Curriculum Vitae

Trevor J. Krabbenhoft

Department of Biological Sciences
Research and Education in Energy, Environment, and Water (RENEW) Institute
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EDUCATION

Ph.D., Biology. *University of New Mexico*. 2012. "Reproductive phenology of fishes of the Rio Grande, New Mexico: a genes-to-community approach." Advisor: Thomas F. Turner

M.S., Biology. *University of South Carolina*. 2006. "Parallel and convergent evolution of endemic fishes within and between two Carolina bay lakes." Advisor: Joseph M. Quattro.

B.S., Zoology. *North Dakota State University*. 2003.

APPOINTMENTS AND PROFESSIONAL EXPERIENCE

2019-2021. Focus area Leader, Freshwater Coastal Ecosystems, RENEW Institute, University at Buffalo, Buffalo, NY.

2018-Present. Assistant Professor, Department of Biological Sciences and Research and Education in Energy, Environment, and Water (RENEW) Institute, University at Buffalo, Buffalo, NY.

2014-2017. Postdoctoral Researcher. Wayne State University. Supervisor: Dr. Thomas Dowling. Research: Ecological and evolutionary genomics fishes of the Great Lakes and western U.S.

2013-2014. Postdoctoral Researcher. Texas A&M University. Supervisor: Dr. John Gold. Research: Population genomics of exploited marine fishes.

2012-2013. Postdoctoral Researcher. University of New Mexico. Supervisor: Dr. Thomas Turner. Research: Comparative immunogenomics of fishes in the Rio Grande, New Mexico.

2012. NSF International Research Experiences for Students (IRES). Field research in Mongolia.

2007-2011. Graduate Assistant. *Department of Biology and Museum of Southwestern Biology, University of New Mexico.*

2007-2011. Summer Field Technician. *American Southwest Ichthyological Research Foundation, Albuquerque, New Mexico.*

2004. Visiting Scientist. NSF East Asia and Pacific Summer Institute, *Australian Museum, Sydney, Australia.*

2003-2006. Graduate Assistant. *Department of Biology, University of South Carolina.*

2003. Museum Technician. *National Marine Fisheries Service, National Systematics Laboratory, Smithsonian Institution, Washington, D.C.*

2002. NSF REU. *Department of Biology, University of South Carolina.*
2001. NSF REU. *National Museum of Natural History, Smithsonian Institution.*
2000-2002. J. Frank Cassel Research Scholar. *North Dakota State University.*
2000. Student Intern. *Minnesota Department of Natural Resources.*
2000. Research Assistant. *U.S. Army Corps of Engineers, Eau Galle Aquatic Ecology Research Facility.*

WORKSHOPS, WORKING GROUPS, AND SPECIAL COURSES

2021-present. Great Lakes Coregonine Taxonomy Committee member (part of coregonine restoration working group).
2018. Invited participant: American Fisheries Society – The Wildlife Society Synthesis Team on Ecosystem Transformation, Seattle, WA. This collaboration yielded two publications (detailed below).
2018. Lake Ontario Coregonid Restoration Workshop.
2018-present. InFish (Inland Fisheries) Working group meeting, Washington, D.C.
2018. NSF-funded workshop: Global Coregonids and Climate Change Adaptation. Workshop on initiating a multi-continent research collaboration on the effects of climate change on coregonid fishes held at INRA, Thonon-les-Bains, France. NSF funded my participation in this workshop as an early career researcher via grant to J. Stockwell, University of Vermont, PI.
2017. Invited panelist: Cisco Genetics Panel Discussion. W. Larson, W. Stott, T. Krabbenhoft (panelists). Great Lakes Fishery Commission Annual Meeting, Duluth, MN.
2015. Invited participant: USGS-funded expert workshop on climate change effects on inland fishes for the development of a special issue in *Fisheries.* Northern Rocky Mountain Science Center, Bozeman, Montana.
2015. Phylogenomics Symposium and Software School. Ann Arbor, Michigan.
2013. Cuba-Mexico-USA Tri-national Initiative for Marine Science and Conservation in the Gulf of Mexico and Western Caribbean. Harte Research Institute, Corpus Christi, Texas.
2011. RAD Sequencing and Genomics Symposium. Portland, Oregon.
2009. UC Davis Next-Gen Sequencing and Bioinformatics Course. Davis, California.
2006. NSF Geometric Morphometrics Workshop, Iowa State University. Ames, Iowa.
2000. Tropical Rainforest Biology Field Course, Costa Rica.

