

ELIZABETH ANDRUSZKIEWICZ ALLAN

Postdoctoral Investigator
Department of Applied Ocean Physics and Engineering
Woods Hole Oceanographic Institution (WHOI)
Bigelow 407, MS #9, Woods Hole, MA 02543

Tel: (860) 324-5620
Fax: (508) 457-2194
Email: eallan@whoi.edu
<http://www.whoi.edu/staff/eallan>

EDUCATION

2019 Ph.D., Department of Civil and Environmental Engineering, Stanford University, USA
2015 M.S., Department of Civil and Environmental Engineering, Stanford University, USA
2014 B.S., Department of Civil and Environmental Engineering, University of Notre Dame, USA

RESEARCH AND TECHNICAL EXPERIENCE

2019 – Present Postdoctoral Investigator, Department of Applied Ocean Physics and Engineering, WHOI
2014 – 2019 Graduate Student Researcher, Civil and Environmental Engineering Department, Stanford University
2013 Undergraduate Student Researcher, Department of Biological Systems Engineering, Virginia Tech
2012– 2014 Undergraduate Student Researcher, Department of Civil and Environmental Engineering, University of Notre Dame

TEACHING EXPERIENCE

2018 Teaching Assistant, Department of Civil and Environmental Engineering, Stanford University: Coastal Contaminants (CEE 272)
2017 Teaching Assistant, Department of Civil and Environmental Engineering, Stanford University: Environmental Health Microbiology (CEE 374P)

PEER-REVIEWED PUBLICATIONS

- 2020 **E. A. Allan**, W. G. Zhang, A. C. Lavery, A. F. Govindarajan. 2020. Environmental DNA Shedding and Decay Rates from Diverse Animal Forms and Thermal Regimes. *Environmental DNA*, 3:141. [Link](#).
- A. Djurhuus, C. J. Closek, R. P. Kelly, K. J. Pitz, R. P. Michisaki, H. A. Starks, K. R. Walz, **E. A. Andruszkiewicz**, E. Olesin, K. Hubbard, E. Montes, D. Otis, F. E. Muller-Karger, F. P. Chavez, A. B. Boehm, M. Breitbart. 2020. Environmental DNA reveals seasonal shifts and potential interactions in a marine community. *Nature Communications*, 11:254. [Link](#).
- 2019 C. J. Closek, J. A. Santora, H. A. Starks, I. D. Schroeder, **E. A. Andruszkiewicz**, K. M. Sakuma, S. J. Bograd, E. J. Hazen, J. C. Field, A. B. Boehm. 2019. Marine vertebrate biodiversity and distribution within the central California Current using environmental DNA (eDNA) metabarcoding and ecosystem surveys. *Frontiers in Marine Science*, 6:732. [Link](#).
- E. A. Andruszkiewicz**, J. R. Koseff, O. B. Fringer, N. T. Ouellette, A. B. Lowe, C. A. Edwards, A. B. Boehm. 2019. Modeling environmental DNA transport in the coastal ocean using Lagrangian particle tracking. *Frontiers in Marine Science*, 6:477. [Link](#).
- N. K. Truelove*, **E. A. Andruszkiewicz***, B. A. Block. 2019. A rapid eDNA method for detecting white sharks in the open ocean. *Methods in Ecology and Evolution*, 12: e0185043-e0185048. *Authors contributed equally to this manuscript. [Link](#).

