.
 1. “Flying time of monarch butterflies equipped with radio transmitters” Summer '17
- University of Delaware
 - Senior Thesis mentor “The non-maize oviposition preferences of the European corn borer (*Ostrinia nubilalis*) in relation to larval survival” Fall '15

Undergraduate Technical Supervisor

'13-present
Kerry Snyder ('13); Michael Palmer ('14); Madison Chura & Jessica Faucher ('15); Jacqueline Appelhans, Alec Euken, Cory Haggard, Anthony Kerker, & Julia Pfeiffer ('16); Signey Hilby & Riley Nylin ('17); Cody Acevedo, Kara Weber, Kayla Wernsing, Carolyn White, & Elke Windschitl ('18); Jenna Nixt ('18 & '19); Hector Arbuckle & Audrey Jenkins ('19)

K-12 Advising

- PlantingScience – Master Team Liaison & Mentor '15-present

Scientific mentor for students and liaison between PlantingScience team, teachers, and mentors. PlantingScience is a learning community where scientists provide online mentorship to student teams as they design and think through their own inquiry projects. The program is a collaborative engagement in science education that includes traditional, hands-on and technology-enhanced learning.

- Science Fair – Project Mentor Summer '18
Helped middle school students design an experiment, collect data, analyze results, & present research at a regional science fair
- Girl Scout Gold Award – Project Advisor Summer '18
Taught high school student about monarch butterfly conservation. Designed and planted a butterfly garden. Helped educate the public on the importance of milkweed and nectar sources
- State Science and Technology Fair of Iowa – Junior High Judge Mar '19

GRANTS AWARDED

Principle Investigator:

First-year Honors Mentor Grant, Effect of intraspecific competition on monarch (*Danaus plexippus*) larval movement and survival; \$500; March 2019 – May 2019.

FundISU Alumni Foundation, Monarch butterfly tracking (crowd-funding campaign); \$2,450 (from 9 donors to purchase radio telemetry transmitters); July 12, 2018 – August 20, 2018.

Holohil Grant Program, Tracking monarch butterflies through the Iowa landscape utilizing an automated radio telemetry system; \$900 (to refurbish radio telemetry transmitters); October 15, 2017 – January 15, 2018.

The Garden Club of America Board of Associates Centennial Pollinator Fellowship, Tracking monarch butterflies through the Iowa landscape utilizing an automated radio telemetry system; \$4,000; March 2017 – December 2017.

Contributor:

USDA/NIFA-AFRI, Factors influencing spatially explicit monarch population in Midwest agroecosystems (PI: SP Bradbury, J Adelman, J Coats, R Hartzler, and J Pleasants) \$670,675; February 1, 2018 – January 31, 2021.

GRANTS NOT AWARDED

Principle Investigator:

The Garden Club of America Board of Associates Centennial Pollinator Fellowship, Landscape scale movement: Utilizing automated radio telemetry to guide monarch butterfly habitat restoration; submitted February 2018 (\$4,000; March 2017 – December 2017).

Prairie Biotic Research, Inc. Small Grant, Landscape scale movement: Tracking monarch butterflies with radio telemetry to guide prairie restoration; submitted December 2017 (\$1,500; January 2018 – December 2018).

Contributor

Presidential Interdisciplinary Research Seed Grant Program, Assessing monarch butterfly (*Danaus plexippus*) full mitochondrial DNA genome variation to support a national conservation strategy (PI: SP Bradbury and B Coates); submitted February 2018 (\$47,530; September 2018 – December 2020).

Bailey Research Career Development Award, Understanding monarch butterfly (*Danaus plexippus*) dispersal using full Mt DNA genome sequencing (PI: SP Bradbury and B Coates); submitted October 19, 2017 (\$141,101; January 1, 2018 – December 31, 2020).

USDA/NIFA-AFRI, A method to study insect dispersal by detecting haplotype variation using full mitochondrial genome enrichment and Illumina sequencing (PI: SP Bradbury and B Coates); submitted May 24, 2017 (\$99,983; January 1, 2018 – December 31, 2019).

NSF/Integrated Organismal Systems, Pre-proposal. Fitness in a fragmented landscape: revealing the role of resource-perception capacity in a wild insect (PI: SP Bradbury, J Adelman, T Grant, R Hellmich, T Sappington), submitted January 19, 2017 (April 15, 2018 – April 14, 2021).

