

Alex J. Franzen, PhD
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EDUCATION

- 2025 Ph.D. in Ecology and Evolutionary Biology,
University of Oklahoma; Major Professor: Caryn Vaughn, PhD
Dissertation: Linking phylogeny and ecology to enigmatic freshwater mussel shell morphologies.
- 2019 B.S. in Fisheries, Wildlife and Conservation Biology,
University of Minnesota Twin Cities

RECENT APPOINTMENTS

- 2026– Peter Buck Postdoctoral Fellow, National Museum of Natural History, Smithsonian Institution, Washington DC. Supervisor: John Pfeiffer, PhD
- 2023–2024 Research Volunteer, U.S. Geological Survey Columbia Environmental Research Center, Columbia, MO. Supervisor: Brandon Sansom, PhD
- 2022–2025 Graduate Fellow, National Museum of Natural History, Smithsonian Institution, Washington DC. Supervisor: John Pfeiffer, PhD
- 2020–2025 Graduate Research Assistant, Oklahoma Biological Survey, University of Oklahoma, Norman, OK. Research Project: OPUS – Linking species traits, community change and environmental change across scales to forecast how animal declines impact ecosystem function.
Supervisor: Caryn Vaughn, PhD
- 2020–2025 Graduate Teaching Assistant, School of Biological Sciences, University of Oklahoma, Norman, OK. Courses: General Biology and Stream Ecology
- 2019 Stream Fish Habitat Intern, Minnesota Department of Natural Resources.
Supervisor: Lecia Babeu
- 2018–2020 Curatorial Assistant (Fish and Invertebrates), Bell Museum, University of Minnesota, St. Paul, MN. Supervisor: Andrew Simons, PhD
- 2016–2018 Undergraduate Research Assistant, Department of Fisheries and Wildlife, University of Minnesota, St. Paul, MN. Research Project: Improving conservation of the federally endangered Spectaclecase mussel with natural history research and host management recommendations.
Supervisor: Mark Hove

RESEARCH PRODUCTS (ORCID: 0000-0002-9109-377X)

Peer-reviewed publications

Atkinson, CL, **AJ Franzen**, GW Hopper, JW Lopez, Z Zbinden, CC Vaughn. Environmental gradients drive convergence in life history strategies among disparate but coevolved taxonomic groups. *Ecology* 106(12): e70273. <https://doi.org/10.1002/ecy.70273>.

Keogh, SM, BJ Minerich, LM Ohlman, ME Pletta, AE Scheunemann, ZK Schroeder, ZA Secrist, **AJ Franzen**, BE Sietman, & AM Simons. (2025) Phenotypic Plasticity, Multiple Paternity, and Shell Shape Divergence Across Lake-Stream Habitats in a Freshwater Mussel Brood (*Pyganodon grandis*). *Freshwater Biology* 70(1), e14358. <https://doi.org/10.1111/fwb.14358>

Lopez, JW, TP DuBose, **AJ Franzen**, CL Atkinson, & CC Vaughn. (2022) Long-term monitoring shows that drought sensitivity and riparian land use change coincide with freshwater mussel declines. *Aquatic Conservation: Marine and Freshwater Ecosystems* 32(10), 1571–1583. <https://doi.org/10.1002/aqc.3884>

In review/revision

***Franzen, AJ**, BJ Sansom, JM Pfeiffer, FE Goetz, SM Keogh, CC Vaughn. Evaluating correlations between freshwater mussel shell morphology and valve-gaping activity across riverine conditions. *In revision at Freshwater Biology*.

Moore, EA, CC Vaughn, & **AJ Franzen. Variation in shell morphology and mitochondrial DNA of two species of freshwater mussels in the Kiamichi River, Oklahoma, USA. *In revision at Freshwater Mollusk Biology and Conservation*.

***Franzen, AJ**, JM Pfeiffer, M Sei, and CC Vaughn. Clarification of Species Boundaries in Common and Morphologically Variable Freshwater Mussels (*Fusconaia*). *In review*.

In preparation

***Franzen, AJ**, JM Pfeiffer, M Sei, BE Sietman, JL Harris, SM Keogh, K Inoue, and CC Vaughn. Genome skimming, morphometrics, and ecology elucidates a shell morphology spectrum in freshwater mussels (Unionidae: *Fusconaia*). *In prep*.

