



Nicolas J. Wheeler, Ph.D.
 Department of Biology
 College of Arts and Sciences
University of Wisconsin–Eau Claire

✉ wheelenj@uwec.edu
 🌐 www.github.com/wheelern
 🌐 www.wheelerlab.bio
 ☎ 1 (715) 836-3021
 🏠 345 Phillips Hall
 101 Roosevelt Avenue
 Eau Claire, WI 54701

CURRENT POSITION

2022 - **Assistant Professor**
 Department of Biology
University of Wisconsin–Eau Claire, WI USA

EDUCATION AND TRAINING

2020 - 2022 NIAID NRSA (F32) Postdoctoral Fellow
University of Wisconsin-Madison, Madison, WI USA

2017 - 2020 Postdoctoral Fellow
Merck KGaA, Madison, WI USA

2013 - 2017 PhD in Genetics & Genomics
Iowa State University, Ames, IA USA

2009 - 2013 BS in Oxbridge Honors Molecular Biology
William Jewell College, Liberty, MO USA

TEACHING

UWEC teaching

BIOL 221L - Foundations of Biology I Lab
 Role: co-instructor
 Fall 2022, 2023, 2024 & Spring 2023, 2024 (11 sections total)

BIOL 305 - Molecular and Cell Biology
 Role: course coordinator and sole instructor
 Spring 2023-2025 (4 credits, lecture)

BIOL 306 - Infectious Disease Biology
 Role: course coordinator and sole instructor
 Fall 2023 & 2024 (3 credits, lecture)

BIOL 343 - Applied Bioinformatics I
 Role: course coordinator and sole instructor
 Fall 2024 (4 credits, lecture and lab)

BIOL 393 - Junior Seminar in Bioinformatics
 Role: course coordinator and sole instructor
 Spring 2025 (1 credit, seminar)

BIOL 443 - Applied Bioinformatics II
 Role: course coordinator and sole instructor

Spring 2025 (4 credits, lecture and lab)

BIOL 345 - Invertebrate Zoology

Role: course coordinator and sole instructor

Fall 2022 (4 credits, lecture + lab)

Previous teaching

PBS 514 (Veterinary Parasitology), UW-Madison School of Veterinary Medicine

2019-2022: Course instructor (4 lectures, 2 labs)

V PTH 353 (Introduction to Parasitology), Iowa State University

2017: Course instructor (1 lecture)

BMS 329 (Anatomy and Physiology of Domestic Animals), Iowa State University

2017: Course instructor (3 lectures)

PUBLICATIONS

‡ Corresponding author(s) † Co-senior authors § Equal contribution [UWEC undergraduate](#)
 Citations: 720, h-index: 11 | [Google Scholar](#) | [MyNCBI Bibliography](#)

UWEC Affiliation

6. Z Caterer, R Horejsi, C Weber, B Mathisen, C Nelson, M Bagatta, I Coughlin, M Wettstein, Ankit Kulshrestha, Hui Siang Benjamin Lee, Leonardo R Nunn, M Zamanian, NJ Wheeler[†]. A graphical user interface for *wrmXpress* democratizes phenotypic screening of parasitic worms.
International Journal of Parasitology: Drugs and Drug Resistance 2025.
5. LR Nunn, TD Juang, DJ Beebe, NJ Wheeler^{‡†}, M Zamanian[†]. *A high-throughput sensory assay for parasitic and free-living nematodes.*
Integrative Biology 2023.
4. EG Rehborg[§], NJ Wheeler[§], M Zamanian[†]. *Mapping resistance-associated anthelmintic interactions in the model nematode *Caenorhabditis elegans*.*
PLOS NTD 2023.
3. NJ Wheeler, KT Ryan, KJ Gallo, CR Henthorn, SS Erickson, JD Chan, M Zamanian[†]. *Multivariate chemogenomic screening prioritizes new macrofilaricidal leads.*
Communications Biology 2023.
2. KT Ryan, NJ Wheeler, IK Kamara, H Johnson, JE Humphries, M Zamanian, JD Chan[†]. *Phenotypic profiling of macrocyclic lactones on parasitic *Schistosoma flatworms*.*
Antimicrobial Agents and Chemotherapy 2023.
1. IK Kamara, JT Thao, K Kaur, NJ Wheeler, JD Chan[†]. *Annotation of G-protein coupled receptors in the genomes of parasitic blood flukes.*
microPublication Biology 2023.