USDA/NIFA-AFRI, Factors influencing spatially explicit monarch population responses in midwest agroecosystems (PI: SP Bradbury, J Adelman, J Coats, R Hartzler, R Hellmich and J Pleasants); submitted July 18, 2016 (\$499,004; October 2016 – September 2019); invited to re-submit in 2017.

CAMTech I/UCRE, Pre-proposal. Identification of monarch mitochondrial haplotypes based on direct sequencing (PI: SP Bradbury and B Coates); submitted June 16, 2016 (\$130,000; January 1, 2017 – December 31, 2018).

EXTENSION EXPERIENCE

Outreach to the Public

- Master Gardner Training Oct '16, '17
 - Ran laboratory section to familiarize master gardener trainees with common insect pests
- Informed attendees (farmers, landowners, private gardeners) of implications of understanding monarch movement and behavior into effective habitat restoration
 - IA Farm Progress Show in Boone, IA Aug '16
 - Science Communication Fellow Showcase Apr '17
 - Meet a Scientist Day Jun '17
 - Butterfly Blizzard Dec '17
 - 2018 Iowa Monarch Conservation Summit & Field Day Jul '18
 - Learn on Saturdays at Des Moines Botanical Garden in Des Moines, IA Jan '19
- Taught event attendees about monarch butterfly migration, conservation, and life cycle with live insects
 - Pollinator Palooza at Ames Library in Ames, IA Jan '17
 - Monarchs & Music in Elkader, IA May '17
 - Pollinator Fest at Reiman Gardens in Ames, IA Jul '17, '18
 - Iowa State University Conservation Club Apr '18
 - Social Irrigation at Des Moines Botanical Garden in Des Moines, IA Sep '18
- Authored IA State Integrated Crop Management Blogs
 - "Update on Monarch Butterflies in Iowa" May '17
 - "Monarch Southern Migration in Progress" Sep '17

Entomology Outreach to K-12

- Taught about insect diversity, ecology, & biology
 - Classroom visit to Tatnall Middle School in Wilmington, DE Sep '13, '14, '15
 - Working with Animals Camp at White Clay Creek State Park in Newark, DE Jul '14, '15
- Ran workshops for grades 6-12 on scientific research & career opportunities in ecology
 - "Taking the Road Less Traveled" STEM Careers Conference for girls Oct & Nov '18
 - Ames High School classroom visit & assembly Sep '17, Dec '18
 - Monarchs on the Move 2018 Ag Innovators Experience Training Jan & Feb '18
 - Native Bee Challenge 2019 Ag Innovators Experience Training Feb & Mar '19
- Letters to a Pre-Scientist '14-present
 - The mission of Letters to a Pre-Scientist is to demystify science careers by creating personal connections between students from high-poverty schools and real scientists

Butterfly Wing Docent - Reiman Butterfly Gardens Volunteer Spring '18

- Assisted visitors with interpretation of the exhibits
- Trained in the Containment Facility Standard Operating Procedures and USDA Containment Guidelines
- Responsible for monitoring visitor activities and preventing the accidental or deliberate removal of butterflies, moths, or plant material from the display area

Media Interviews

- Widener University Publications
 - "What's Up at Widener Alumni Corner: Biology Alumna Kelsey Fisher Studies Monarch Butterfly" Oct '18
- Ames Tribune, Ames, IA
 - "ISU Student Using Radio Telemetry to Track Monarch Butterflies" Jul '18
- Daily Times Herald, Carroll, IA
 - "At Iowa State, Teams Studying Monarchs are Female" Sep '17
- Iowa State University Publications
 - "Three Minute Thesis (3MT®) Finalists" Oct '18
 - "Float like a Butterfly, Research like a Scientist" Jul '17
 - "Milkweed, Monarchs, and Models" Dec '16
- Agriculture Business Report WHO Channel 13, Des Moines, IA
 - "Tracking Monarch Butterflies" Jul '17

UNIVERSITY SERVICE

Iowa State University

University Committee for the Advancement of Women and Gender Equality, Grad Student Rep '18-'19

Entomology Student Organization, Vice President '17-'18

University of Delaware

Department of Entomology and Wildlife Ecology, Seminar Coordinator '15

- Served as a liaison between department chair and guest scientists; kept time for speakers; organized schedules

