

CURRICULUM VITAE OF ERIN K GREY, PHD

CURRENT POSITION

ASSISTANT PROFESSOR OF ECOLOGICAL BIOINFORMATICS
UNIVERSITY OF MAINE
SCHOOL OF BIOLOGY AND ECOLOGY &
MAINE CENTER FOR GENETICS IN THE ENVIRONMENT

CONTACT

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EDUCATION

- 2009: PhD Ecology & Evolution, University of Chicago, *Abiotic and biotic drivers of exotic species success in marine fouling communities of Washington, U.S.A.*, advised by Dr. Cathy Pfister
2006: MS Ecology & Evolution, University of Chicago
2003: BA with Honors in Biological Sciences, Minor Spanish, University of Delaware

PREVIOUS POSITIONS

- 2020-21: Associate Professor of Biology, Governors State University
2014-19: Assistant Professor of Biology, Governors State University
2012-14: Postdoctoral Researcher, Notre Dame, Environmental Change Initiative, Dr. David Lodge
2009-11: Postdoctoral Researcher, Tulane University, Ecology & Evolutionary Biology, Dr. Caz Taylor

PEER-REVIEWED PUBLICATIONS

(^uundergraduate student, ^ggraduate student)

- Cangelosi, A, M Balcer, K Prihoda, ^uY Lopez-Camacho, ME Gruwell, IT Knight, EK Grey. 2024. Evaluation of eDNA qPCR monitoring as an early detection tool for a non-native mysid in Great Lakes. *Journal of Great Lakes Research* 102377 <https://doi.org/10.1016/j.jglr.2024.102377>
- ^gLancaster, ER, CL Jerde, AM Mahon, and EK Grey. Time to Invest in the Worst: A call for full genome sequencing of the 100 worst invasive species. 2023. *Frontiers in Environmental Science* 11: 1258880 <https://doi.org/10.3389/fenvs.2023.1258880>
- Ishaq, SL, ^gS Hosler, ^gA Dankwa, ^gP Jekielek, DC Brady, EK Grey, H Haskell, R Lasley-Rasher, K Pepperman, Perry, B Beal, TJ Bowden. 2023. Bacterial community trends associated with sea scallop, *Placopecten magellanicus*, larvae in a hatchery system. *Aquaculture Reports* 32: 101693 <https://doi.org/10.1016/j.aqrep.2023.101693>
- Andres, JA^{*}, P Czechowski^{*}, EK Grey^{*}, ^gM Saebi, ^gK Andres, C Brown, N Chawla, JJ Corbett, R Brys, P Cassey, N Correa, M Deveney, SP Egan, J Fisher, R vanden Hooff, C Knapp, SCY Leong, BJ Neilson, E Paolucci, ME Pfrender, M Pochardt, TAA Prowse, SS Rumrill, C Scianni, F Sylvester, M Tamburri, T Therriault, D Yeo, DM Lodge. 2023. Environment and shipping homogenize beta-diversity among ports. *Molecular Ecology* 32 (23): 6696-6709 <https://doi.org/10.1111/mec.16888>
- ^gBereza, D, EK Grey, N Shenkar. Prioritizing management of high-risk routes and ports by vessel type to improve marine biosecurity efforts. 2023. *Journal of Environmental Management* 336: 117597 <https://doi.org/10.1016/j.jenvman.2023.117597>
- Mahon, AR, EK Grey, CL Jerde. 2022. Integrating invasive species risk assessment into environmental DNA metabarcoding reference libraries. *Ecological Applications* e2730 <https://doi.org/10.1002/eap.2730>
- Wang, Z, ^gM Saebi, EK Grey, J Corbett. 2022. Ballast water-mediated species spread risk dynamics and policy implications to reduce the invasion risk to the Mediterranean Sea. *Marine Pollution Bulletin* 174: 113285 <https://doi.org/10.1016/j.marpolbul.2021.113285>
- Wang, Z, ^gM Saebi, JJ Corbett, EK Grey, ^gSR Curasi. 2021. Integrated biological risk and cost model analysis supports a geopolitical shift in ballast water management. *Environmental Science and Technology* 55(19): 12791-12800. <https://doi.org/10.1021/acs.est.1c04009>
- ^gSaebi, M, ^gJ Xu, ^gS Curasi, EK Grey, N Chawla, DM Lodge. 2020. Network analysis of ballast-mediated species transfer reveals important introduction and dispersal patterns in the Arctic. *Scientific Reports* 10: 19558: <https://doi.org/10.1038/s41598-020-76602-4>
- ^gSaebi, M, ^gJ Xu, EK Grey, DM Lodge, JJ Corbett, N Chawla. 2020. Higher-order patterns of aquatic species

