Isaac Rosenthal

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Education

University of Massachusetts Boston, Boston, MA
PhD candidate, Environmental Science, Advisor: Jarrett Byrnes — Expected 2023

Northeastern University, Boston, MA
Bachelor of Science, Biology — Graduated: 01/2014

- Minor: Marine Biology

Invited Presentations

2019. **Rosenthal, I.S.,** Byrnes, J.E.K, Cavanaugh, K.C., Bell, T.W., Haupt, A.J, Trouille, L., Rassweiler, A., Pérez–Matus, A., Assis, J., Butler, C., and Harder, B. Floating Forests: Lessons Learned in Pursuit of Citizen Science. *The Nature Conservancy*. San Francisco, California.

2020. **Rosenthal, I.S.,** Byrnes, J.E.K, Cavanaugh, K.C., Bell, T.W., Haupt, A.J, Trouille, L., Rassweiler, A., Pérez–Matus, A., Assis, J., Butler, C., and Harder, B. Floating Forests: A Brief Overview. Landsat Science Team Meeting. Phoenix, Arizona

Presentations

2016. **Rosenthal, I.S.,** Byrnes, J.E.K., Cavanaugh, K.C., Bell, T.W., Harder, B., Haupt, A.J., Rassweiler, A., Trouille, L., Pérez–Matus, A., and Assis, J. Floating Forests: Validation of a Citizen Science Effort to Answer Global Ecological Questions. *Western Society of Naturalists*. Monterey, California

2017. **Rosenthal, I.S.,** Byrnes, J.E.K., Cavanaugh, K.C., Bell, T.W., Harder, B., Haupt, A.J., Rassweiler, A., Trouille, L., Pérez–Matus, A., and Assis, J. Floating Forests: Validation of a Citizen Science Effort to Answer Global Ecological Questions. *5th Annual Environmental Research Colloquium*. Boston, Massachusetts

2018. **Rosenthal, I.S.,** Byrnes, J.E.K., Cavanaugh, K.C., Haupt, A.J., Trouille, L., Bell, T.W., Rassweiler, A., Pérez–Matus, A., and Assis, J. Floating Forests: Validation of a Citizen Science Effort to Answer Global Ecological Questions. *6th Annual UMass Boston Environmental Research Colloquium*. Boston, Massachusetts

2018. **Rosenthal, I.S.,** Byrnes, J.E.K., Cavanaugh, K.C., Haupt, A.J., Trouille, L., Bell, T.W., Rassweiler, A., Pérez–Matus, A., and Assis, J. Floating Forests: Validation of a Citizen Science Effort to Answer Global Ecological Questions. *American Geophysical Union*. New Orleans, Louisiana

2019. **Rosenthal, I.S.,** Byrnes, J.E.K., Cavanaugh, K.C., Bell, T.W., Harder, B., Haupt, A.J., Rassweiler, A., Trouille, L., Pérez–Matus, A., and Assis, J. Floating Forests: Validation of a Citizen Science Effort to Answer Global Ecological Questions. *7th Annual UMass Boston Environmental Research Colloquium*. Boston, Massachusetts

2020. **Rosenthal, I.S.,** Byrnes, J.E.K., Cavanaugh, K.C., Bell, T.W., Harder, B., Haupt, A.J., Rassweiler, A., Trouille, L., Pérez–Matus, A., and Assis, J. Floating Forests: Validation of a Citizen Science Effort to Answer Global Ecological Questions. 8th *Annual UMass Boston Environmental Research Colloquium*. Boston, Massachusetts

2020**. Rosenthal, I.S.,** Simon, M., Trouille, L., Cavanaugh, K.C., and Byrnes, J.E.K. Kelp from Space: A Citizen Science Powered Classroom Experience. *American Geophysical Union.* Virtual

2021. **Rosenthal, I.S.,** Simon, M., Trouille, L., Cavanaugh, K.C., and Byrnes, J.E.K. Kelp from Space: A Citizen Science Powered Classroom Experience. *UMass Boston Earth Day Symposium*. Virtual

2021**. Rosenthal, I.S.,** Simon, M., Trouille, L., Cavanaugh, K.C., and Byrnes, J.E.K. Kelp from Space: A Citizen Science Powered Classroom Experience. *American Geophysical Union.* Virtual

2022**. Rosenthal, I.S.,** Simon, M., Trouille, L., Cavanaugh, K.C., and Byrnes, J.E.K. Kelp from Space: A Citizen Science Powered Classroom Experience. *Benthic Ecology Meeting.* Portsmouth, New Hampshire

2022**. Rosenthal, I.S.,** Simon, M., Trouille, L., Cavanaugh, K.C., and Byrnes, J.E.K. Kelp from Space: A Citizen Science Powered Classroom Experience. *C*Sci,* Virtual

Publications and Preprints

Simon, M. N, Prather, E.E., **Rosenthal, I.S.**, Trouille, L., Cassidy, and M., Hammerman, J. A New Curricular Model for Improving Students' Data Literacy and Self-Efficacy in the General Education Online STEM Classroom. *Astronomy Education Journal, in press*