Previous Affiliations

14. KJ Gallo, NJ Wheeler, AM Elmi, PA Airs, M Zamanian[†]. *Pharmacological profiling of a *Brugia malayi* muscarinic acetylcholine receptor as a putative antiparasitic target.*
Antimicrobial Agents and Chemotherapy 2023.
13. NJ Wheeler, EA Hallem, M Zamanian[†]. *Making sense of sensory behaviors in vector-borne helminths.*
Trends in Parasitology 2022.
12. HJ Loghry, H Kwon, RC Smith, NA Sondjaja, S Minkler, S Young, NJ Wheeler, M Zamanian, L Bartholomay, MJ Kimber[‡]. *Extracellular vesicles secreted by *Brugia malayi* microfilariae modulate the melanization pathway in the mosquito host.*
Scientific Reports 2022.

11. NJ Wheeler, EJ Garncarz, KJ Gallo, KT Ryan, JD Chan, M Zamanian[†]. *wrmXpress: A modular package for high-throughput image analysis of parasitic and free-living worms.* PLOS NTD 2022.
10. PM Airs, K Vaccaro, KJ Gallo, N Dinguirard, ZW Heimark, NJ Wheeler, J He, K Weiss, NE Schroeder, J Huisken, M Zamanian[†]. *Spatial transcriptomics reveals antiparasitic targets associated with essential behaviors in the human parasite Brugia malayi.* PLOS Pathogens 2022. 18(4): e1010399.
9. NJ Wheeler, PM Airs, M Zamanian[†]. *Long-read RNA sequencing of human and animal filarial parasites improves gene models and discovers operons.* PLOS NTD 2020. 14(11):e0008869.
8. Wheeler NJ, Heimark ZW, Airs PM, Mann A, Bartholomay LC, Zamanian M[‡]. *Genetic and functional diversification of chemosensory pathway receptors in mosquito-borne filarial nematodes.* PLOS Biology 2020. 18(6):e3000723.
7. HJ Loghry, W Yuan, M Zamanian, NJ Wheeler, TA Day, MJ Kimber[†]. *Ivermectin inhibits extracellular vesicle secretion from parasitic nematodes.* Journal of Extracellular Vesicles 2020. 10(2):e12036.
6. T Maier, NJ Wheeler, EKO Namigai, J Tycko, RE Grawelle, Y Woldeamanuel, K Klohe, J Perez-Saez, SH Sokolow, GA De Leo, TP Yoshino, M Zamanian[†], J Reinhard-Rupp[‡]. *Gene drives for schistosomiasis transmission control.* PLOS NTD 2019. 13(12):e0007833.
5. International Helminth Genomes Consortium. 2018. *Comparative genomics of the major parasitic worms.* Nature Genetics 2019. doi:10.1038/s41588-018-0262-1
4. NJ Wheeler, N Dinguirard, J Marquez, A Gonzalez, M Zamanian, TP Yoshino, MG Castillo[†]. *Sequence and structural variation in the genome of the Biomphalaria glabrata cell line.* Parasites & Vectors 2018. 11(1):496.
3. S Hahnel, NJ Wheeler, Z Lu, A Wangwiwatsin, P McVeigh, A Maule, M Berriman, TA Day, P Ribeiro, CG Grevelding[‡]. *Tissue-specific transcriptome analyses provide new insights into GPCR signaling in adult Schistosoma mansoni.* PLOS Pathogens 2018. 14(1):e1006718.
2. NJ Wheeler, PN Agbedanu, MJ Kimber, P Ribeiro, TA Day, M Zamanian[†]. 2015. *Functional analysis of Girardia tigrina transcriptome seeds pipeline for anthelmintic target discovery.* Parasites & Vectors 2015. 8(1):34.
1. M Zamanian, PN Agbedanu, NJ Wheeler, P McVeigh, MJ Kimber, TA Day[†]. *Novel RNAi-mediated approach to G protein-coupled receptor deorphanization: proof of principle and characterization of a planarian 5-HT receptor.* PLOS One 2012. 7(7):e40787.