- spread through the global shipping network. *PLoS ONE* 15(7): e0220353
<https://doi.org/10.1371/journal.pone.0220353>
- [§]Giltz, SM, EK Grey, J Gyory, DS Ko, RW Nero, CM Taylor. 2020. Estimating blue crab (*Callinectes sapidus*) larval release sites in the Gulf of Mexico using an oceanographic particle tracking model. *Bulletin of Marine Science* 96(4): 563-576(14) <https://doi.org/10.5343/bms.2018.0075>
- Nong, D, EK Grey, A Countryman, T Warziniack. 2019. Melting Arctic sea ice: Implications for nonindigenous species spread in the United States. *Environmental Science & Policy* 91:81-91
<https://doi.org/10.1016/j.envsci.2018.10.013>
- Deiner, K, A Lacoursière-Roussel, M Renshaw, EK Grey, LE Holman, S Bourne, M Rius, M Seymour, Y Li, J Lopez, M Pfrender, L Bernatchez, DM Lodge. 2018. Detecting marine biodiversity with environmental DNA metabarcoding: the effects of filter type, pore size, and extraction method. *Metabarcoding and Metagenomics 2*: e28963 <https://doi.org/10.3897/mbmg.2.28963>
- Nong, D, A Countryman, T Warziniack, EK Grey. 2018. Arctic Sea routes: Potential new pathways for nonindigenous species spread. *ARCTIC* 71(3): 269-280 <https://doi.org/10.14430/arctic4732>
- Lacoursière-Roussel, A, K Howland, C Hernandez, E Normandeau, EK Grey, O Archambault, K Deiner, D Lodge, N Leduc, L Bernatchez. 2018. eDNA metabarcoding as a new surveillance tool for coastal Arctic biodiversity. *Ecology and Evolution* 8(16): 7763-7777 <https://doi.org/10.1002/ece3.4213>
- Grey, EK, L Bernatchez, P Cassey, K Deiner, M Devenney, KL Howland, A Lacoursière-Roussel, S Chee Yew, Leong, Y Li, M Pfrender, B Olds, ME Pfrender, T Prowse, M Renshaw, DM Lodge. 2018. Effects of sampling effort on biodiversity patterns estimated from environmental DNA metabarcoding surveys. *Scientific Reports* 8: 8843 <https://doi.org/10.1038/s41598-018-27048-2>
- [¶]Spear, MJ, [§]AK Baldrige, EK Grey. 2018. Current and projected distribution of red-eared slider turtles, *Trachemys scripta elegans*, in the Great Lakes Basin. *American Midland Naturalist* 179(2): 191-221 <https://doi.org/10.1674/0003-0031-179.2.191>
- Countryman, A, EK Grey, T Warziniack. 2018. Implications for U.S. trade and nonindigenous species risk resulting from increased economic integration of the Asia-Pacific region. *Society and Natural Resources* 31(8): 942-959 <https://doi.org/10.1080/08941920.2018.1447713>
- Trebitz, A, JC Hoffman, JA Darling, EM Pilgrim, JR Kelly, EA Brown, WL Chadderton, SP Egan, EK Grey, SA Hashsham, KE Klymus, AR Mahon, JL Ram, MT Schultz, CA Stepien, JC Schardt. 2017. Early detection monitoring for aquatic non-indigenous species: Optimizing surveillance, incorporating advanced technologies, and identifying research needs. *Journal of Environmental Management* 202: 299-310 <https://doi.org/10.1016/j.jenvman.2017.07.045>
- Lodge, DM, PW Simonin, SW Burgiel, RP Keller, JM Bossenbroek, CL Jerde, AM Kramer, ES Rutherford, [§]MA Barnes, ME Wittmann, WL Chadderton, [§]JL Apriesnig, D Beletsky, R Cooke, JM Drake, SP Egan, DC Finnoff, CA Gantz, EK Grey, MH Hoff, JG Howeth, RA Jensen, ER Larson, NE Mandrak, DM Mason, FA Martinez, TJ Newcomb, JD Rothlisberger, AJ Tucker, TW Warziniack, and H Zhang. 2016. Risk analysis and bioeconomics of invasive species to inform policy and management. *Annual Review of Environment and Resources*, 41(1): 453-488
<https://doi.org/10.1146/annurev-environ-110615-085532>
- Grey, EK, [§]SM Chiasson, [¶]VT Troeger, [¶]HJ Williams, CM Taylor. 2015. Evaluation of Blue Crab, *Callinectes sapidus*, megalopal settlement and condition during the Deepwater Horizon oil spill. *PLoS One* e0135791 <https://doi.org/10.1371/journal.pone.0135791>
- Egan, SP, EK Grey, B Olds, JL Feder, ST Ruggiero, CE Tanner, DM Lodge. 2015. Rapid molecular detection of invasive species in ballast and harbor water by integrating environmental DNA and Light Transmission Spectroscopy. *Environmental Science & Technology* 49(7): 4113-4121
<https://doi.org/10.1021/es5058659>
- [§]Zeng, Y, KY Chong, EK Grey, DM Lodge, DCJ Yeo. 2015. Disregarding human pre-introduction selection can confound invasive crayfish risk assessments. *Biological Invasions* 17:2373-2385
<https://doi.org/10.1007/s10530-015-0881-8>
- [¶]Jones, BT, J Gyory, EK Grey, [¶]M Bartlein, DS Ko, RW Nero, CM Taylor. 2015. Transport of blue crab larvae in the northern Gulf of Mexico during the Deepwater Horizon oil spill. *Marine Ecology Progress Series* 527:143-156 <https://doi.org/10.3354/meps11238>
- [§]Xu, J, T Wickramaratne, EK Grey, K Steinhäuser, R Keller, J Drake, N Chawla, DM Lodge. 2014