AWARDS, GRANTS AND CONTRACTS

2021. Early Career Award, American Fisheries Society Genetics Section.

Funding received while at UB:
2021-2023. US Fish and Wildlife Service. Genetics of low thiaminase tolerance in lake trout. PI: TJ Krabbenhoft, Co-PI C Osborne.
2021-2023. Great Lakes Fishery Commission, Grass carp (*Ctenopharyngodon idella*) detection and removal from eastern Lake Erie and tributaries. PI: TJ Krabbenhoft. Co-PI: CA Krabbenhoft.

2021-2023. Great Lakes Fishery Commission, Fishery Research Program. Cisco (*Coregonus artedi*) reference genome project: an integrative resource for management and restoration of Great Lakes coregonines. PI: TJ Krabbenhoft, Co-PIs: W Stott, A Ackiss.

2020-2024. US Bureau of Reclamation, Lower Colorado River, MSCP. D-8: Razorback and bonytail stock assessment. TE Dowling (PI), Co-PIs: PC Marsh, BR Kesner, TF Turner, ME Osborne, TJ Krabbenhoft.

2019-2021. USGS Great Lakes Restoration Initiative. What are the Differences in Larval and Juvenile Gene Expression between Hatchery and Wild Cisco? PI: TJ Krabbenhoft.

2018-2021. Great Lakes Fishery Commission, Fishery Research Program. Genomics of Great Lakes ciscoes (*Coregonus* spp.): identifying genetic markers associated with morphological differences. TJ Krabbenhoft (PI), TE Dowling (Co-PI), W Stott (Co-PI), D Yule (Co-PI).

2018-2019. RENEW SEED: Fish and (Sensor) Chips: Environmental Monitoring using Mobile Organisms in the Great Lakes. TJ Krabbenhoft (PI), J-H Seo, J Jornet, S Clark, M Shelly, Z Ahmed.

PUBLICATIONS

Pelosi JA, Bernal MA, **Krabbenhoft TJ**, Galbo S, Prada C, Coffroth MA, Lasker HR (2021) Fine-scale morphological, genomic, reproductive, and symbiont differences delimit the Caribbean octocorals *Plexaura homomalla* and *P. kükenthali*. ***Coral Reefs***, https://doi.org/10.1007/s00338-021-02175-x

Krabbenhoft TJ, MacGuigan DJ, Backenstose NJC, Waterman H, Lan T, Pelosi JA, Tan M, Sandve SR (2021) Chromosome-level genome assembly of Chinese sucker (*Myxocyprinus asiaticus*) reveals strongly-conserved synteny following a catostomid-specific whole genome duplication. ***Genome Biology and Evolution*** evab190, https://doi.org/10.1093/gbe/evab190

Lynch AJ, Thompson LM, Beever EA, Cole DN, Engman AC, Hawkins Hoffman C, Jackson ST, **Krabbenhoft TJ**, Lawrence DJ, Limpinsel D, Magill RT, Melvin TA, Morton JM, Newman RA, Peterson JO, Porath MT, Rahel FJ, Schuurman GW, Sethi SA, Wilkening JL (2021) Guiding principles for managing ecosystem transformation. ***Frontiers in Ecology and the Environment***, https://doi.org/10.1002/fee.2377

Eaton KM, Bernal MA, Backenstose NJC, Yule DL, **Krabbenhoft TJ**. (2021) Nanopore amplicon sequencing reveals molecular convergence and local adaptation of rhodopsin in Great Lakes salmonids. ***Genome Biology and Evolution*** *13:*evaa237 *https://doi.org/10.1093/gbe/evaa237*