PRESENTATIONS

Invited Talks: 11, Selected Talks: 11, Posters: 14

[‡] Presenter UWEC undergraduate

35. NJ Wheeler[†]. *Using high-performance computing to study the quantitative ethology of human parasites.* UWEC HPC User Group, Eau Claire, WI. December 2024. (**Invited Talk**)
34. R Horejsi, C Nelson, A De Ruyter, H Gensch, C Weber, M Bagatta, NJ Wheeler[†]. *Quantitative ethology of schistosome miracidia and other aquatic invertebrates.* Meeting of the American Society of Parasitologists, Denver, CO. June 2024. (**Selected Talk**)
33. R Horejsi[†], C Nelson[†], C Weber, NJ Wheeler. *Developing methods to quantify Schistosoma mansoni miracidia behavior and responsiveness.* Meeting of the American Society of Parasitologists, Denver, CO. June 2024. (**Poster**)

32. A De Ruyter[†], H Gensch[†], M Bagatta, NJ Wheeler. *Chemosensory behaviors of larval Aedes triseriatus mosquitoes*. Meeting of the American Society of Parasitologists, Denver, CO. June 2024. (Poster)
31. S Willett[†], Z Caterer, S Mathisen, NJ Wheeler. *wrmXpress GUI: A user-friendly interface for high-throughput analysis of parasitic worms*. Meeting of the American Society of Parasitologists, Denver, CO. June 2024. (Poster)
30. R Horejsi[†], NJ Wheeler. Quantitative ethology of a parasitic flatworm. UWEC Provost's Honors Symposium. April 2024. (Selected Talk)
29. Z Caterer[†], S Mathisen[†], M Zamanian, NJ Wheeler. *wrmXpress GUI: A user-friendly interface for high-throughput analysis of parasitic worms*. UWEC Celebration of Excellence in Research + Creative Activity. April 2024. (Poster)
28. R Horejsi[†], C Weber[†], C Nelson[†], NJ Wheeler. *Developing methods to quantify Schistosoma mansoni miracidia behavior and responsiveness*. UWEC Celebration of Excellence in Research + Creative Activity. April 2024. (Poster)
27. M Bagatta[†], I Coughlin, NJ Wheeler. *Chemosensory behaviors of larval Aedes triseriatus mosquitos*. UWEC Celebration of Excellence in Research + Creative Activity. April 2024. (Poster)
26. M Bagatta[†], I Coughlin[†], R Horejsi[†], M Wettstein, I Malin, JE Smith, NJ Wheeler. *Intestinal helminths of the California ground squirrel (*Otospermophilus beecheyi*)*. Meeting of the American Society of Parasitologists, Kansas City, MO. July 2023. (Poster)
25. A Coffin[†], S Biser[†], M Bagatta, M Brenna, C Dovornay, N Ehrike, E McMichael, L Peterson, A Richard, C Smith, C Veeneman, NJ Wheeler. *A survey of aquatic snails and trematodes in Eau Claire County*. National Conference on Undergraduate Research, Eau Claire, WI. April 2023. (Poster)
24. NJ Wheeler *Making sense of sensory behaviors in vector-borne helminths*. Meeting of the American Society of Parasitologists, College Station, TX. July 2022. (Selected Talk)
23. NJ Wheeler *Making sense of helminth sensory behaviors*. University of Wisconsin-Eau Claire, Eau Claire, WI. December 2021. (Invited Talk)
22. NJ Wheeler *Making sense of helminth sensory behaviors*. University of Wisconsin-Oshkosh, Oshkosh, WI. December 2021. (Invited Talk)
21. NJ Wheeler *Making sense of helminth sensory behaviors*. Uniformed Services University of the Health Sciences, Bethesda, MD. April 2021. (Invited Talk)
20. NJ Wheeler. *Uncovering the cellular and molecular program of schistosome migrations*. University of Calgary, Faculty of Veterinary Medicine, Calgary, AB. January 2021. (Invited Talk)
19. NJ Wheeler, PM Airs, M Zamanian. *Characterization of the chemosensory pathway of filarial worms*. ASTMH, Virtual. November 2020. (Selected Talk, Young Investigator Award Winner)
18. NJ Wheeler, NM Dingirard, J Reinhard-Rupp, D Rollinson, TP Yoshino, M Zamanian. *Development of community efforts towards schistosomiasis vector genetic tools and control strategies*. ASTMH, Virtual. November 2020. (Poster)
17. NJ Wheeler *Making sense of helminth sensory behaviors*. Texas Tech University, School of Veterinary Medicine, Amarillo, TX. July 2020. (Invited Talk)
16. NJ Wheeler, M Zamanian. *Long-read RNA sequencing in neglected human parasites*. Pacific Biosciences North America User Group Meeting, Newark, DE. September 2019. (Invited Talk)
15. NJ Wheeler, ZW Heimark, PM Airs, A Mann, LC Bartholomay, M Zamanian. *Genetic and functional diversification of chemosensory pathway receptors in filarial nematode parasites*. World Association for the Advancement of Veterinary Parasitology, Madison, WI. July 2019. (Poster)
14. NJ Wheeler, PM Airs, M Zamanian. *Mining the excretory-secretory system of filarial nematodes for new anthelmintic targets*. Bridging the Divide: Parasitic Nematodes Workshop, GSA International C. elegans Conference, Los Angeles, CA, USA. June 2019. (Invited Talk)