- Patterns of ship-borne species spread: A clustering approach for risk assessment and management of non-indigenous species spread. *KDD'14* <https://doi.org/10.1145/2623330.2623364>
- Ottewell, K, EK Grey, F Castillo, J Karubian. 2012. The pollen dispersal kernel and mating system of an insect-pollinated tropical palm, *Oenocarpus bataua*. *Heredity* 109: 332-339
<https://doi.org/10.1038/hdy.2012.40>
- [§]Grey, EK 2011. Relative effects of environment and direct species interactions on the population growth rate of an exotic ascidian. *Oecologia* 166: 935-947 <https://doi.org/10.1007/s00442-011-1931-2>
- [§]Grey, EK 2010. Effects of large enemies on success of exotic species in marine fouling communities of Washington, USA. *Marine Ecology Progress Series* 411:89-100 <https://doi.org/10.3354/meps08645>
- [§]Grey, EK 2009. Scale-dependent relationships between native richness, resource stability and exotic cover in dock fouling communities in Washington, U.S.A. *Diversity and Distributions* 15:1073-1080
<https://doi.org/10.1111/j.1472-4642.2009.00608.x>
- [§]Grey, EK 2009. Do we need to jump in? A comparison of two survey methods for exotic ascidians. *Aquatic Invasions* 4: 81-86 <https://doi.org/10.3391/ai.2009.4.1.8>
- [§]Park, S, CM Epifanio, [¶]EK Grey. 2004. Behavior of larval *Hemigrapsus sanguineus* (de Haan) in response to gravity and pressure. *Journal of Experimental Marine Biology and Ecology* 307: 197-206
<https://doi.org/10.1016/j.jembe.2004.02.007>

PUBLICATIONS IN REVIEW OR PREPARATION

- [§]Lancaster, ER, EK Grey, D Brady, M Frederich. Squishy and Crunchy Invasive Invertebrates: environmental DNA is not shed equally. *in review at Environmental DNA*
- Morrison, MK, Howland, K, T Barret, Grey, EK, DiBacco, C, A Lacoursière-Roussel. Variation in optimal species eDNA metabarcoding detection windows along the Northwest Atlantic and Eastern Arctic coast. *in prep for October 2024 submission to Environmental DNA*
- Lacoursière-Roussel, A, M Morrison, EK Grey, E Lancaster, K Cazelle, D Beauchesne, K Howland, N Jeffry, C DiBacco, M Kinnison, G Parent, M Chevrinai. GOTeDNA app: Guidance on Optimal Timing for eDNA sampling. *in prep for November 2024 submission to Diversity and Distributions.*
- Grey, EK, L Watling, [§]Huston, G, S France, P Marko. Emperor Seamount eDNA metabarcoding reveals biogeographic patterns in prokaryotes and eukaryotes. *in prep for December submission to a special issue of Deep Sea Research*
- [§]Teye, CK, A Kneidel, J Larsen Tempel, J., L DiNuzio, EK Grey. Fecal metabarcoding reveals prey of migratory Red Knots, *Calidrus canutus*. *in prep for December 2024 submission to Environmental DNA*
- [§]Bolton Jr., D, Peters, R, EK Grey. Comparison of traditional trawl and eDNA surveys for fish and shellfish in the Gulf of Maine. *in prep for summer 2025 submission to ICES Journal of Marine Science.*
- [§]Henry, B, Crane, L, Goldstein, J, Peter, C, Bradt, G., Eberhardt, A., EK Grey. Trophic ecology of range-expanding *Callinectes sapidus* inferred from stable isotopes. *in prep for summer 2024 submission to Estuarine, Coastal and Shelf Science*

OTHER PUBLICATIONS

- [¶]Birchler de Allende and EK Grey (2023): Mitochondrial genomes for three nudibranchs collected from the Gulf of Maine. Accession numbers OQ626204.1, OQ630514.1, OQ596981.1
- Jerde, C., Mahon, A., EK Grey (2022): Established and potentially invasive fish of the Laurentian Great Lakes, Dryad, Dataset, <https://doi.org/10.25349/D9KW49>
- Grey, EK, [¶]M. Franco. COI barcode sequences for 74 *Callinectes* sp. available on the NCBI GenBank (<https://www.ncbi.nlm.nih.gov/genbank/>) accession numbers MK894914 – MK894987.
- EK Grey, *et al.* 2018. Data and R scripts for “Effects of sampling effort on biodiversity patterns estimated from environmental DNA metabarcoding surveys.” *Scientific Reports* available on Dryad at <https://doi.org/10.5061/dryad.40782nd>
- EK Grey, *et al.* 2018. Metabarcoding sequences for 332 port samples available on the NCBI Sequence Read Archive BioProject PRJNA3955904 at <https://www.ncbi.nlm.nih.gov/bioproject/395904>
- Notre Dame Science-Based Tools for Assessing Invasion Risk - Crayfish Risk Assessment Tool freely available online at <http://www.takeaim.org/predict/greatlakes/crayfish/>

