

Emily M. Troyer

Ph.D. Candidate

Sam Noble Oklahoma Museum of Natural History
Department of Biology, The University of Oklahoma
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EDUCATION

Ph.D. Biology, University of Oklahoma, Norman, OK. *Expected May 2024.*

Dissertation: Integrating genomic, morphological, and paleontological data to unravel macroevolutionary drivers of morphological diversity of two major groups of fishes.

Advisor: Dr. Dahiana Arcila

M.S. Marine Science, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia. 2018.

Thesis: Microhabitat Association of Cryptobenthic Reef Fishes (Teleostei: Gobiidae) in the Central Red Sea

Advisor: Dr. Michael Berumen

B.S. Zoology, The Ohio State University, Columbus, OH. 2015.

B.S. Criminology, Arabic minor, The Ohio State University, Columbus, OH. 2012.

PUBLICATIONS

- (3) **Troyer EM**, Betancur-R R, Hughes LC, Westneat M, Carnevale G, White WT, Pogonoski JJ, Tyler JC, Baldwin CC, Ortí G, Brinkworth A, Clavel J, Arcila D. 2022. The impact of paleoclimatic changes on body size evolution in marine fishes. *Proceedings of the National Academy of Sciences*. 119 (29) e2122486119. DOI: 10.1073/pnas.2122486119
- (2) Kovačić M, Bogorodsky SV, **Troyer EM**, Tornabene L. 2019. Cerogobius petrophilus (Perciformes: Gobiidae), a new gobiid genus and species from the Red Sea. *Zootaxa*. DOI: 10.11646/zootaxa.4565.2.2
- (1) **Troyer EM**, Coker DJ, Berumen ML. 2018. Comparison of cryptobenthic reef fish communities among microhabitats in the Red Sea. *PeerJ*. DOI: 10.7717/peerj.5014

PUBLICATIONS IN PREPARATION

- (3) West J, Faucher RE, Miller E, Álvarez-Carretero S, Carnevale G, Santaquiteria A, **Troyer EM**, Baldwin C, Westneat M, Ortí G, Hughes L, Evans K, Betancur-R R, Arcila D, Evans K. The Perks of Eupercaria: Rapid Skull Shape Evolution in a Massive Radiation of Bony Fishes. *In preparation*
- (2) **Troyer EM**, Evans KM, Goatley C, Friedman M, Carnevale G, Nicholas B, Kolmann M, Bemis K, Arcila D. Evolutionary innovation accelerates morphological diversification in pufferfishes and their relatives. *In review at The American Naturalist*
- (1) Santaquiteria A, Miller E, Rosas-Puchuri U, Pedraza-Marrón C, **Troyer EM**, Westneat M, Carnevale G, Arcila D, Betancur-R R. Colonization dynamics explain the high species richness of syngnatharian fishes (seahorses and allies) in the Indo-Pacific. *In review at The American Naturalist*

FELLOWSHIPS AND AWARDS (total ~\$56,000)

- 2024 University of Oklahoma Three Minute Thesis Competition Runner Up and People's Choice Award **\$2,500**
- 2023 University of Oklahoma College of Arts & Sciences Finishing Fellowship **\$10,500**
- 2023 University of Oklahoma Biology Department Travel Fund **\$1,000**
- 2023 University of Oklahoma Bullard Dissertation Completion Fellowship **\$10,500**
- 2023 International Congress of Vertebrate Morphology Travel Award **\$620**
- 2022 University of Oklahoma Graduate College Design a Shelf Contest **\$500**
- 2021-2023 University of Oklahoma Graduate Student Senate Research Grant **\$1,825**
- 2021 University of Oklahoma L.G. Hill Biology Excellence Fund Award **\$1,500**
- 2021 American Society for Ichthyologists and Herpetologists Frederick H. Stoye Award for Best Student In-Person Oral Presentation **\$300**
- 2020-2022 University of Oklahoma L.G. Hill Biology Excellence Fund Award **\$1,500**
- 2020-2023 University of Oklahoma Department of Biology Adams Summer Research Scholarship **\$14,000**
- 2020-2022 University of Oklahoma Graduate College Robberson Research Grant **\$2,500**
- 2020 University of Oklahoma College of Arts and Sciences Leota McGuire Graduate Fellowship **\$8,500**