* = manuscript available on request

** = Student mentee author/co-author

Non Peer-reviewed newsletter articles and technical reports

Pfeiffer, JM, JP Chong, S Craft, T Dubose, **A Franzen**, M Hove, T Smith, and D Woolnough. 2024. Requesting feedback on potentially problematic freshwater mollusk common names. [Ellipsaria 26 \(1\): 18-21](#).

Vaughn, CC, JW Lopez, TP DuBose, **AJ Franzen**. 2022. Status assessment for the Southern Hickorynut in Oklahoma ([Report No. T-111](#)). Oklahoma Department of Wildlife Conservation.

Franzen, AJ, and CC Vaughn. 2022. Rescuing Regional Freshwater Mussel Collections: Digitizing Mussels at the University of Oklahoma. [Ellipsaria 24 \(3\): 16-17](#).

Smith, TA, M Bradley, M Davis, B Douglas, H Dunn, N Eckert, **A Franzen**, M Hove, B Karns, D Kelner, L Kitchel, M Pletta, A Roberts, B Sietman, J Tiemann, and J Weinzinger. 2021. Plan for the Controlled Propagation and Reintroduction of the Spectaclecase Mussel (*Cumberlandia monodonta*). USFWS Interagency Plan, St. Paul, MN. 53 pp.

Benedict, A, M Hove, B Sietman, **A Franzen**, L Neu, C Rounds, E Slaikeu, I Tolo, M Pletta, and D Hornbach. 2019. Natural hosts of some common Mississippi River mussel species. [Ellipsaria 21\(2\): 33-35](#).

Franzen, A and A Simons. 2019. Revisiting the Dwight W. Taylor Collection of Mollusks: Curation and Cataloging of Invertebrate Specimens in the Bell Museum. [Ellipsaria 21\(1\): 17](#)

Swanson, C, M Hove, **A Franzen**, D Hornbach, M Davis, and B Sietman. 2018. *Ligumia subrostrata* host fishes and geospatial associations. [Ellipsaria 20\(4\): 45-48](#).

Hove, M, B Burke, **A Franzen**, M Bartsch, D Waller, N Eckert, M Bradley, T Smith, M Davis, B Sietman, B Karns, R Whaley, and A Holdhusen. 2018. Brooding *Quadrula fragosa* Behaviors and Interactions with Fishes. [Ellipsaria 20\(2\): 26-30](#).

Sietman, B, M Davis, M Hove, M Pletta, T Wagner, S Marr, Z Secrist, M Freeburg, A

Scheunemann, K Krupp, E Hagemeyer, **A Franzen**, C Swanson, and A Sampson. 2017. *Cumberlandia monodonta* – Host Enigma Resolved. [Ellipsaria 19\(3\): 18-20](#).

FELLOWSHIPS AND GRANTS

Research Fellowships

- 2026 Peter Buck Postdoctoral Fellowship Program, National Museum of Natural History, Smithsonian Institution (\$144,000)
- 2024 Nancy L. Mergler Dissertation Completion Fellowship, University of Oklahoma (\$25,000)
- 2024 Dodge Family College of Arts and Sciences Graduate Finishing Fellowship, University of Oklahoma (\$12,500 – Fellowship awarded but I declined the award because I received other funding)
- 2022 Dodge Family College of Arts and Sciences Graduate Research Fellowship, University of Oklahoma (\$5,000)
- 2022 Kenneth Jay Boss Fellowship in Invertebrate Zoology, National Museum of Natural History, Smithsonian Institution (\$4,000)
- 2022–2024 University of Oklahoma Adams Graduate Scholarship (3 awarded–\$10,500 total)

Research Grants

- 2023 Society of Systematic Biologists Graduate Student Research Award (\$3,000)
- 2022–2023 Robberson Research Grant, University of Oklahoma, Graduate College (2 awarded–\$2,000 total)
- 2022 American Malacological Society Melbourne R. Carriker Student Research Award in Malacology (\$1,300)
- 2022 OU Graduate Student Senate Research Grant (\$750)
- 2021 Conchologists of America Academic Grant (\$1,685)
- 2021–2023 Hill Fund, University of Oklahoma, Biology Department (3 awarded–\$2,000 total)
- 2019 Oklahoma Department of Wildlife Conservation, State Wildlife Grant. *Status assessment for the Southern Hickorynut in Oklahoma*. PI: CC Vaughn, Co-PIs: JW Lopez, TP DuBose, **AJ Franzen** (\$101,693)
- 2018 Undergraduate Research Opportunities Program Grant, University of Minnesota (\$1,800)
- 2017 Unpaid Internship Grant, University of Minnesota CFANS (\$1,000)