Widener University

Widener Dance Company

• President '12-'13

- Collaborated with adviser and university staff
- Delegated responsibilities
- Planned semi-annual recitals; Scheduled rehearsals; Recruited choreographers

• Vice President '11-'12

- Planned and executed Dance-A-Thon for National Association of Anorexia Nervosa & Associated Disorders (ANAD); raised \$1,000
- Planned semi-annual recitals

• Treasurer '09-'11

- Managed finances: ticket sales, costume purchasing

Committee Responsible for Enhancing Widener (CREW) – Orientation Leader '10-'13

- Acted as a resource for new students; aided in acclimation to campus; informed students of campus services

Delta Phi Epsilon International Sorority

• Recruitment Advisor, Beta Nu Chapter '13-'15

- Applied experience and knowledge from the Phi Pi chapter to improve recruitment efforts and membership retention in the Beta Nu chapter

• Vice President of Academic Affairs, Phi Pi Chapter '12-'13

- Organized workshops and peer mentoring programs to equip members with the skills to succeed (2.5 GPA)

• Vice President of Recruitment, Phi Pi Chapter '11-'12

• Recruitment Chair, Phi Pi Chapter '10-'11

MEMBERSHIP IN PROFESSIONAL SOCIETIES

Ecological Society of America '11-present

Entomological Society of America '13-present

Botanical Society of America '17-present

SERVICE TO PROFESSIONAL SOCIETIES

Entomological Society of America

Student Activities Council, Iowa State University Representative '18-'19

Regional Linnaean Games Competitor, Iowa State University '17, '18, & '19

Regional Linnaean Games Competitor, University of Delaware '14 & '15

Ecological Society of America

Student Section

• Chair '17-'18

- Worked with a team of passionate students to better the Ecological Society of America student experience
- Planned/organized/lead workshops at the annual meeting: “confessions from graduate students”, student orientation, student networking, scientific communication, “stories from scientists”
- Lead biweekly teleconferences with leadership team to foster collaboration and progress on student section initiatives
- Effectively communicated regularly with ESA executive board members and staff
- Attended governing board meetings

• Vice Chair '16-'17

- Planned/organized workshops: student orientation, networking, NSF funding
- Led coordination of liaisons between the student section and other ESA sections
- Attended governing board meetings

• Treasurer '15-'16

- Planned/organized/lead “advice from graduate students” workshop
- Managed finances (Max \$15,000)

Extending the Tent Task Force, Student Representative

'18

To enhance ESA's relevance and increase diversity of all kinds, Richard Pouyat (ESA President) created the Extending the Tent Task Force consisting of representatives from across ESA. The overall charge of the Task Force is to (1) develop a vision for ESA membership for the next 20 years that addresses inclusion, diversity (in professional and employment sectors), and engagement (with other disciplines, practitioners, the public, and policy makers) and (2) devise a strategy to achieve this vision.

ESA Career Fair, Organizing Committee

'18

Organized a 4-day long career fair at the 2018 ESA Annual Meeting in New Orleans. Activities included, interview demos, resume reviews, mini workshops, and panel discussions. Planned schedule; recruited speakers and reviewers; lead discussions.

EcoFutures Initiative, Coordinator & Contributor

'16

Collaborated with 14 graduate students across the country through student lead workshops and discussions to identify and remedy the prospective challenges and opportunities of 21st century ecologists. Manuscript printed in *Ecosphere*.

PUBLICATIONS

Hansen, W, J Scholl, A Sorensen, **KE Fisher**, J Klassen, L Calle, G Kandlikar, N Kortessis, D Kucera, D. Marias, D Narango, K O'Keefe, W Recart, E Ridolfi, & M Shea. 2018. How do we ensure the future of our discipline is vibrant? Student reflections on careers and culture in ecology. *Ecosphere*. 9(2): e02099.

Fisher, KE, CE Mason, JL Flexner, J Hough-Goldstein, & JH McDonald. 2017. Survivorship of Z-pheromone race European corn borer (Lepidoptera: Crambidae) on a range of host plants varying in defensive chemistry. *Journal of Economic Entomology*. 110(3): 978-985.