Thompson LM, Lynch AJ, Beever EA, Engman AC, Falke JA, Jackson ST, **Krabbenhoft TJ**, Lawrence DJ, Limpinsel D, Magill RT, Melvin TA, Morton JM, Newman RA, Peterson JO, Porath MT, Rahel FJ, Sethi SA, Wilkening JL (2021) Responding to ecosystem transformation: resist, accept, or direct? ***Fisheries***. **Invited Feature Article.** doi:10.1002/fsh.10506

Turner TF, Dowling TE, **Krabbenhoft TJ**, Osborne MJ, Pilger TJ. (2020) Chapter 14: Conservation genetics of desert fishes in the genomics age. Pp. 207-224 in *Standing Between Life and Extinction*. Eds. Propst DL, Williams JE, Bestgen KR, Hoagstrom CW. University of Chicago Press.

Krabbenhoft TJ*, Myers BJE*, Wong J, Chu C, Tingley III RW, Falke JA, Kwak TJ, Paukert CP, Lynch AJ (2020) FiCli, the Fish and Climate Change Database, informs climate change adaptation and management actions for freshwater fishes. ***Scientific Data*** 7, 124 https://doi.org/10.1038/s41597-020-0465-z .*Contributed equally.

Press: Covered in AAAS – EurekAlert! (https://www.eurekalert.org/pub_releases/2020-04/uab-cct042220.php), ScienceDaily (https://www.sciencedaily.com/releases/2020/04/200422132555.htm)

Olson K, **Krabbenhoft TJ**, Hrabik T, Mendsaikhan B, Jensen OP (2019) Pelagic-littoral trophic polymorphism in Hovsgol grayling *Thymallus nigrescens* from Lake Hovsgol, Mongolia. ***Ecology of Freshwater Fish*** 28:411-423.

Smith GR, Zaroban DW, High B, Sigler JW, Schilling J, **Krabbenhoft TJ**, Dowling TE (2018) Introgressive mtDNA transfer in hybrid lake suckers (Teleostei, Catostomidae) in western United States. *Pp. 84-117 In:* Fishes of the Mio-Pliocene Western Snake River Plain and Vicinity***, Miscellaneous Publications of the Museum of Zoology, University of Michigan***, No. 204, No. 3.

Krabbenhoft TJ, Turner TF (2018) Comparative transcriptomics of cyprinid minnows and carp in a common wild setting: a resource for ecological genomics in freshwater communities. ***DNA Research*** 25:11-23.

Myers BJE, Lynch AJ, Bunnell DB, Chu C, Falke JA, Kovach R, **Krabbenhoft TJ**, Kwak TJ, Paukert CP (2017) *Authors 3-9 listed alphabetically. Global synthesis of the projected and documented climate change effects on inland fishes. ***Reviews in Fish Biology and Fisheries*** 27:339-361. **Invited contribution** for special issue: Impacts of climate change on marine and inland fishes and fisheries.

Lynch AJ, Myers BJE, Chu C, Eby LA, Falke JA, Kovach RP, **Krabbenhoft TJ**, Kwak TJ, Lyons J, Paukert CP, Whitney JE (Authors 3-9 listed alphabetically) (2016) Climate change effects on North American inland fish populations and assemblages. ***Fisheries*** 41:346-361. **Invited contribution** for special issue on climate change effects on inland fishes.