Travel Grants

- 2023 Freshwater Mollusk Conservation Society Student Travel Award (\$900)
- 2022–2024 OU Graduate Student Senate Travel Grant (3 awards – \$2,100 total)
- 2019 University of Minnesota CFANS Study Abroad Travel Grant (\$1,300)
- 2019 Minnesota Chapter American Fisheries Society Scholarship (\$900)

PROFESSIONAL PRESENTATIONS

Invited seminars

Linking Phylogeny and Ecology to Enigmatic Freshwater Mussel Shell Morphologies. University of Oklahoma. Norman, OK, USA. 25 April 2025.

Paradox of the Pigtoes: linking phylogeny and ecology to morphological diversity in pleurobemine freshwater mussels. Department of Invertebrate Zoology No Bones Lunch Seminar, National Museum of Natural History, Washington D.C, USA. 25 October 2022.

Contributed oral presentations as presenting author

Franzen, AJ, JM Pfeiffer, SM Keogh, M Sei, JL Harris, BE Sietman, and CC Vaughn. Elucidating supraspecific diversity and species boundaries in the Pleurobemini with molecular

phylogenetics and geometric morphometrics. Society for Freshwater Sciences Annual Meeting (International Meeting). Philadelphia, PA, USA. 2-6 June 2024.

Franzen, AJ, JM Pfeiffer, SM Keogh, and CC Vaughn. Genome skimming and micro-CT scanning elucidate species boundaries in problematic pleurobemines. 13th Biennial Freshwater Mollusk Conservation Society Symposium (International Meeting). Portland, OR, USA. 10-14 April 2023.

Franzen, AJ, JM Pfeiffer, and CC Vaughn. DNA Barcoding and Molecular Phylogenetics Reveals Hidden Diversity in a Widespread Freshwater Mussel Species. Consortium of Aquatic Science Societies Joint Aquatic Sciences Meeting (International Meeting). Grand Rapids, MI, USA. 15-20 May 2022.

Franzen, AJ. Freshwater time machines: patterns of mussel collecting in the United States. University of Oklahoma EcoMunch series. Norman, OK, USA. 4 April 2022.

Franzen, AJ. Recovering cryptic diversity in imperiled freshwater mussels (Bivalvia: Unionidae). University of Oklahoma EcoMunch series. Norman, OK, USA. 13 October 2021.

Franzen, AJ. Comparative species delimitation of the *Fusconaia flava* species complex (Bivalvia: Unionidae). Interior Highlands Mollusk Conservation Meeting. Virtual meeting. 16 March 2021

Franzen, A, M Hove, B Sietman, M Davis, D Hornbach, and A Benedict. Rough fish no more: research and management of rare *Hiodon* and an endangered freshwater mussel. Upper Mississippi River Conservation Committee Mussel Coordination Team meeting. LaCrosse, WI, USA. 18-19 March 2019.

Franzen, A, M Hove, B Sietman, M Davis, D Hornbach, and A Benedict. Rough fish no more: research and management of rare *Hiodon* and an endangered freshwater mussel. Minnesota Chapter of American Fisheries Society annual meeting. Fargo, ND, USA. 23-25 February 2019.

Co-authored poster presentations

Lopez, JW, CL Atkinson, **AJ Franzen**, CC Vaughn. Synthesizing functional traits and environmental data to understand freshwater mussel declines and their implications for stream ecosystems. World Congress of Malacology. São Paulo, Brazil. 6 August 2025.

Dubose, TP, TA Smith, SR Craft, JP Chong, MC Hove, **AJ Franzen**, DA Woolnough, X Rangaswami, JM Pfeiffer, ME Bradley, K Inoue, and JS Tiemann. Identifying, promoting, and supporting diversity in the Freshwater Mollusk Conservation Society. Consortium of Aquatic Science Societies Joint Aquatic Sciences Meeting (International Meeting). Grand Rapids, MI, USA. 15-20 May 2022.