Krumm, JL, AA Nagengast, A Moretti, M Colgan, **KE Fisher**, KL Hy, RM Castellante, M Poslusny. 2014. Summer research program on a shoestring budget: Increasing participation in undergraduate research. *Perspectives on Undergraduate Research and Mentoring*. 3(2): 1-10.

In Preparation

Fisher, KE & CE Mason. Host plant preferences of Z-race European corn borer (*Ostrinia nubilalis*) based on plant tissue consumption rates. *Journal of Economic Entomology*, *In preparation*.

Fisher, KE & SP Bradbury. Significance of monarch butterfly (*Danaus plexippus*) larval movement on conservation efforts and survey design. *Journal of Insect Conservation*, *In preparation*.

Fisher, KE & SP Bradbury. Monarch butterflies: Speculation based on observations by field entomologists. *American Entomologist*, *In preparation*.

Fisher, KE, J Adelman, P Dixon, & SP Bradbury. Automated radio telemetry system from commercially available equipment to track flying insect species. *Methods in Ecology and Evolution*, *In preparation*.

PRESENTATIONS

2019 Arbuckle, H, A Jenkins, KE Fisher, & SP Bradbury. Effect of intraspecific competition on monarch larval movement (Poster). Iowa State University Honors Poster Presentation. May 1, 2019. Ames, IA.

2019 Wernsing, K, C White, E Windschitl, KE Fisher, & SP Bradbury. An experimental design to estimate the number of milkweed plants needed to support larval monarch butterfly development (Poster). Iowa State University Honors Poster Presentation. May 1, 2019 Ames, IA.

2019 Wernsing, K, C White, E Windschitl, KE Fisher, & SP Bradbury. An experimental design to estimate the number of milkweed plants needed to support larval monarch butterfly development (Poster). Annual Meeting of the National Conference on Undergraduate Research. April 11 – 13, 2019. Kennesaw, GA.

2019 **Fisher, KE** & SP Bradbury. Estimates of common milkweed (*Asclepias syriaca*) utilization by monarch (*Danaus plexippus*) caterpillars. Annual Meeting of the North Central Branch of the Entomological Society of America. March 17 – 20, 2019. Cincinnati, OH.

2019 **Fisher, KE**, J Adelman, P Dixon, & SP Bradbury. Monarch butterfly movement ecology: Adapting automated radio telemetry to track monarch butterflies. Annual Meeting of the North Central Branch of the Entomological Society of America. March 17 – 20, 2019. Cincinnati, OH.

2019 Weingarten, CR, KE Fisher, EW Hodgson, SP Bradbury. Evaluating monarch flight with a transmitter prototype (Poster). Annual Meeting of the North Central Branch of the Entomological Society of America. March 17 – 20, 2019, Cincinnati, OH.