- Grey, EK, SM Chiasson, VT Troeger, HJ Williams, CM Taylor. 2015. Data from: Evaluation of Blue Crab, *Callinectes sapidus*, megalopal settlement and condition during the Deepwater Horizon oil spill. Available on Dryad.com <http://dx.doi.org/10.5061/dryad.h58n0>
- Contributor to the EPA Workshop Report *Developing a comprehensive long-term research strategy to support determination of protective ballast water discharge standards*. (2014)
- Grey, EK 2011. *Introduction*. in *Photos for the Gulf: First Anniversary Edition*. Wolff, B. and Hara, B. (eds). CWI Press. Bear, DE USA <http://www.blurb.com/bookstore/detail/2116847#book-settings>
- CABI, 2009. *Botrylloides perspicuus* (original text by Erin Grey, University of Chicago). In: *Invasive Species Compendium*. Wallingford, UK: CAB International. <http://www.cabi.org/isc?compid=5&dsid=108855&loadmodule=datasheet&page=481&site=144>
- CABI, 2009. *Ciona intestinalis* (original text by Erin Grey, University of Chicago). In: *Invasive Species Compendium*. Wallingford, UK: CAB International. <http://www.cabi.org/isc?compid=5&dsid=108855&loadmodule=datasheet&page=481&site=144>
- CABI, 2009. *Ciona savignyi* (original text by Erin Grey, University of Chicago). In: *Invasive Species Compendium*. Wallingford, UK: CAB International. <http://www.cabi.org/isc?compid=5&dsid=108855&loadmodule=datasheet&page=481&site=144>

FELLOWSHIPS & GRANTS

In Review (\$2.4 million)

- NSF CAREER: *Integrating natural cycles into coastal ecology*. 2025-2029. PI Erin Grey, \$1,230,015
- USDA AFRI Tripartite: *Environmental RNA-based assessment of fish health – eRNA-Fish*. 2025-2029. PIs Mike Kinnison, Erin Grey, Anne Parle-McDermott, Paulo Prodohl. \$650,000
- NSF Antarctic Sciences Section: *Spatial scaling of soil fungi in Victoria Land, Antarctica*. 2025-2028. PI Peter Avis, co-PIs Laurie Connell and Erin Grey. \$499,763

Awarded (\$4.3 million)

- 2024: NOAA/NERACOOS: *Multi-Trophic Level Expansion of the Gulf of Maine Marine Biodiversity Observation Network*. 2025-2028. PI Erin Grey, coPI Lee Karp-Boss. \$323,047
- US Department of the Interior Bureau of Ocean Energy Management NT-23-X13: *Zooplankton Ecology of the western Gulf of Maine: trends in abundance and diversity*. 2024-2025. PI Lee Karp-Boss, coPIs Jeffery Runge, Erin Grey. \$235,762
- 2023: Manomet Center for Conservation Science. 2023-2024. *Red Knot diet metabarcoding*. PI Erin Grey. \$32,254
- Maine-eDNA Seed Grant: *Speed-eDNA – Unlocking the potential of eDNA with a robotics to rapid results service*. 2023. PI Erin Grey, coPIs Marissa McMahan, Claudio DiBacco, Kimberly Howland. \$20,000
- 2022: Cooperative Forestry Research Unit: *eDNA for biodiversity and rare species monitoring*. PI Noah Charney, co-PIs Erin Grey, Mark Blomberg: \$76,172
- Massachusetts National Heritage and Endangered Species Program: *Blue-spotted salamander genetics*. PI Noah Charney, co-PI Erin Grey: \$17,364
- 2021: UMaine Arctic Seed Grant: *Data infrastructure & research prioritization for coastal Arctic systems: shipping & environmental DNA*. PIs Erin Grey, Alex Whiting, Gregory Fiske: \$20,000
- Maine-EPSCoR eDNA Seed Grant: *Detecting Atlantic cod spawning with eDNA and eRNA*. PIs Erin Grey, Amber Garber, Graham Sherwood, Aaron Whitman: \$19,926
- 2020: Center for the Junior Year Faculty Research Grant: *How Learning Assistants Facilitate Success in Undergraduate Science Courses*: \$2,500.00
- 2019-24: Subaward – NSF Louis Stokes STEM Pathways and Research Alliances: *The Illinois STEM Pathway and Research Alliance (ILSPRA)*: \$75,000.00
- 2014-20: NSF Coastal SEES award #1427157 *Changes in Ship-borne Introductions of Invasive Species in Coupled Natural-Human Systems*, PI David Lodge, coPIs Nitesh Chawla, Amanda Leister, Thanuka Wickramaratne, James Corbett, and Erin Grey, \$1,699,377
- 2018: Governors State University Research Grant *Transcriptional response to pesticide exposure in Odonate nymphs*. PI Erin Grey, \$3,200
- 2016: Governors State University Research Grant *Estimating Genetic Diversity in House Cats, Felis*