13. NJ Wheeler, PM Airs, M Zamanian. *Long-read RNA sequencing in neglected human parasites.* Pacific Biosciences Certified Service Provider Launch, Madison, WI, USA. May 2019. **(Invited Talk)**
12. NJ Wheeler, K Gallo, A Golfinos, C Gilsdorf, T Meikle, M Zamanian. *Tissue-specific heterologous expression of Brugia malayi GPCRs in Caenorhabditis elegans.* Molecular Helminthology: An Integrated Approach. San Antonio, TX USA. Apr 2019. **(Poster)**
11. NJ Wheeler, ZW Heimark, T To, E Chen, PM Airs, M Zamanian. *Conserved and divergent aspects of chemosensory signaling in filarial parasitic nematodes.* Molecular Helminthology: An Integrated Approach. San Antonio, TX USA. Apr 2019. **(Poster)**
10. NJ Wheeler, M Zamanian. *New insights into neglected diseases.* University of Wisconsin-Whitewater Biology Forum, Whitewater, WI, USA. March 2019. **(Invited Talk)**
9. NJ Wheeler, PM Airs, M Zamanian. *Exploring new therapeutic targets for neglected parasites.* Department of Pathobiological Sciences Research Seminar, Madison, WI. March 2019 **(Selected Talk)**
8. NJ Wheeler, N Dinguirard, J Reinhard-Rupp, TP Yoshino, M Zamanian. *Progress towards transgenesis in Biomphalaria glabrata and implications for snail control.* Global Schistosomiasis Alliance Meeting. New Orleans, LA USA. Oct 2018. **(Selected Talk)**
7. NJ Wheeler, N Dinguirard, G Disselhoff, T Maier, EK Namigai, J Tycko, J Reinhard-Rupp, TP Yoshino, M Zamanian. *Towards transgenesis in Biomphalaria glabrata.* 15th International Symposium on Schistosomiasis. Rio de Janeiro, Brazil. July 2018. **(Invited Talk and Poster)**
6. NJ Wheeler, T Meikle, L Fraser, D Srinivasan, T To, PM Airs, MJ Kimber, LC Bartholomay, M Zamanian. *Exploring sensory pathways and behaviors in filarial nematode parasites.* C. elegans Neuronal Development, Synaptic Function & Behavior Topic Meeting, Madison, WI. June 2018. **(Poster)**
5. NJ Wheeler, T Meikle, LC Bartholomay, M Zamanian. *Adapting tools from free-living nematodes to study chemosensory pathways in filarial nematode parasites.* Chicago Area Worm Meeting (CHAWM). Chicago, IL. May 2018. **(Selected Talk)**
4. NJ Wheeler, M Zamanian. *Computational and molecular pipelines to combat neglected parasites.* Comparative Biomedical Sciences Recruitment Weekend, Madison, WI. February 2018. **(Selected Talk)**
3. NJ Wheeler, M Zamanian, MJ Kimber, TA Day. *The cysloop superfamily of platyhelminths and nematodes.* Molecular Helminthology: An Integrated Approach, Cape Cod, MA. March 2017. **(Poster)**
2. NJ Wheeler, M Zamanian, MJ Kimber, TA Day. *Anthelmintic Targets in a Genomic World: a case study in GPCRs.* Anthelmintics: Discovery to Resistance II, San Diego, CA. March 2016. **(Selected Talk)**
1. NJ Wheeler, M Zamanian, TA Day. *A Girardia tigrina transcriptome to aid in Neglected Tropical Disease research.* 5th Annual Midwest Neglected Infectious Diseases Meeting, West Bend, IN. July 2015. **(Selected Talk)**