- 2017 **E. A. Andruszkiewicz**, L. M. Sassoubre, A. B. Boehm. 2017. Persistence of marine fish environmental DNA and the influence of sunlight. *PLOS ONE*, 12(9): e0185043. [Link](#).
- E. A. Andruszkiewicz**, H. A. Starks, F. P. Chavez, L. M. Sassoubre, B. A. Block, A. B. Boehm. 2017. Biomonitoring of marine vertebrates in Monterey Bay using eDNA metabarcoding. *PLOS ONE*, 12(4): e0176343. [Link](#).
- A. J. Shogren, J. L. Tank, **E. A. Andruszkiewicz**, B. P. Olds, A. R. Mahon, C. L. Jerde, D. Bolster. 2017. Controls on eDNA movement in stream: Transport, Retention, and Resuspension. *Nature Scientific Reports*, 7(5065). [Link](#).
- A. B. Boehm, N. S. Ismail, L. M. Sassoubre, **E. A. Andruszkiewicz**. 2017. Oceans in peril: Grand challenges in applied water quality research for the 21st century. *Environmental Engineering Science*, 34(1), 3-15. [Link](#).
- 2016 C. L. Jerde, B. P. Olds, A. J. Shogren, **E. A. Andruszkiewicz**, A. R. Mahon, D. Bolster, J. L. Tank, 2016. Influence of stream bottom substrate on retention and transport of vertebrate environmental DNA. *Environmental Science and Technology*, 50 (16), 8770-8779. [Link](#).
- A. J. Shogren, J. L. Tank, **E. A. Andruszkiewicz**, B. P. Olds, C. L. Jerde, D. Bolster, 2016. Modelling the transport of environmental DNA through a porous substrate using continuous flow-through column experiments. *Journal of the Royal Society Interface*, 13 (119), 2016020. [Link](#).

OTHER PUBLICATIONS AND TECHNICAL RESOURCES

- 2020 UNIG (U.S.–Norway Intergovernmental Group on eDNA Implementation for Fisheries Stock Assessments and Management). Implementation of Environmental DNA (eDNA) as a Tool for Ecosystem-Based Fisheries Management. U.S. Department of Commerce, NOAA White Paper NMFS-NWFSC-WP-2020-01. [Link](#).

PRESENTATIONS

- 2020 **E. A. Allan**, W. G. Zhang, A. C. Lavery, A. F. Govindarajan, *Interpreting environmental DNA signals: Insights from eDNA shedding and decay rates from diverse animal forms*, Ocean Sciences Meeting: Oral Presentation, February 2020
- 2019 **E. A. Allan**, W. G. Zhang, A. C. Lavery, A. F. Govindarajan, *eDNA in the OTZ: Interpreting environmental DNA signals in the Ocean Twilight Zone*, Woods Hole Oceanographic Institution Applied Ocean Physics and Engineering Department Seminar: Oral Presentation, October 2019
- 2018 **E. A. Andruszkiewicz**, O. B. Fringer, J. R. Koseff, N. T. Ouellette, A. B. Lowe, C. A. Edwards, A. B. Boehm, *Investigating environmental DNA transport in the coastal ocean using a numerical ocean model and Lagrangian particle tracking*, National Conference on Marine Environmental DNA: Oral Presentation, November 2018 (Invited Speaker)
- E. A. Andruszkiewicz**, L. S. Sassoubre, A. B. Boehm, *Persistence of environmental DNA in marine waters*, USA – Norway eDNA Science Consortium: Oral Presentation, October 2018 (Invited Speaker)
- E. A. Andruszkiewicz**, O. B. Fringer, J. R. Koseff, N. T. Ouellette, A. B. Lowe, C. A. Edwards, A. B. Boehm, *Modeling environmental DNA transport in the coastal ocean using Lagrangian particle tracking*, AFS Annual Meeting 2018: Oral Presentation, August 2018
- 2017 **E. A. Andruszkiewicz**, H. A. Starks, F. P. Chavez, L. M. Sassoubre, B. A. Block, A. B. Boehm, *Biomonitoring of marine vertebrates in Monterey Bay using eDNA metabarcoding*, ASLO 2017: Mountains to Sea: Oral Presentation, March 2017

- 2016 **E. A. Andruszkiewicz**, H. A. Starks, L. M. Sassoubre, B. A. Block, A. B. Boehm, *Environmental DNA metabarcoding to identify marine vertebrates in Monterey Bay*, Stanford BioX Interdisciplinary Initiatives Symposium: Poster, August 2016
- E. A. Andruszkiewicz**. *TCGAGTTCA = Great White Shark? Using Environmental DNA (eDNA) to Track Vertebrate Marine Species*, Stanford Environmental Engineering and Science Seminar Series, March 2016
- 2014 **E. A. Andruszkiewicz**, A. Shogren, D. Bolster, J. Tank, *Modeling the spread of environmental DNA passing through porous media*, International Society for Porous Media Conference: Poster, May 2014