- catus, *using environmental DNA*. PIs John Stechly and Erin Grey, \$3,000
- 2015: Northeast Midwest Institute. *eDNA surveys of Hemimysis anomala*, \$8,823.65
Governors State University Research Grant *Genetic Survey of Dragonflies in the Indiana Dunes National Park and GSU Aquatic Habitats*. PI Erin Grey, \$3,500.
- 2014: National Park Service Mosaics in Science Summer Internship Fellowship *Dragonfly & Damselfly Biodiversity at the Indiana Dunes National Lakeshore*. PIs Joy Marburger & Erin Grey. \$5,000
- 2013: Environmental Change Initiative Grant *Rapid invasive species detection in ballast water by combining environmental DNA with light transmission spectroscopy and metagenetics* PI Scott Egan, coPIs Erin Grey, Brett Olds, \$10,400
- 2012: ^aGulf of Mexico Research Initiative RFP-II, *The Environmental Effects of an Oil Spill on Blue Crabs in the Gulf of Mexico and the Dynamics of Recovery: Integrating Oceanography and Molecular Ecology*, PI Joseph Neigel, co-PI Caz Taylor, \$1,300,000
- 2011: ^aGulf of Mexico Research Initiative RFP-III, *Sampling of Megalopal and Larval Stages of Blue Crabs*, PI Caz Taylor, \$150,000
- 2010: Newcomb College Institute Research Fellowship: \$2,300
^aNSF RAPID Grant, *Deepwater Horizon Oil Spill: Impacts on Blue Crab Population Dynamics and Connectivity*, PI Caz Taylor, \$200,000
^aLouisiana Sea Grant, *Deepwater Horizon Oil Spill Impact on Blue Crab Megalopae*, PI Caz Taylor, \$20,000
- 2009: ^aLong-Term Estuary Assessment Group Grant: PI Caz Taylor, \$17,000
^aNewcomb College Institute Research Fellowship: \$2,600
NSF East Asian Pacific Research Institute Fellowship: \$13,000
- 2008: University of Chicago Hinds Fund: \$2,000
- 2007: Deep Hypha Travel Grant “*Mycorrhizal Fungi on Native and Invasive Seagrasses*”: \$3,500
- 2006: University of Chicago Latin American Field Research Grant: \$650
NSF Doctoral Dissertation Improvement Grant #0608217, *Disentangling abiotic and biotic drivers of exotic species dynamics in marine fouling communities*, PI Cathy Pfister, \$9,550
- 2004: EPA STAR Fellowship. *Employing Food Web Models to Predict Invasion Resistance in Marine Fouling Communities in the Northeast Pacific Coast*, PI Cathy Pfister: \$111,000
- 2003: University of Delaware/Imperial College Exchange Programme Fellowship; \$5,000
- 2002: University of Delaware Undergraduate Research Program Fellowship: \$1,500
Delaware Center for the Inland Bays Fellowship (“Oyster Bed Restoration”): \$1,500
- 2001: NSF Research Experience for Undergraduates Fellowship: PI Charles Epifanio, \$3,000
^aWritten as a postdoc for PI or co-PI Dr. Caz Taylor (not possible to be co-PI as a Tulane postdoc)

TEACHING

- 2024 – present Genetics (BIO-250) – a 3-credit active learning lecture course that explores the fundamentals of genetics. This high enrollment course (~200 students) is a requirement for biology, zoology, and botany majors.
- 2022 – present Invertebrate Zoology (BIO-353) – a 4-credit lecture and laboratory course that explores the evolution, diversity, morphology, life history, and ecology of invertebrates; activities include lectures, labs, field trips, and an independent project.
- 2022 Larval Ecology (BIO-597) – a 1-credit course to discuss the fundamentals and recent development in larval ecology. This course will be taught as-needed at UMaine.
- 2021 Team Science for Maine’s Coastal Macrosystem (EES 590) – a 3-credit course focused on training graduate students from several disciplines in teach science and community outreach to facilitate sustainability of the couple human-coastal systems in Maine
Fundamentals of eDNA Science (EES 590) – a 3-credit course focused on training graduate students from several disciplines in the fundamentals of eDNA, data management, and science communication
- 2020 Graduate Seminar (BIO-7110) – a one-credit course for Biology MS students, aimed at developing writing, analysis, oral presentation, and grant-writing skills