GRANTS & PROPOSALS

Submitted proposals

CC* Compute-Campus: Accelerating Undergraduate Education and Discovery in AI-driven and Data-Intensive Science and Engineering.
 NSF Campus Cyberinfrastructure (CC*)
 Role: Senior Personnel | 2026-2027 | Total Costs: \$669,718

BRC-BIO: Uncovering a chemosensory role for TRP channels in free-living and parasitic flatworms.
 NSF BRC-BIO (Unfunded, scored Highly Meritorious)
 Role: Principal Investigator | 2024-2027 | Total Costs: \$500,000

Current funding

Molecular determinants and behavioral fingerprints of schistosome miracidia host-seeking
 NIH National Institute of Allergy and Infectious Diseases R15
 Role: Principal Investigator | 2024-2027 | Total Costs: \$332,488

Quantitative behavioral ethology of mosquito larvae

UWEC ORSP Summer Research Experience for Undergraduates | Summer 2024

UWEC ORSP Student-Faculty Research Collaboration | Fall 2024

Developing *Girarida dorotocephala* as a model organism for flatworm sensory biology

UWEC ORSP Student-Faculty Research Collaboration | Fall 2024

Previous funding

Disentangling host-parasite interactions in a model snail-trematode system

UWEC ORSP Summer Research Experience for Undergraduates | Summer 2023

UWEC ORSP Student/Faculty Research Collaboration | Fall 2023

UWEC ORSP Summer Research Experience for Undergraduates | Summer 2024

Building a graphical user interface for wrmXpress

UWEC ORSP Student/Faculty Research Collaboration | Spring 2024

Establishing molecular diagnostics for wildlife parasitology

UWEC ORSP Student/Faculty Research Collaboration | Spring 2023

UWEC ORSP Student/Faculty Research Collaboration | Fall 2023

A survey of intestinal parasites in the California ground squirrel *Otospermophilus beecheyi*, a unique mammalian model system for longitudinal behavioral studies

UWEC ORSP Student/Faculty Research Collaboration | Fall 2022

Determining the molecular basis of chemosensory behaviors in mosquito-borne filarial nematode parasites

NIH Ruth L. Kirschstein National Research Service Award (NRSA) Individual Postdoctoral Fellowship

Role: Principal Investigator | 2020-2022 | Total Direct Costs: \$137,124

Driving schistosome-resistance in *Biomphalaria*

Merck KGaA Global Health Institute (MGHI) Postdoctoral Fellowship

Role: Principal Investigator. | 2017-2021 | Total Direct Costs: \$200,000

An optimized CRISPR/Cas9 protocol for genome editing in *Schistosoma mansoni*

Iowa State University College of Veterinary Medicine Seed Grant

Role: Primary Author and Co-Investigator. | 2015-2017 | Total Direct Costs: \$40,000

HONORS & AWARDS

2024: UWEC Emerging Mentor in Research, Scholarship, and Creative Activity Award finalist

2024: UWEC ORSP Celebration of Scholarship

2024: UWEC CAS nominee for The Discussion Project

2023: UWEC ORSP Celebration of Scholarship

2020: ASTMH Young Investigator Award First Tier Mention (\$600)

2016: Anthelmintics Conference Travel Grant

2016: ISU GPSS Professional Advancement Grant

2016: Interdepartmental Genetics and Genomics Travel Award

2015-2016: Brown Research Fellowship, Iowa State University (\$10,000)

2013-2017: Graduate College Fellowship, Iowa State University (\$14,400/year)

2013-2017: Biotechnology Fellowship, Iowa State University (\$4,320/year)

2013: B.S awarded with honors, William Jewell College

2009-2013: Jewell Scholarship, William Jewell College (\$30,000/year)

UNDERGRADUATE MENTORSHIP

Current UWEC research mentorship

Sonja Olson (2024 -)
Saige Maasz-Seawright (2024 -)
 2024 Diversity Mentoring Award
Helen Gensch (2023 -)
Sophie Willett (2023 -)
Avery De Ruyter (2023 -)
Chase Nelson (2023 -)
Rachel Horejsi (2022 -)
 2024-2025 UWEC ORSP Outstanding Undergraduate Research Project Award
 2023 UWEC Women In Science Scholarship
 2023 UWEC Duxbury Student High Achievement Scholarship
 2023 UWEC Lim Scholarship in Experimental Biology Scholarship