TEACHING EXPERIENCE

Summer 2023	Stream Ecology (BIOL 4423), 23 students
Summer 2021	Stream Ecology (BIOL 4423), 19 students
Fall 2020	Introductory Biology Laboratory (BIOL 1124), 64 students
Fall 2019	Ichthyology Laboratory (FW 4136/5136), 24 students

PROFESSIONAL ACTIVITIES

Professional Societies

1. American Fisheries Society
 2021–present Professional Certification – Associate Fisheries Professional
 2017–present Student & Early Career Professional Education Subsection
 2016–present Member
2. Freshwater Mollusk Conservation Society
 2025–present Mollusk Professional Certification – Certified Mollusk Professional
 2023–present Genetics Committee
 2020–present Diversity, Equity, and Inclusion Committee
 2016–present Member
3. Society for Freshwater Science
 2019–present Member
4. Society of Systematic Biologists
 2022–present Member

Professional Development

1. Marine Biological Laboratory Advanced Research Training Course, Workshop on Molecular Evolution. 2023
2. PADI Open Water SCUBA Diver. 2017
3. U.S. Fish and Wildlife Service Electrofishing Safety. 2017
4. American Heart Association Basic Life Support (CPR and AED). 2018
5. American Red Cross Adult First Aid/CPR/AED. 2018 and 2021

MENTORING ACTIVITIES

1. Undergraduate Students at the University of Oklahoma
 2023 Emily Nguyen
 2022–2025 Elisabeth Moore (received best student presentation in Biology at 2024 OU Undergraduate Research Symposium)
2. Undergraduate Students at the University of Minnesota
 2022–2023 Marcus Popovich, College of Food, Agricultural and Natural Resource Sciences (CFANS) Mentor Program
 2020–2021 Anna Deneen, CFANS Mentor Program
 2019–2020 Lauren Laughlin, CFANS Mentor Program

SERVICE

Institutional leadership

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| 2024 | Graduate Student representative on OU School of Biological Sciences committee on promotion and tenure policies |
| 2022–2023 | OU School of Biological Sciences Diversity, Equity, and Inclusion committee (disbanded due to Oklahoma Executive Order 2023-31) |
| 2022–2023 | Member of Board of Directors for CFANS Alumni Society |
| 2021–2023 | Biology Department Faculty Meeting Liaison, OU Biology Graduate Student Association |
| 2020–2022 | Steering Committee Alumni Co-chair. CFANS Mentor Program |
| 2018–2019 | Vice President, CFANS Undergraduate Student Board |

2017–2018 President, CFANS Undergraduate Student Board
 2017–2018 Steering Committee Student Co-Chair. CFANS Mentor Program

Ad-hoc reviewer

Freshwater Mollusk Biology and Conservation, Freshwater Science, Hydrobiologia, Freshwater Biology, Ecology

OUTREACH ACTIVITIES

2026–present Member of Vermillion River Watershed Community Advisory Committee. Dakota County, MN.
 2024 I co-developed this web site and accompanying outreach poster:
[The Freshwater Mussels of Oklahoma](#)
 2022 OU Coding Outreach for Data Education Workshop Instructor.
 2021–2025 BioReach graduate student-led STEM outreach, University of Oklahoma.
 Ask-A-Grad-Student events at Sam Noble Museum.
 Research Spotlight at Norman Earth Day Festival, Norman, OK.
 2020 Bell Museum Fish Collection Spotlight.
[Something Fishy at the Bell](#)
 2017–2019 Led 8th grade students on tours of the FWCB Wet Lab and Fish & Invertebrate Collections at the Bell Museum for
[Hope for Tomorrow](#) campus visits.

ADDITIONAL SUPPORTING EXPERIENCE

2013–present Volunteer with Friends of the Mississippi River, St. Paul, MN
 2014–present Volunteer with Minnesota Wetland Health Evaluation Program, Dakota County, MN
 2015–2020 Volunteer with Minnesota Department of Natural Resources Scientific and Natural Areas Program
 2015–2020 Volunteer with Minnesota Pollution Control Agency Citizen Stream Monitoring Program