- 2019 – 2020: Mastering College (COUN-1008) – a one-credit course for new freshmen, aimed at preparing them for university success
- 2018 – 2020: Bioinformatics (CHEM 4335/6335, GSU) – A one-credit workshop for upper level and graduate Biology and Chemistry students taught every spring.
- 2015 – 2020: Genetics (BIOL 3340, GSU) – I developed and teach a mid-level lecture course in genetics, focusing on the fundamentals of inheritance and molecular biology once a year.
- 2014 – 2020: General Biology I & II (BIOL 1500/1510, GSU)- I developed and currently teach a Biology fundamentals lecture to first-year Biology majors every semester.
General Biology Laboratory I & II (BIOL 1501/1511, GSU) - I developed and currently teach General Biology laboratory every semester.
Conservation Genetics Lecture & Lab (BIOL 4700/6700, 4701/6701, GSU) – I developed and teach an advanced lecture and laboratory course in conservation genetics and involving independent research projects every other year.
- 2014-16: Animal Diversity Lecture and Laboratory (BIOL 3320/3321, GSU) – For three years I taught a mid-level biology majors lecture and laboratory course that investigates of each major animal phyla once a year.
- 2012: Guest Lecturer for Introductory Biology, Indiana University Northwest
- 2011: Guest Lecturer for Environmental Biology, Indiana University Northwest
 Guest Lecturer for Global Environmental Change, Indiana University Northwest
 Capstone Thesis/Independent Study advisor for three Tulane undergraduates
 Guest Lecturer for Quantitative Ecology, Tulane University
- 2010: Instructor, BIO 6081 Coastal Wetlands in Dynamic Environments, Tulane University
 Guest Lecturer for Invertebrate Zoology, Tulane University
 Guest Lecturer for Computational Methods in Ecology & Evolution, Tulane University
- 2009: Guest Lecturer for Introductory Biology, Indiana University Northwest
 T.A. for Biological Invasions, University of Chicago
- 2008: T.A. for Modern Carbonates Field Course, University of Chicago
- 2007: T.A. for Biological Diversity, University of Chicago
 T.A. for Environmental Ecology, University of Chicago
- 2006: T.A. for Marine Ecology, University of Chicago
- 2001: T.A. for Evolutionary Genetics Lab, University of Delaware

FIRST-AUTHOR ORAL PRESENTATIONS

- Environmental DNA early-warning systems for biofouling: promises and pitfalls.* National Shellfisheries Association meeting, March 2024, Charlotte, NC, USA
- What we do and don't know about Blue crab dispersal.* (invited) Gulf of Maine Blue Crab Working Group. April 2024, Wells, ME, USA
- Invertebrate biodiversity in a bottle: a pilot study of Maine Lakes.* Maine Lake Monitoring Summit. April 2024, Augusta, ME, USA
- Aquatic "fungi" biodiversity across watersheds in Maine: Insights from a three-year multi-method survey.* Canadian Meteorological and Oceanographic Society Annual Meeting, October 2023, St. Johns, Newfoundland, CAN
- Environment, shipping, and their interaction homogenize eukaryotic communities across commercial ports.* Ecological Society of America Annual Meeting, August 2023 in Portland, OR, USA
- Data infrastructure and research prioritization for coastal Arctic: shipping and environmental DNA,* invited UMaine Arctic Seminar, November 2021, zoom
- eDNA as a Catalyst for Ecological Forecasting.* (invited) Bigelow Laboratory Seminar, September 2021, Boothbay, ME, USA
- Monitoring Arctic biodiversity with eDNA.* (invited) UMaine Arctic Seminar, May 2021, Orono, ME, USA
- Evaluating Networks of Ship-borne Non-indigenous Species Spread* in symposium “Uniting Transport, Climate Change, and Trade to Forecast Biological Invasions”. AAAS Annual Meeting, February 2020, Seattle, WA, USA
- A multi-taxa eDNA survey of Calumet marshes.* Midwest Fish and Wildlife Conference. January 2020, Springfield, IL, USA

An eDNA survey of aquatic invasive species in Calumet marsh restorations. Great Lakes Innovative Stewardship Through Education Network Symposium. 2019. Indiana Dunes State Park, IN USA.

Testing global ship-born species spread models with an eDNA metabarcoding survey. International Conference on Aquatic Invasive Species. 2019. Montreal, Quebec, CAN

A global eDNA metabarcoding survey of ports allows testing of ship-borne species spread models. Marine and Freshwater Invasive Species. 2018. Beijing, China

Environmental DNA in ports: The known, the unknown, and the non-indigenous. (invited) Ecological Society America Meeting. 2016. Fort Lauderdale, FL, USA

Surveying dragonfly biodiversity at the Indiana Dunes National Lakeshore. Indiana Dunes Science Conference. 2016 Chesterton, IN, USA

Dragonfly biodiversity: Comparing traditional and genetic survey methods. Governors State University Research Day. 2016 University Park, IL, USA

EK Grey. *Predicting the spread of ship-born non-indigenous species using network theory and environmental DNA.* (invited) University of Illinois Department of Natural Resources and Environmental Sciences Seminar. 2015 Urbana, IL, USA

A metagenetic survey of invertebrate DNA in the Port of Chicago. (invited) Workshop on Advancing the Science of Aquatic Invasive Species Monitoring. 2014. U.S. EPA Mid-Continental Ecology Division, Duluth, MN, USA

Notre Dame STAIRcrayfish. Great Lake Management Transition Board Fall Meeting. 2014. Shedd Aquarium, Chicago, IL, USA