- 2019 **Fisher, KE**, J Adelman, P Dixon, & SP Bradbury. Tracking monarch butterflies with radio telemetry: Insight for conservation planning. Annual Meeting of the Society of Rangeland Management. February 10 – 14, 2019, Minneapolis, MN (invited speaker).
- 2018 **Fisher, KE**. Monarch butterfly movement ecology. Final Round of the Iowa State Three Minute Thesis (3MT®) Competition, November 5, 2018, Ames, IA.
- 2018 **Fisher, KE**. Monarch butterfly movement ecology. Preliminary Round of the Iowa State Three Minute Thesis (3MT®) Competition, October 23, 2018, Ames, IA.
- 2018 **Fisher, KE** & SP Bradbury. Where'd that caterpillar go? Frequency of larval movement and estimates of milkweed utilization by monarch caterpillars. The Annual Meeting of the Ecological Society of America, August 4 – 10, 2018, New Orleans, LA.
- 2018 Acevedo C, KE Fisher, SP Bradbury. Monarch larval movement on common milkweed (Poster). Iowa State University Summer Undergraduate Research Symposium. August 2, 2018. Ames, IA.
- 2018 Acevedo C, KE Fisher, SP Bradbury. Monarch larval movement on common milkweed (Poster). Iowa State University Chapter of LSAMP-IINSPIRE's Summer Research Symposium. July 25, 2018. Ames, IA.
- 2018 Balder, T & **KE Fisher**. Mighty monarchs: Utilizing GIS for conservation questions. Iowa Technology and Geospatial Annual Conference. June 12 – 15, 2018, Des Moines, IA.
- 2018 Wernsing, K, C White, E Windschitl, KE Fisher, SP Bradbury. Monarch instar biomass consumption and its correlation to stems present (Poster). Iowa State University Honors Poster Presentation. April 25, 2018. Ames, IA.
- 2018 **Fisher, KE** & SP Bradbury. Where'd that caterpillar go? Frequency of larval movement and estimates of milkweed utilization by monarch caterpillars. Annual Meeting of the North Central Branch of the Entomological Society of America. March 18 – 21, 2018, Madison, WI. (3rd place award).
- 2018 **Fisher, KE** & SP Bradbury. Iowa monarch conservation and movement ecology. Annual Iowa Turfgrass Conference & Trade Show. January 23 – 25, 2018, Altoona, IA (invited speaker).
- 2017 Hilby, S, KE Fisher, SP Bradbury. Flying time of monarch butterflies equipped with radio transmitters (Poster). Iowa State University George Washington Carver Summer Research Internship Program Symposium. August 4, 2017. Ames, IA.
- 2017 Hilby, S, KE Fisher, SP Bradbury. Flying time of monarch butterflies equipped with radio transmitters. Iowa State University George Washington Carver Summer Research Internship Program Symposium. August 4, 2017. Ames, IA.
- 2017 **Fisher, KE**, SP Bradbury, & J Adelman. Testing methods for tracking monarch butterfly movement with radio telemetry (Poster). Annual Meeting of the Ecological Society of America. August 6 – 11, 2017, Portland, OR.
- 2017 **Fisher, KE**, SP Bradbury, & J Adelman. Estimating perceptual range of the monarch butterfly (*Danaus plexippus*) with an automated radio telemetry system. Annual Meeting of the Entomological Society of America. November 5 – 8, 2017, Denver, CO.
- 2017 Pocius, V, T Blader, & **KE Fisher**. ISU monarch workgroup projects: Progress and prospects. IA State Department of Entomology Seminar Series. February 6, 2017, Ames, IA.
- 2017 **Fisher, KE**. Growth and development differences of European corn borer, *Ostrinia nubilalis* (Hübner), on a range of host plants. IA State Department of Entomology Brown Bag Lunch Series. January 26, 2017, Ames, IA.
- 2016 **Fisher, KE**, BS Coates, & SP Bradbury. Identification of monarch mitochondrial haplotypes based of direct sequencing (Poster). Annual Meeting of the Ecological Society of America. August 7 – 12, 2016, Ft. Lauderdale, FL.
- 2016 **Fisher, KE**, B.S. Coates, & S.P. Bradbury. Identification of monarch mitochondrial haplotypes based of direct sequencing (Poster). The Annual Meeting of the North Central Branch of the Entomological Society of America. June 5 – 8, 2016, Cleveland, OH.
- 2015 **Fisher, KE** & CE Mason. Growth and development differences of European corn borer, *Ostrinia nubilalis* (Hübner), on a range of host plants. Graduate Student Research Presentation Day. March 2015, University of Delaware, Newark, DE.
- 2015 **Fisher, KE** & CE Mason. Picky caterpillars: Feeding preference of the European corn borer, *O. nubilalis* (Hübner), over a range of host plants. Annual Meeting of the Entomological Society of America. November 15 – 18, 2015, Minneapolis, MN.
- 2015 **Fisher, KE** & CE Mason. Growth and survivorship differences of European corn borer, *Ostrinia nubilalis* (Hübner), on a range of host plants. Centennial Celebration of the Annual Meeting of the Ecological Society of America. August 9 – 14, 2015, Baltimore, MD.
- 2015 **Fisher, KE** & CE Mason. Growth and development differences of European corn borer, *Ostrinia nubilalis* (Hübner), on a range of host plants. Annual Meeting of the Eastern Branch of the Entomological Society of America. March 14 – 17, 2015, Rehoboth, DE.