AWARDS

- 2016 Science to Achieve Results (STAR) Fellowship, Environmental Protection Agency
- 2016 Excellence in Partnering Award, National Oceanographic Partnership Program
- 2015 Charles H. Leavell Graduate Fellowship, Stanford University
- 2014 Neukermans Family Graduate Fellowship, Stanford University
- 2014 The Sydney Kelsey Outstanding Scholar Award, University of Notre Dame
- 2013 National Science Foundation Research Experience for Undergraduates, Virginia Tech

PROFESSIONAL ACTIVITIES

- 2020 - present Co-chair, Room Naming Working Group, WHOI
- 2019 - present Secretary of Post-Doctoral Association, WHOI
- 2019 - present Post-Doctoral Representative on Women's Committee, WHOI
- 2019 Invited keynote speaker at World Aquaculture and Fisheries Conference
- 2019 Invited speaker at 2019 Marine Molecular Ecology Gordon Research Seminar
- 2018 Invited researcher on Schmidt Ocean Institute Voyage to the White Shark Café
- 2018 Selected participant for Stanford Woods Institute Rising Environmental Scholar (RELPS)
- 2016 Committee Member of Stanford University Civil and Environmental Engineering and Science Seminar Series
- 2015 – 2019 Member of NOAA/NASA/BOEM funded Marine Biodiversity Observation Network (MBON) grant
- 2013 – 2014 President of Chi Epsilon National Honors Society, University of Notre Dame

CRUISE PARTICIPATION

- 2020 11 March 2020 – 16 March 2020, Woods Hole Oceanographic Institution (WHOI) Ocean Twilight Zone (OTZ) cruise on *R/V Neil Armstrong* from Woods Hole, MA to Woods Hole, MA (AR43). Collected water samples from CTD and *Mesobot*, an untethered, autonomous vehicle for eDNA analysis. Took tissue samples from gelatinous organisms collected in net tows for genetic analysis.
- 2018 19 April 2018 – 20 May 2018, Schmidt Ocean Institute White Shark Café Cruise on *R/V Falkor* from Honolulu, HI to San Diego, CA. Sampling water by CTD and ROV to filter for eDNA analysis. Performing eDNA extractions, amplification, and sequencing on board using an Oxford Nanopore MinIon sequencer. Identified the presence of white shark (*Carcharodon carcharias*) within 48 hours of water collection. See Truelove, et al. 2019 for results (shared first authorship).
- 2016 31 May 2016 – 7 June 2016, NOAA Rockfish Recruitment and Ecosystem Assessment Survey (RREAS) cruise on *R/V Reuben Lasker* from Bodega Bay, CA to Avila, CA. Sampling water from CTD casts to compare eDNA results of biodiversity to net tows. See Closek, et al. 2019 for results (co-author).
- 2015 25 August 2015, Monterey Bay Aquarium Research Institute (MBARI) cruise on *R/V Rachel Carson* to Station M1 from Moss Landing, CA. Sampling water for eDNA analysis to compare filter and extraction methods.

2015 3 August 2015, Monterey Bay Aquarium Research Institute (MBARI) cruise on *R/V Rachel Carson* to Station M1 from Moss Landing, CA. Sampling water for eDNA analysis to compare volume of water filtered.

OUTREACH

2020 JASON Learning STEM Career Role Model, Falmouth, MA
2020 East Bay Educational Collaborative Teacher Workshop, Warren, RI
2018 Bay Area Science Festival, San Francisco, CA
2016 Summer Engineering Academy, Stanford University
2016 – 2018 Tutor, Boys and Girls Club of the Peninsula, Menlo Park, CA
2015 Summer Engineering Academy, Stanford University
2013 Science Sunday, University of Notre Dame Linked Experimental Ecosystem Facility
2011 – 2014 Tutor, Boys and Girls Club, Mishawaka, IN

REVIEWED MANUSCRIPTS FOR

Conservation Genetics Resources
Diversity and Distributions
Environmental Science and Technology
Environmental Science and Technology Letters
Environmental DNA
Fish and Fisheries
Frontiers in Marine Science
Marine Environmental Research
PLOS ONE