Global patterns of nonindigenous species spread via biofouling. 17th International Congress on Marine Corrosion and Fouling, 2014. National University of Singapore, Singapore

Forecasting Ship-borne Biological Invasions. Notre Dame Graduate Student Union and Office for Post doctoral Scholars Sixth Annual Research Symposium. 2014 Notre Dame, IN USA (2nd place “Best Postdoc Presentation”)

A herpetofauna risk assessment for the Great Lakes Basin. International Association for Great Lakes Research Conference. 2013. West Lafayette, IN, USA

Prevention and early detection of new Great Lakes invaders: an ecological toolkit (invited) Purdue University Calumet Science Seminar. 2013. Hammond, IN, USA

Settlement of Blue Crab megalopae before, during and after the Deepwater Horizon oil spill. Gulf of Mexico Oil Spill & Ecosystem Science Conference. 2013. New Orleans, LA, USA

Aquatic invasive species – Tools for prevention and surveillance. Linking Research to Management at Indiana Dunes National Lakeshore in a Rapidly Changing Environment. 2013. Gary, IN, USA

Insights into Blue crab larval ecology from the Deepwater Horizon oil spill. Ecological Society of America Meeting. 2011 Austin, TX, USA

Assessing the effects of the Deepwater Horizon oil spill on Blue crab megalopae. Benthic Ecology Annual Meeting. 2011 Mobile, AL, USA

Spatially-explicit modeling of blue crabs in the Gulf of Mexico. Tulane Center for Computational Sciences Seminar. 2010 New Orleans, LA USA

Population ecology of Gulf blue crabs. (invited) Long-Term Estuary Assessment Group Annual Meeting. 2010. Houma, LA USA

Population ecology of exotic sea squirts & blue crabs. Tulane Ecology & Evolutionary Biology Seminar. 2010. New Orleans, LA USA

It's a small world - How two JSPS/NSF fellows joined forces for research and adventure in Japan, (invited) JSPS Summer Research Meeting. 2009. Tokyo, Japan

Abiotic and biotic effects on Botrylloides violaceus success in Washington, U.S.A. Western Society of Naturalists Meeting. 2008. Vancouver, BC Canada

Abiotic and biotic drivers of exotic ascidian population in the northeast Pacific. Ecological Society of America Annual Meeting. 2008. Milwaukee, WI USA

Fungi associated with native and invasive seagrasses in WA, U.S.A. Asian Mycology Congress & Xth International Marine & Freshwater Mycology Symposium. 2007. George Town, Malaysia

The invasion of a colonial ascidian into marine fouling communities: Patterns and processes. University of Chicago Natural History Seminar. 2007. Chicago IL USA

Quantifying the relative contributions of abiotic versus biotic effects on the success of an exotic colonial ascidian. (invited) Bamfield Marine Station Seminar. 2006. Bamfield, BC Canada

OUTREACH

- 2024: K-12 eDNA Metabarcoding Program – I helped establish this K-12 outreach program in 2021 and it currently reaches 20 schools and >600 students)
Maine Fishermen’s Forum – I helped develop and “eDNA Workshop” and participated as a panelist
Maine Lakes Time Series Data Working group – I run tutorials on GitHub and time series statistics to various state, academic, and non-profit lake scientists through monthly group zooms
Maine Coastal Mapping Initiative consultant – I help them with their small DNA lab for genetically barcoding specimens and with general invertebrate identification issues
- 2021: Board Member, Charter School of the Dunes (since 2019)
Board Member, Miller Little League (since 2018)
Parent Advisory Council president, Charter School of the Dunes (since 2017)
- 2020: Indiana Dunes National Park iSWOOP program
- 2019: GSU Summer STEAM Camp workshop (“Pond Invertebrates”) and Field Museum trip
- 2018: Miller Little League T-ball coach (2017 - 2018)
Skokie Library public workshop “Invasive Species Forensics in the Great Lakes”
- 2017: GSU STEAM camp workshops “Aquatic Ecology” & “Proteomics” for school kids
Miller Spotlight Youth Programming committee member (2015-2017)
- 2016: Calumet Regional Science Fair judge, K-12 students
- 2015: Tardigrade workshop, Miller Kids Co-op in Gary, IN USA (home-schooler ages 4-14)
GSU STEM Camp Workshop “CSI Invertebrates” for school kids
Expanding Your Horizons “CSI Invertebrates” workshop for under-privileged girls
- 2014: Environmental Protection Agency Metagenetics Workshop participant
- 2013: Great Lakes Alliance Science Seminar: “Invasive species risk assessments”
- 2012: Coastal and Estuarine Research Facility K-12 hands-on estuary education program (since 2010)
Environmental Protection Agency Ballast Water Workshop participant
BioBlitz volunteer, Spicer Lake Park, Indiana
Calumet Regional Science Fair Judge
Red Bank Elementary mentoring program in West Columbia, South Carolina, USA
- 2011: Louisiana Marine Research Consortium Open House: “Blue crabs in Louisiana”
Louisiana Blue Crab Task Force research presentation
Research Fellow, Newcomb College Institute (since 2011)
- 2010: Graduate Women in Science fellowship reviewer
Sally Ride Science Fair workshop on “Evolution”
- 2008: Science advisor to Washington’s Tunicate Response Advisory Committee (since 2005)
Biology Club of Indiana University Northwest seminar - “My path to a STEM career”
- 2006: BioOutreach- assisted south-side Chicago high-school teachers in developing science labs
Invasive Sea Squirt Workshop presented to various clubs throughout Washington state (since 2005)
- 2003: Secretary for the University of Delaware’s Habitat for Humanity Chapter (2002-2003)
Volunteer at the UD College of Marine Studies Annual Coast Days event (2002-2003)