Previous UWEC research mentorship

Maggie Bagatta (2022 - 2024 | Lab Technician at Genetic Visions)
Ireland Coughlin (2022 - 2024)
Blake Mathisen (2022 - 2024 | Manufacturing Engineer I at Beckman Coulter)
Zach Caterer (2022 - 2024 | Biological Engineering PhD student at University of Colorado)
 2024 UWEC Outstanding Biology Senior Awardee
Megan Wettstein (2022 - 2024 | DVM student at University of Wisconsin-Madison)
 2023 UWEC Jay Metler Pre-Veterinary Scholarship
 2023 UWEC Wisconsin Rural Pre-Veterinary Scholarship
 2024 UWEC Outstanding Biology Senior Awardee
Carly Weber (2023 - 2024 | Process Scientist at Diasorin)

UWEC other mentorship

Becca VonBank (2024) - Biology education program - faculty recommender
Madelyn Ford (2024) - BIOL 306 Honors contract
Catie Freymuth (2023) - Service-learning project
Tiffany Pronschinske (2023) - Service-learning project
Alex Richard (2023) - Service-learning project
Claire Veeneman (2023) - Service-learning project
Isaac Ackerman (2023) - BIOL 305 Honors contract
Jessica Neu (2023) - Biology education program - faculty recommender
Charlie Dovornay (2022) - Service-learning project
Max Brenna (2022) - Service-learning project

Previous mentorship

Elena Garncarz (2019 - 2022 | PhD student at UW-Madison MDTP)
Lenny Nunn (2020 - 2022 | Research intern at UW-Madison)
Michelle Cho (2021 - 2022 | Neuroscience student at UW-Madison)
Tran To (2017 - 2020 | PhD student at Icahn School Medicine at Mount Sinai)
Eric Chen (2017 - 2019 | MPH student at Emory University)
Alexis Mann (2017 | PhD student at Johns Hopkins University)

SERVICE

Departmental service:

Ongoing: Biology EDI Committee
Ongoing: New Science Building Committee
2025: Lab Manager Search Committee

Service to journals:

See my [Web of Science profile](#) for a validated list of my contributions as an ad-hoc reviewer.
 Journals include: *BMC Research Notes*, *Microbiology Spectrum*, *Experimental Parasitology*, *BMC Genomics*, *Gene*, *PLOS Neglected Tropical Diseases*, *Molecular and Biochemical Parasitology*,

International Journal for Parasitology: Drugs and Drug Resistance, International Journal for Parasitology, Computational and Structural Biotechnology Journal

Other service:

- 2025:** Ad hoc reviewer for NIH NIAID Transmission of Vector-Borne and Zoonotic Diseases study section
- 2024:** American Society of Parasitologists student awards committee
- 2024:** Panelist for UWEC McNair Program discussion on work-life balance
- 2023:** Chair for two sessions at the National Conference for Undergraduate Research (NCUR)
- 2022:** Chair for two sessions at the annual meeting of the American Society of Parasitologists
- 2020:** Co-chair for the ACMCIP: Parasite Biology, Genomics and Genome Editing session at ASTMH

AFFILIATIONS AND PROFESSIONAL DEVELOPMENT

- | | |
|--------|--|
| 2022 - | American Society of Parasitologists |
| | – Member |
| | – Student Awards Committee |
| 2020 - | American Society of Tropical Medicine and Hygiene |
| | – Member |
| 2019 - | Global Schistosomiasis Alliance
eliminateschisto.org |
| | – Member of the Research Working Group |
| | – Previous leader of the snail/vector control work stream |

UWEC Tier 2 EDI Workshops:

- 2024:** Biology Department Fall 2024 Digital Accessibility Sessions
- 2022:** Recognizing and Responding to Microaggressions in the Classroom
- 2022:** Transparent Design Framework Workshop
- 2022:** Teaching Academy I
- 2022:** Teaching Academy II
- 2022:** My Personal Journey and Bias

Other training:

- 2018:** FR3 Minicourse, University of Wisconsin-Oshkosh, Dr. Shelly Michalski and Steve Schaar
- 2018:** Research Mentor Training, WISCIENCE, Dr. Anne Lynn Gillian-Daniel and Dr. Michelle Keller-Pearson
- 2016-2017:** Preparing Future Faculty, Iowa State University, Dr. Holly Bender and Karen Bovenmyer