PRESENTATIONS

- 2023 **Troyer EM**, Evans K, Goatley C, Friedman M, Carnevale G, Nicholas B, Kolmann M, Bemis K, Arcila D. "Kind of a beak deal: Mouth type, not reef association, promotes rapid diversification in marine fishes." Paper. Indo-Pacific Fish Conference, Auckland, New Zealand.
- 2023 **Troyer EM**, Evans K, Goatley C, Arcila D. "Kind of a Beak Deal: Patterns of Skull Evolution in Fossil and Extant Tetraodontiform Fishes." Invited Paper. International Congress of Vertebrate Morphology. Cairns, Australia.
- 2022 **Troyer EM**, Betancur-R R, Hughes LC, Westneat M, Carnevale G, White WT, Pogonoski JJ, Tyler JC, Baldwin CC, Ortí G, Brinkworth A, Clavel J, Arcila D. "The impact of paleoclimatic changes on body size evolution in marine fishes". Paper. Evolution. Cleveland, OH.
- 2021 **Troyer EM**, Betancur-R R, Arcila D. "Role of Paleoclimatic Events on the Evolution of Body Size in Tetraodontiform Fishes." Paper. Stoye Award Best Student Oral Presentation Winner, Joint Meeting of Ichthyologists and Herpetologists. Phoenix, AZ.
- 2018 **Troyer EM**. "Microhabitat association of cryptobenthic fishes in the central Red Sea." Paper. Visiting Scholar Seminar, King Fahd University of Petroleum and Minerals. Dhahran, Saudi Arabia.
- 2017 **Troyer EM**, Coker DJ, Berumen ML. "Microhabitat association of cryptobenthic reef fish (Family: Gobiidae) in the central Red Sea." Paper. 10th Indo-Pacific Fish Conference. Tahiti, French Polynesia.

- 2016 **Troyer EM**, Hoskins EA, Hamilton IM. “Schooling individuals discover a novel food source via social learning faster than non-schooling individuals.” Poster. The Ohio State University Spring Undergraduate Research Student Poster Forum. Columbus, OH.
- 2015 **Troyer EM**, Hoskins EA, Hamilton IM. “How individual variation in activity influences the transmission of novel information.” Poster. The Ohio State University Fall Undergraduate Research Student Poster Forum. Columbus, OH.

TEACHING EXPERIENCE

Graduate Teaching Assistant

- 2019-2023 Introduction to Biology Lab (BIOL 1124)
 2020-2021 Ichthyology (BIOL 4493)

Guest Lecturer

- 2023 Ichthyology (BIOL 4493)

OUTREACH AND SERVICE

- 2023-present Diversity, Equity, and Inclusion Committee, Biology Department, University of Oklahoma. Promote a more diverse department, and consult on matters of diversity and inclusion.
- 2022-2023 Undergraduate Studies Committee, Biology Department, University of Oklahoma. Assist in reviewing new course syllabi and curriculum change requests.
- 2022 Sam Noble Museum Curiosidays. Led an activity where attendees could experiment with gyotaku and create fish prints from museum specimens in the Ichthyology Collection.
- 2022 Graduate Selections Committee, Biology Department, University of Oklahoma. Assisted in evaluating and ranking MS and Ph.D. candidates for the Biology program.
- 2021-present Sam Noble Museum Ichthyology Collections Tour. Give tours of the collection to local schools and answer questions about museum curation and natural history.
- 2018-2019 The Ohio State University Museum of Biological Diversity Ichthyology Collection Volunteer, Supervisor: Marc Kibbey

UNDERGRADUATE MENTEES

- Maddie McClurg University of Oklahoma. Analysis of the phylogenetic placement of *Triodon macropterus*. 2022-present

PROFESSIONAL SOCIETIES AND ASSOCIATIONS

- 2023- present International Society for Vertebrate Morphology
 2021- present American Society for Ichthyologists and Herpetologists
 2021- present Society for the Study of Evolution