Rosenthal, I.S., Simon, M.N., Byrnes, J.E.K., and Trouille, L. Kelp from Space: A Citizen Science Powered Classroom Experience. *Journal of Geophysical Education, in review*

Houskeeper, H. F., **Rosenthal, I.S.**, Cavanaugh, K.C., Pawlak, C., Trouille, L., Byrnes, J.E.K., Bell, T.W., and Cavanaugh, K.C. (2021) Automated satellite remote sensing of giant kelp at the Islas Malvinas or Falkland Islands. *PLOS ONE* 17(1): e0257933. https://doi.org/10.1371/journal.pone.0257933

Rosenthal, I.S., Byrnes, J.E.K., Cavanaugh, K.C., Bell, T.W., Harder, B., Haupt, A.J., Rassweiler, A., Pérez–Matus, A., Assis, J,. Swanson, S., Boyer, A., McMaster, A., and Trouille, L. Floating Forests: Quantitative Validation of Citizen Science Data Generated from Consensus Classifications. *Preprint arXiv:1801.08522, to be submitted 2023*

Grants and Awards

2020. Woods Hole Sea Grant. $5,000. **Online Conversations for Equity, Action, and Networking (OCEAN)**. Co-PI

Relevant Work History and Research Experience

University of Massachusetts Boston, Boston, MA — September 2015-Present
PhD Candidate, Supervisor: Jarrett Byrnes

Field Research

- Assisted with Kelp Ecosystem Ecology Network (KEEN) field surveys
- Organized small dive teams (2-6 people) to execute boat-based SCUBA surveys
- Provided technical support for boat operations

Citizen Science Research

- Member of science team for the Floating Forests citizen science project (www.floatingforests.org)
- Interacted with Floating Forests online community via forum and blog posts
- Validated accuracy of citizen science classifications of kelp in satellite photographs
- Developed, piloted, and evaluated a virtual undergraduate lab activity that leverages Floating Forests as an authentic research experience in the classroom.

Woods Hole Oceanographic Institution, Woods Hole, MA — January 2013-June-2013
Co-op Student, Supervisors: Donald Anderson, Bruce Keafer

- Worked primarily in the Environmental Sample Processor (ESP) lab to model and predict harmful *Alexandrium fundyense* blooms in the Gulf of Maine using molecular probes and fluorescent microscopy
- Assisted in deployment, data analysis, and recovery of ESPs in the Gulf of Maine, working off of the R/V Tioga

Northeastern University Marine Science Center, Nahant MA — June 2012 – August 2012
Research Assistant, Supervisor: Matthew Bracken

- Investigated causes and effects of invasive algae (*Heterosiphonia japonica)*

- Investigated nitrogen uptake rates of macroalgal assemblages
- Participated in long term field observations, documenting percent cover of algal species

Roaring Brook Nature Center, Canton, CT June 2008- September 2015

Head Teacher

- Developed and ran vacation nature/science camp programming for K-12 students
- Outreach: school and library programs, animal demonstrations, guided hikes
- Other staff duties included animal husbandry, wildlife rehabilitation, wildlife surveys, and exhibit setup

Teaching Experience

Introduction to Environmental Science: Laboratory Instructor	Fall 2016 & Fall 2016
Introduction to Environmental Policy and Management: Teaching Assistant	Fall 2017
Intro to Data Science for Biology: Teaching Assistant	Spring 2018
Guest Lecturer: Advanced Data Analysis for Biology	Fall 2019, Fall 2022
Structural Equation Modeling for Ecology and Evolutionary Biology (virtual): Teaching Assistant	Winter 2020
Guest Lecturer: Remote Sensing	Fall 2020
Tutor: Data Science, Statistics, R programming	Spring 2020-present

Service and Leadership

Student Co-Chair – Advanced Statistics Collaborative September 2019 - June 2022

- Organized and facilitated weekly interdepartmental statistical consulting meetings
- Hosted visiting speakers for workshops and seminars
- Taught monthly R and statistics workshops

Cofounder - School for the Environment Graduate Student Anti-Racism Task Force September 2020 - Present

- Co-facilitated weekly team meetings
- Co-hosted four virtual seminars highlighting early career scientists of color. These seminars included a safe space for undergraduates to meet our speakers, as well as development of podcasts that spotlight the speakers and are intended for a general audience.
- Co-hosted monthly interdepartmental discussions regarding systemic racism
- Secured cultural sensitivity training for teacher's assistants
- Worked with faculty at UMB, UMass Amherst, and Wellesley College to co-organize a virtual antiracism workshop led by A WOC space (AWOCspace.com)

Relevant skills and certifications

- Programming experience: R, GIS, Linux, MongoDB, TensorFlow
- Data Carpentry Instructor certification
- American Academy of Underwater Scientists diver certification (60 feet)