Media coverage:

Fisheries: http://fisheries.org/2016/06/in-hot-water-climate-change-is-affecting-north-american-fish/

Triple Pundit: http://www.triplepundit.com/2016/07/warmer-temperatures-impacting-fish-north-american-waters/

Science Daily: https://www.sciencedaily.com/releases/2016/06/160630214513.htm

Field and Stream: http://www.fieldandstream.com/blogs/the-conservationist/research-shows-climate-change-is-already-affecting-gamefish

Phys.org: http://phys.org/news/2016-06-hot-climate-affecting-north-american.html

Wyoming Public Radio: http://wyomingpublicmedia.org/post/climate-change-causing-evolutionary-impacts-trout
ScienceBlog.com: https://scienceblog.com/485038/hot-water-climate-change-affecting-north-american-fish/

Turner TF, **Krabbenhoft TJ**, Collyer ML, Krabbenhoft CA, Edwards MS, Sharp ZD (2015) Retrospective stable isotope analysis reveals ecosystem responses to river regulation over the last century. ***Ecology*** 96:3213-3226.

Mercado-Silva N, Lyons J, Moncayo-Estrada R, Gesundheit P, **Krabbenhoft TJ,** Powell DL, Piller KR (2015) Stable isotope evidence for trophic overlap of sympatric Mexican Lake Chapala silversides (Teleostei: Atherinopsidae: *Chirostoma* spp.). ***Neotropical Ichthyology*** 13:389-400. Open Access.

Krabbenhoft TJ, Platania SP, Turner TF (2014) Interannual variation in reproductive phenology in a riverine fish assemblage: implications for predicting the effects of climate change and alteration of flow regimes. ***Freshwater Biology*** 59:1744-1754.

Krabbenhoft TJ, Turner TF (2014) *Clock* gene evolution: seasonal timing, phylogenetic inertia, or functional constraint? ***Journal of Heredity*** 105:407-415.

Turner TF, Collyer ML, **Krabbenhoft TJ** (2010) A general hypothesis-testing framework for stable isotope ratios in ecological studies. ***Ecology*** 91:2227-2233.

Munroe TA, **Krabbenhoft TJ** (2010) Two unusually large pre-transitional tonguefish larvae (Pleuronectiformes: Cynoglossidae: *Symphurus*) collected in Oceanic waters near the Galapagos Islands. ***Bulletin of Marine Science*** 86:13-31.

Turner TF, **Krabbenhoft TJ**, Burdett AS (2010) Reproductive phenology and fish community structure in an arid-land river system. *In:* Gido K & Jackson D (Eds.): *Community Ecology of Stream Fishes.* ***American Fisheries Society Symposium*** 73:427-446.

Renshaw MA, Carson EW, Hanna A, Rexroad CE, III, **Krabbenhoft TJ**, Gold JR (2009) Microsatellite markers for species of the genus *Dionda* (Cyprinidae) from the American southwest. ***Conservation Genetics*** 10(5):1569-1575.

Krabbenhoft TJ, Collyer ML, Quattro JM (2009) Differing evolutionary patterns underlie convergence on elongate morphology in endemic fishes of Lake Waccamaw, North Carolina. ***Biological Journal of the Linnean Society*** 98:636-645.

Krabbenhoft TJ, Rohde FC, Quattro JM (2009) Threatened Fishes of the World: *Fundulus waccamensis* Hubbs and Raney, 1946 (Fundulidae). ***Environmental Biology of Fishes*** 84:173-174.

Snelson FF, **Krabbenhoft TJ**, Quattro JM (2009) *Elassoma gilberti*: A new species of pygmy sunfish (Elassomatidae) from Florida and Georgia. ***Bulletin of the Florida Museum of Natural History*** 48(4):119-144.

Krabbenhoft TJ, Rohde FC, Leibman AN, Quattro JM (2008) Concordant nuclear and mitochondrial DNA partitions define evolutionarily significant units in the imperiled pinewoods darter, *Etheostoma mariae* (Pisces:Percidae). ***Copeia*** 2008:909-915.

Krabbenhoft TJ, Rohde FC, Quattro JM (2006) Threatened Fishes of the World: *Etheostoma perlongum* (Hubbs and Raney 1946) (Percidae). ***Environmental Biology of Fishes*** 76:411-412.

Krabbenhoft TJ, Rohde FC, Quattro JM (2005) Threatened Fishes of the World: *Menidia extensa* (Hubbs and Raney 1946) (Atherinopsidae). ***Environmental Biology of Fishes*** 73:48.