- 2014 **Fisher, KE** & CE Mason. Neonate host choice behavior of European corn borer, *Ostrinia nubilalis* (Hübner), on a range of host plants. Proposal Presentation. March 2014 University of Delaware, Newark, DE.
- 2014 **Fisher, KE** & CE Mason. Feeding behavior of the European corn borer, *Ostrinia nubilalis* (Hübner), on a range of host plants (Poster). Annual Meeting of the Entomological Society of America. November 16 – 19, 2014, Portland, OR.
- 2013 **Fisher, KE** & KR Goodrich. Host plant preference of the tulip tree beauty moth (*Epimecis hortaria*). College of Arts and Sciences Summer Research Symposium, Widener University, Chester, PA.
- 2013 **Fisher, KE** & KR Goodrich. Host plant preference of the tulip tree beauty moth (*Epimecis hortaria*). Student Projects Day. April 2013, Widener University, Chester, PA.
- 2013 **Fisher, KE**, J Koble, & BW Grant. Invertebrate Biodiversity in an Urban Setting (Poster). Student Projects Day. April 2013, Widener University, Chester, PA.
- 2012 **Fisher, KE** & KR Goodrich. Host plant preference of the tulip tree beauty moth (*Epimecis hortaria*) (Poster). College of Arts and Sciences Summer Research Symposium. September 2012, Widener University, Chester, PA.
- 2012 Colgan, MJ, KE Fisher, CA Moir, LA Ortiz, KR Goodrich, & JL Krumm. Hungry, hungry caterpillars: Food preference in the tulip tree beauty moth. Lehigh Valley Ecology and Evolution Symposium. April 2012, DeSales University, Center Valley, PA.
- 2012 Moir, CA, KE Fisher, MJ Colgan, LA Ortiz, KR Goodrich, & JL Krumm. You are what you eat: Larval success of *Epimecis hortaria* due to host plant diet. Annual Lehigh Valley Ecology and Evolution Symposium. April 2012, DeSales University, Center Valley, PA.
- 2012 Moir, CA, **KE Fisher**, JL Krumm, & KR Goodrich. Host plant diet in the tulip tree beauty moth. Student Projects Day. April 2012, Widener University, Chester, PA.
- 2012 Colgan, MJ, **KE Fisher**, L Ortiz, KR Goodrich, & JL Krumm. Host plant preference in *Epimecis hortaria*. Honors Week Student Presentations. March 2012, Widener University, Chester, PA.
- 2011 Moir, CA, **KE Fisher**, MJ Colgan, L Ortiz, KL Hy, AL Jones, KR Goodrich & JL Krumm. Host plant choice and larval success in *Epimecis hortaria* (Poster). Annual Meeting of the Ecological Society of America. August 7 – 12, 2011, Austin, TX.
- 2011 **Fisher, KE**, L Ortiz, CA Moir, MJ Colgan, K Hy, JL Krumm & KR Goodrich. Impact of host plant species on larval success in *Epimecis hortaria* (Poster). College of Arts and Sciences Summer Research Symposium. September 2011, Widener University, Chester, PA.
- 2011 Jones, A, **KE Fisher**, CA Moir, KL Hy, JL Krumm & KR Goodrich. Impact of host plant species on larval success of *Epimecis hortaria* (Poster). Student Projects Day. April 2011, Widener University, Chester, PA.
- 2011 Moir, C, MJ Colgan, L Ortiz, KE Fisher, JL Krumm & KR Goodrich. Impact of host plant species on food preference in *Epimecis hortaria* (Poster). College of Arts and Sciences Summer Research Symposium. April 2011, Widener University, Chester, PA.
- 2011 Jones, AL, **KE Fisher**, CA Moir, KL Hy, KR Goodrich & JL Krumm. Impact of host plant species on larval success of *Epimecis hortaria* (Poster). Mid-Atlantic Chapter Ecological Society of America and New Jersey Academy of Sciences Joint Meeting. April 2011, Montclair State University, Montclair, NJ.
- 2011 Hy, KL, A Jones, KE Fisher, CA Moir, KR Goodrich & JL Krumm. Impact of host plant species on larval success of *Epimecis hortaria*. Honors Week Student Presentations. March 2011, Widener University, Chester, PA.
- 2010 Hy, KL, KE Fisher, CA Moir, A Jones, K Goodrich & JL Krumm. Impact of host plant species on larval success in *Epimecis hortaria* (Poster). Widener University College of Arts and Sciences Summer Research Symposium. September 2010, Chester, PA (3rd place award).
- 2010 Jones, A, CA Moir, **KE Fisher**, KR Goodrich, & JL Krumm. Do floral spiders limit pollination rate in pawpaw? (Poster). Widener University College of Arts and Sciences Summer Research Symposium. September 2010, Chester, PA.