PROFESSIONAL AFFILIATIONS & ACTIVITIES

Panelist – NSF, Ford Fellowship

Member of the *Ecological Society of America* | *Benthic Ecology Society* | *JSPS US Alumni Association* | *Illinois State Academy of Science* | *Sigma Xi* | *World Dragonfly Association* | *American Society of Limnology and Oceanography* | *Maine Entomological Society* | *Local Contexts* | *Larval Biology Society*

Advisory Board Member of the journal *Environmental DNA* since January 2019

Reviewer for *Ecology* | *Ecology Letters* | *Marine Ecology Progress Series* | *Marine Pollution Bulletin* | *Functional Ecology* | *Aquatic Invasions* | *Estuarine, Coastal and Shelf Science* | *Proceedings of the National Academy of Sciences B* | *PLoS ONE* | *Journal of Animal Ecology* | *Diversity & Distributions* | *Biological Invasions* | *Journal of Great Lakes Research* | *Evolutionary Applications* |

UNIVERSITY SERVICE

- 2023-present: SBE Policy Committee, UMaine School of Biology and Ecology
SBE DEIJ Committee, UMaine School of Biology and Ecology
- 2022: Graduate Committee, UMaine School of Biology and Ecology
- 2021: Co-Supervisor of the Center for the Junior Year Peer Mentor (since 2019)
Faculty advisor for the Student Sustainability Club (since 2019)
Coordinator of the Illinois Louis Stokes Alliance for Minority Participation at GSU (since 2016)
Illinois Articulation Initiative Biology Panel member (since 2015), Co-Chair (since 2016)
Institutional Animal Care and Use Committee at GSU (since 2015), Co-chair (2017), Chair (2019)
Grants Planning Committee at GSU (since 2015)
- 2020: Search Committee: Information Technology Tenure-Track faculty (Chair)
Search Committee: DMST Chair
- 2019: Retention to Graduation faculty rep, Transfer student sub-committee co-chair (since 2017)
Search Committee: Assistant Director for Research Compliance
Search Committee: Visiting Professor of Botany
- 2018: Search Committee: Assistant Director Office of Sponsored Research & Family Development Center
- 2017: Search Committee: Dean of the College of Arts and Sciences
- 2016: Search Committee: Interdisciplinary Studies Faculty
- 2015: Search Committee: Anthropology Faculty
Search Committee: Physiology Adjunct Faculty
Search Committee: Chair of the Division of Chemistry & Biological Sciences
- 2013: Search Committee: GIS Professional (University of Notre Dame)
Undergraduate Research Coordinator for David Lodge's Lab (University of Notre Dame)
Environmental Change Initiative Seminar Series committee (University of Notre Dame)

OTHER SKILLS

Proficiency in R, Matlab, Python, Mathematica; familiarity with C++ and Perl languages
Proficiency with LaTeX, Microsoft Office, OpenOffice, Filemaker Pro, MySQL
Proficiency in various geographic information systems (GIS) and species distribution modeling platforms
Proficiency with molecular biology (DNA/RNA extractions, qPCR, Sanger sequencing, Illumina sequencing, nanopore sequencing)
Proficiency with several bioinformatics applications (Qiime, BioPython, SPAdes, Geneious)
Professional SCUBA diving certification (PADI Divemaster level)

REFERENCES

- REFERENCE I - PHD THESIS ADVISOR:** Dr. Cathy Pfister, Professor of Ecology & Evolution, University of Chicago, Email: cpfister@uchicago.edu, Phone: +1 (773) 834-0071
- REFERENCE II - POSTDOCTORAL ADVISOR:** Dr. Caz Taylor, Associate Professor of Ecology & Evolutionary Biology, Tulane University, Email: caz@tulane.edu, Phone: +1 (504) 865-5172
- REFERENCE III – POSTDOCTORAL ADVISOR:** Dr. David Lodge, Director of the Atkinson Center for a Sustainable Future and Professor of Ecology & Evolutionary Biology, Cornell University, Email: dml356@cornell.edu, Phone: +1 (607) 255-0963
- REFERENCE IV – PREVIOUS SUPERVISOR:** Dr. Timothy Gsell, Professor & Biology Program Coordinator, Governors State University, Email tgsell@govst.edu, Phone: +1 708-534-4921