Krabbenhoft TJ, Munroe TA (2003) *Symphurus bathyspilus*: a new species of cynoglossid flatfish (Pleuronectiformes:Cynoglossidae) from deepwaters of the Indo-West Pacific. ***Copeia*** 2003:810-817.

AD HOC REVIEWER (80 manuscripts, 23 grant proposals, 3 book chapters)

African Journal of Agricultural Research (1 manuscript), *Aquaculture Research* (1), *Aquatic Biology* (3), *Biological Journal of the Linnean Society* (2), *Canadian Journal of Fisheries and Aquatic Sciences* (1), *Canadian Journal of Zoology* (1), *Conservation Genetics* (1), *Copeia* (5), *Ecology and Evolution* (1), *Ecology of Freshwater Fish* (2), *Environmental Biology of Fishes* (9), *Evolution* (1), *Fisheries* (1), *Freshwater Biology* (2), *Frontiers in Ecology and the Environment* (1), *G3: Genes, Genomes, and Genetics* (1), *Genes* (1), *Heredity* (1), *Ichthyological Research* (2), *Integrative Zoology* (1), *International Journal of Molecular Sciences* (1), *Journal of Fish Biology* (6), *Journal of Freshwater Ecology* (1), *Journal of Great Lakes Research* (2), *Journal of Morphology* (1), *Life* (1), *Marine Biotechnology* (1), *Marine Ecology Progress Series* (1), *Molecular Ecology* (2), *Molecular Ecology Resources* (1), *Molecular Biology and Evolution* (1), *Molecular Phylogenetics and Evolution* (1), *Northwest Science* (1), *Oecologia* (1), *PeerJ* (1), *PLoS One* (2), *Proceedings of the Biological Society of Washington* (4), *Proceedings of the Royal Society B* (3), *Reviews in Fish Biology and Fisheries* (1), *Transactions of the American Fisheries Society* (2), *Zoological Research* (1), *Zootaxa* (7).

Ecology of North American Freshwater Fishes by Stephen T. Ross (3 book chapters).

Grant Proposal Reviews*: American Center for Mongolian Studies Field Grant Program* (13 grant proposals), *California Sea Grant – Delta Science program* (4 proposals), Great Lakes Fishery Commission (1 proposal), *Hungary National Research Development and Innovation Office* (1 proposal), *John R. Evans Leaders Fund, Quebec Government, Canada* (1 proposal), *National Science Foundation – Division of Environmental Biology* (1 proposal), *Wisconsin Sea Grant* (1 proposal).

Guest editor: special feature – "Adaptation to Extreme Environments", *Frontiers in Genomics*.

STUDENT MENTORING AND ADVISING

Student and trainee mentoring while at UB

Postdoctoral researchers and research scientists:
2021-present. **Dr. Isabella Porto-Hannes**, Research Scientist.

2020-present. **Dr. Daniel MacGuigan**, Postdoctoral Researcher. **Awards**: 2021 NSF Postdoctoral Research Fellowship.
2018-2019. **Dr. Moisés Bernal**, Postdoctoral Researcher. **Awards**: UB Nominee for 2019 Blavatnik Regional Award for Young Scientists; Evolution Society Conference Travel Grant. Current position: Assistant Professor, Auburn University.
2018-2019. **Dr. Tianying Lan**, Senior Research Scientist. Current position: Senior Applications Specialist, Arbor Biosciences.

Ph.D. students:
2021-present. **Kimberly Louisor**, PhD student, EEB program. **Awards**: Schomburg Fellowship.
2021-present. **Christopher Osborne**, PhD rotation fall 2021. **Awards**: 2021 NSF GRFP Honorable Mention.
2018-present. **Nathan Backenstose**, Ph.D. candidate. **Awards**: Great Lakes Fishery Commission Conference Travel Award; 2021 NY-chapter American Fisheries Society Meeting - Best student presentation award (tied 1st); 2021 American Fisheries Society Genetics Section James Wright Travel Award.
2018-present. **Hannah Waterman**, Ph.D candidate. **Awards**: Schomburg Fellowship.

