

## ERICA NADOLSKI

Department of Biology  
Indiana University - Bloomington  
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### EDUCATION

- 2020-Present **Ph.D. in Genome, Cell, and Developmental Biology**  
**Indiana University Bloomington**  
Minors in (i) Evolution and (ii) History & Philosophy of Science  
*In progress*  
Advisor: Dr. Armin Moczek; Committee: Drs. Ryan Bracewell, Luke Nikolov,  
Erik Ragsdale, Ann Sophie Barwich
- 2016-2020 **B.S. with Honors, *summa cum laude***  
**University of Oklahoma, Department of Biology**  
Minors in (i) Chemistry and (ii) History of Science  
Advisor: Dr. J. P. Masly  
Thesis: The Genetic Basis of a Newly-Evolved Reproductive Structure in  
*Drosophila*

### RESEARCH EXPERIENCE

- 2020-Present **IU Department of Biology; Genome, Cell, and Developmental Biology**  
**Research:** The evolution and development of sexual dimorphisms and evolutionary innovations in the beetle tribe Onthophagini; ongoing  
PI: Dr. Armin Moczek, Professor of Biology, Indiana University Bloomington
- 2018-2020 **OU Department of Biology; Honors Undergraduate Research**  
**Research:** Investigated the genetic basis of the origin and evolution of novel secondary sexual reproductive structures in *Drosophila*  
PI: Dr. J. P. Masly, Professor of Biology, University of Oklahoma, Norman, OK
- 2017-2020 **Oklahoma Biological Survey; Undergraduate Research Assistant**  
**Research:** Studied phylogenetic relationships among groups of native and invasive species subject to priority effects and along drought gradients  
PI: Dr. Lara Souza, Director of the Oklahoma Biological Survey, Norman, OK

## **PUBLICATIONS**

-in press-

**Nadolski, E.M.**, Manley, I.G.,\* Gill, S.,\* Moczek, A.P. 2025. Divergent *Hox* cluster collinearity in horned beetles reveals adult head patterning function of *labial*. *Developmental Biology*.

<https://doi.org/10.1016/j.ydbio.2025.07.002>

**Nadolski, E.M.**, Jones, J., Westwick, R.R., Davidson, P. L., Moczek, A.P. 2025. Insects in their environments: eco-devo and evo-devo perspectives. *Comprehensive Molecular Insect Science*, 2<sup>nd</sup> edition. Edited by B. Sinclair, Elsevier. <https://doi.org/10.1016/B978-0-323-95424-2.00007-8>

Mitchell, L.\*, Moczek, A.P., **Nadolski, E.M.** 2025. A conserved somatic sex determination cascade instructs trait-specific sexual dimorphism in horned dung beetles. *Evolution & Development*. <https://doi.org/10.1111/ede.70004>

**Nadolski, E.M.**, † Davidson, P. L., † Moczek, A.P. 2023. Gene regulatory networks underlying the development and evolution of plasticity in horned beetles. *Current Opinion in Insect Science*. <https://doi.org/10.1016/j.cois.2023.101114>

**Nadolski, E.M.**, Moczek, A.P. 2023. The promise and limits of an agency perspective in evolutionary developmental biology. *Evolution & Development*. <https://doi.org/10.1111/ede.12432>

-in preparation-

Harper, A. R., McCrory, J., **Nadolski, E.M.**, Afkhami, M., Masly, J.P. A novel gene specifies species-specific morphology of a sexually selected trait in *Drosophila* (aimed for submission to *PLoS Biology*)

\* student mentee

† co-first authors

## **PRESENTATIONS**

2025      Innovation and diversification of and through sexual dimorphism: insights from horned beetles. *Pan-American Society of Evolutionary Developmental Biology Meeting*. **Awarded Best Student Talk.**

2024      Evolution, development, and trait-specificity: the gene regulatory basis of sexual dimorphism in horned beetles. *European Society of Evolutionary Developmental Biology Meeting*. **Poster.**

2024      Contributions of sex-biased gene expression and chromatin accessibility to the evolution of sexual dimorphism in horned beetles. *IU Animal Behavior Conference*. **Poster.**

- 2024 Innovation of and through sexual dimorphism: insights from horned beetles. *Society of Integrative and Comparative Biology*. **Awarded Runner-up for Division of Evolutionary Developmental Biology Best Student Talk**
- 2024 Evolutionary novelties, segmental boundaries, and Hox gene expression in the insect head. Society of Integrative and Comparative Biology. **Awarded Division of Evolutionary Developmental Biology Best Student Poster**
- 2023 EMBO/FEBS Venice summer school in evolutionary developmental biology: The future of evo devo systems biology. *Invited participant*.
- 2022 EMBO/FEBS Venice summer school: The character concept in metabolic, physiological, and developmental evolution. *Invited participant*.
- 2020 The Genetic Basis of a Newly-Evolved Reproductive Structure in *Drosophila*. OU Undergraduate Research Day. **Talk.**
- 2020 The Genetics of Sex-Specific Reproductive Traits in *Drosophila*. The Allied Genetics Conference. **Talk.**

### **GRANTS AND FELLOWSHIPS**

- 2025-26 IU College of Arts and Sciences Dissertation Research Fellowship
- 2023-24 IU-NIH "Common Themes in Reproductive Diversity" Predoctoral Fellowship
- 2022-23 IU College of Arts and Sciences Kindig Research Fellowship
- 2021 NSF Graduate Research Fellowship – Honorable Mention
- 2021-22 John Templeton Foundation Research Fellowship
- 2020-21 IU College of Arts and Sciences Graduate Fellowship
- 2019 OU Honors College Undergraduate Research Grant

### **AWARDS**

- 2025 PASEDB 2025 Meeting Best Student Talk Award
- 2025 IU Animal Behavior Program William J. Rowland Mentoring Award
- 2024 IU Biology Dona G. Graam Fellowship Award
- 2024 Executive Dean's Travel Award for Women in STEM
- 2024 SICB 2024 Division of Evolutionary Developmental Biology Best Poster Award
- 2023 IU Animal Behavior Program Hanna Kolodziejewski Service Award
- 2022 IU Provost's Travel Award for Women in Science
- 2020 Genetics Society of America TAGC 2020 Undergraduate Travel Award

2020 OU Undergraduate Research Day Distinguished Presenter Award

### **TEACHING EXPERIENCE**

- 2025 **“Entomology,”** Associate Instructor, BIOL-Z373; with Prof. Megan Murphy
- 2023 **“Entomology,”** Associate Instructor, BIOL-Z373; with Prof. Armin Moczek
- 2022 **“Eco Evo Devo: Thinking about Evolution,”** Journal Club organizer and Facilitator, BIOL-Z620
- 2022 **“Introductory Biology: The Biology of the Senses,”** Associate Instructor, BIOL-L 104; with Prof. Laura Mojonnier
- 2022 **Guest Lecture “From candidate gene to functional analysis using RNAi,”** ABEH-A 501 'Techniques in reproductive diversity'

### **SERVICE**

#### **Departmental**

- 2022-2024 Biology Department Diversity, Equity, and Inclusion Committee, Student Rep.
- 2022-2023 Biology Department Graduate Recruitment Weekend, Food Committee Chair
- 2021-2022 GCDB Graduate Student Association, Secretary
- 2021-2022 Biology Department Graduate Recruitment Weekend, Activities Committee
- 2020-2023 BioLGBTQ Student Association, member
- 2021 Created & ran BioLGBTQ “Safe Space Training Workshop” for Biology Dept.

#### **Mentoring**

- 2024 **London Mitchell\***, Bloomington High School South senior  
BHSS Senior Internship Program (12 weeks)
- 2023 **Isabel Manley\***, IU student - Bachelor of Science in Biology  
Undergraduate research project (2 semesters)
- 2023 **Gabriel Ruiz**, high school student  
IU James Holland Summer Programs - Research Program (1 week)
- 2023 **Cohort** of 9 high school students  
IU James Holland Summer Programs - Research Exposure (1 day)
- 2022 **Sukhmani Gill\***, high school student  
IU GROUPS Summer Research Experience (6 weeks)

\* *Mentee included as co-author on a publication*

## **Community Outreach**

- 2025 **Mammalian Skull Evolution**  
Outreach module. Taught to 30 high school students from Brown County, IN. April 9<sup>th</sup>
- 2024 **BugFest 2024**. Aug. 24<sup>th</sup>. Presented on horned beetle biology and diversity in Bloomington, IN.
- 2024 **Science Fest**  
“Mammalian Skull Evolution” module displayed at IU Outreach event. April 6<sup>th</sup>.
- 2023 **Reconstructing 6 million years of human evolution using diverse data sets**  
Outreach module with five AP Biology class periods at Bloomington High School South; 240 participants
- 2022 **Mammalian Skull Evolution**  
Outreach module. Taught to teens from the Bloomington Youth Shelter. Dec. 6<sup>th</sup>; 6 students. Taught to a 5<sup>th</sup> grade class at Templeton Elementary School. Oct. 11<sup>th</sup>; 22 students; Bloomington, IN
- 2022 **Science Fest**  
“Mammalian Skull Evolution” outreach module displayed at IU event. Oct. 22<sup>nd</sup>
- 2022 **BugFest 2022**. Oct. 1<sup>st</sup>. Presented on horned beetle biology and diversity in Bloomington, IN.
- 2021 **Introduction to the Scientific Method using Termite Behavior**  
Outreach module taught to a 3<sup>rd</sup> grade class at Childs Elementary School. Bloomington, IN; ~20 students
- 2021 **Reconstructing 6 million years of human evolution using diverse data sets**  
Outreach module with two AP Biology classes at Bloomington High School South; 60 participants
- 2021 **BugFest 2021**. Presented on horned beetle biology and diversity in Bloomington, IN.
- 2020 **Tiny Fruit Flies Answer Big Scientific Questions**  
Animated video describing Masly Lab research at a grade-school level  
<https://www.youtube.com/watch?v=zJB7bortvOw&t=58s>

## **Academic Service**

- 2024 Manuscript Review – Evolution & Development
- 2024 Manuscript Review – eLife
- 2023 Manuscript Review – Evolution & Development
- 2022 Manuscript Review – Evolution & Development
- 2021 Manuscript Review – Seminars in Cell and Developmental Biology

**Professional Affiliations**

Pan-American Society for Evolutionary Developmental Biology

European Society for Evolutionary Developmental Biology

Society of Developmental Biology

Society for Integrative and Comparative Biology