Masters students:
2020-present. **Brian Foote**, Undergraduate Honors (spring 2021); Masters degree rotation fall 2021. **Awards**: Knobloch Fellowship.

Undergraduate researchers:
2021-present. **Pia Schwarz**, Undergraduate Honors student. **Awards**: MAC Distinguished Scholar Athlete.
2019-present. **Emily Bouffard**, Undergraduate Honors thesis. **Awards**: Miles Fellowship.
2019-present. **Katherine Eaton**, Undergraduate Honors. **Awards**: SUNY Chancellor's Award for Student Excellence; 2020 and 2021 NSF GRFP Honorable Mention; Miles Fellowship; UB Provost Scholar; Honor's College Research Fund recipient; NY American Fisheries Society travel grant (declined).
2018-2019. **Jessie Pelosi**, Undergraduate Researcher. **Awards**: SUNY Chancellor's Award for Student Excellence. Current position: University of Florida, PhD program.

Graduate committees served while at UB:
2020-present. Petar Pajíc. Ph.D. Committee member.
2020-present. Jacob Wojakowski. Grader, M.A. presentation.
2020-present. Steven Fleck, Ph.D. Committee member.
2019-present. Matthew Vandermeulen, Ph.D. Committee member.
2018-present. Izzy Starr, Ph.D. Committee member.
2018-present. Crystal Tomlin, Ph.D. Committee member.
2018-2020. Dr. Shauna Phipps, Ph.D. Committee member.
2018. Rogan Tuck. Grader, M.S. presentation.

2018. John Sebastiani. Grader, M.S. presentation.

OUTREACH AND PROFESSIONAL SERVICE

2020. FiCli Database: A global database of published climate change effects on fish. Developed and maintained an interactive R-shiny site along with the FiCli team (https://ficli.shinyapps.io/database/).
2020. Outreach: Scientific content consultant on "Snakehead", a children's book on invasive snakehead fish.
2020-present. Undergraduate Affairs Committee, Dept. Biological Sciences, Univ Buffalo.
2019. Judge, Ernst Mayr Best Oral presentation award, Evolution Society, Providence RI, June 2019.
2019. Judge, Best student presentation awards, Great Lakes Evolutionary Genomics Symposium, Buffalo, NY. May 2019.
2019. Participated in SUNY Empire Innovation Professor (EIP) proposal preparation for microbiome researcher, UB Department of Biological Sciences.
2018-2020. Graduate Affairs Committee, Department of Biological Sciences, University at Buffalo. June 2018-January 2020. Coordinating graduate student rotations and presentations.
2018-2019. Search Committee Member, UB Department of Geology, faculty search committee for hydrologist/biogeochemist.
2018. Judge, Student Presentation Awards. International Association of Great Lakes Research Meeting, Toronto, ON.
2018. Session Moderator, Joint Meeting of Ichthyology and Herpetology, Rochester, NY.
2018. College of Arts and Sciences Policy Committee Representative (Department of Biological Sciences), University at Buffalo. July 2018-July 2021.
2017-2018. American Fisheries Society Membership and Early Career Professionals Committee.
2017. Session Moderator, Joint Meeting of Ichthyology and Herpetology, Austin, TX.
2017. Judge, Best Student Oral Presentation in Conservation Biology. Joint Meeting of Ichthyologists and Herpetologists, Austin, TX.
2017. Judge, Best Student Oral Presentation Award. International Association of Great Lakes Research Meeting, Detroit, MI.
2017. Symposium co-organizer, "*Advances in molecular methods and their impact on management of the Great Lakes*." T.J. Krabbenhoft and T.E. Dowling. International Association of Great Lakes Research, annual meeting, Detroit, MI.
2016. Session Moderator, Joint Meeting of Ichthyology and Herpetology, New Orleans, LA.