IAN W. BISHOP

Graduate School of Oceanography, University of Rhode Island
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EDUCATION:

2018-August 2023: Ph.D. Candidate, Biological Oceanography
Graduate School of Oceanography, University of Rhode Island

- Thesis: "The adaptive potential of Southern Ocean phytoplankton"
- Advisor: Dr. Tatiana Rynearson

2012-2014: Master of Science, Environmental Studies (Science Core)
University of Colorado Boulder

- Thesis: "Life cycle size dynamics in *Didymosphenia geminata*"
- Advisor: Dr. Sarah Spaulding

2006-2010: Bachelor of Arts, Biology (Environmental Studies Concentration)
Grinnell College

RESEARCH INTERESTS: Phytoplankton/algal genomics and adaptation to ecosystem change; aquatic ecosystem assessment and restoration; algal biodiversity and biogeography; diatom taxonomy

RESEARCH EXPERIENCE:

High Performance Computing Support Liaison, *University of Rhode Island*
Sept 2022–Present

- Supports students, faculty and staff in their efforts to use institutional high performance computing (HPC) resources in their research, facilitating researchers' use of big datasets.
- Assists URI's Hurricane Research Lab in deployment of regional storm forecast simulations on university HPC resources.
- This includes regular troubleshooting of software installation and implementation.

Graduate Research Assistant
University of Rhode Island, Jan 2018–Aug 2022

- Researches and publishes on the population genomics and thermal trait variation of Southern Ocean diatoms. This includes 2nd and 3rd generation sequencing of non-model cold-adapted diatom species, as well as genotyping and high throughput thermal phenotyping of genetically diverse conspecific strains.
- Maintains large diatom culture libraries and participates in NSF-funded coastal and open ocean field sampling projects.

Professional Research Assistant, *Institute of Arctic and Alpine Research (INSTAAR),* University of Colorado Boulder, Jul 2015–Dec 2017

- Collected and analyzed freshwater algal community data for the USGS National Water Quality Assessment (NAWQA) program.
- Published peer-reviewed research related to North American algal systematics.
- Contributed taxonomic content to the peer-reviewed Diatoms of North America website.
- Supervised multiple undergraduate employees and collaborated with/mentored multiple graduate students.

Graduate Research Assistant, *INSTAAR,* Aug 2012–Aug 2014

- Researched and published on the temporal cell size patterns in the nuisance diatom *Didymosphenia geminata*.
- Collected and analyzed *D. geminata* populations for an Army Corps of Engineers-funded stream mesocosm experiment of Libby Dam outflow (Kootenai River, MT).

Research Assistant (Preclinical Research)
Infectious Disease Research Institute (IDRI), Seattle, WA, May 2011–Jul 2012

- Conducted tuberculosis and influenza vaccine immunogenicity experiments.
- Developed expertise in sterile bench technique and animal handling, immunization, and organ harvesting in multiple mammalian models.
- Trained in Biosafety Level 2 and 3 laboratory protocol.

Research Intern (Experimental Therapeutics)
***Seattle Genetics, Inc.*, Seattle, WA,** Jun–Sept 2010

Student Research Assistant
Grinnell College Biology Department, May – Sept 2009

PUBLICATIONS:

Bishop, I. W., Anderson, S. I., Collins, S., & Rynearson, T. A. (2022). Thermal trait variation may buffer Southern Ocean phytoplankton from anthropogenic warming. *Global Change Biology*, *28*(19), 5755-5767. https://doi.org/10.1111/gcb.16329

Rynearson, T. A., **Bishop, I. W.** & Collins, S. (2022). The Population Genetics and Evolutionary Potential of Diatoms. In A. Falciatore & T. Mock (Eds.), The Molecular Life of Diatoms. Springer International Publishing. https://doi.org/10.1007/978-3-030-92499-7_2

Spaulding, S. A., Potapova, M. G., **Bishop, I.W.**, Lee, S. S., Gasperak, T. M., Jovanoska, E., Furey, P. C., & Edlund, M. B. (2022). Diatoms.org: supporting taxonomists, connecting communities. *Diatom Research*, *36*(4), 1-14. https://doi.org/10.1080/0269249X.2021.2006790

Williams, D. M., Spaulding, S. A., & **Bishop, I. W.** (2021). Studies on type material from Kützing's diatom collection IV: The basionym, author and type of *Tetracyclus rupestre*. *Phytotaxa, 498*(1), 44-50. https://doi.org/10.11646/PHYTOTAXA.498.1.5

Tyree, M. A., **Bishop, I. W.**, Hawkins, C. P., Mitchell, R., & Spaulding, S. A. (2020). Reduction of taxonomic bias in diatom species data. *Limnology and Oceanography: Methods, 18*(6), 271-279. https://doi.org/10.1002/lom3.10350

Lee, S. S., **Bishop, I. W.**, Spaulding, S. A., Mitchell, R. M., & Yuan, L. L. (2019). Taxonomic harmonization may reveal a stronger association between diatom assemblages and total phosphorus in large datasets. *Ecological Indicators, 102*, 166-174. https://doi.org/10.1016/j.ecolind.2019.01.061

Bishop, I. W., Tucker, S. T., Joeckel, R. M., & Spaulding, S. (2018). Benthic fossil diatoms from the upper Ogallala Group (late Miocene) near Scotia, NE (USA). *Nova Hedwigia, Beiheft*, *147*, 261-294. https://doi.org/ 10.1127/nova-suppl/2018/021

Bishop, I. W., Esposito, R., Tyree, M., & Spaulding, S. (2017). A diatom voucher flora from selected southeast rivers (USA). *Phytotaxa, 332*(2), 101–140. https://doi.org/10.11646/PHYTOTAXA.332.2.1

Bishop, I. W., Minerovic, A. D., & Kociolek, J. P. (2017). Validation of *Prestauroneis protracta* (Grunow) I.W.Bishop, Minerovic, Q.Liu & Kociolek *comb. nov. et stat. nov.* (Bacillariophyceae). *Notulae Algarum, No. 27*, 1-2.

Bishop, I. W., and Spaulding, S. (2017). Life cycle size dynamics in *Didymosphenia geminata* (Bacillariophyceae). *Journal of Phycology, 53*(3), 652-663. https://doi.org/10.1111/jpy.12528

Bishop, I.W., & Spaulding, S. (2015). *Tetracyclus hinzii* (Bacillariophyta), a new species from the central Cascade Mountains (WA, USA). *Phytotaxa, 205*(3), 197-204. http://dx.doi.org/10.11646/phytotaxa.205.3.7

WEB PUBLICATIONS (peer-reviewed):

At the online resource Diatoms of North America (diatoms.org), I have published 50+ peer-reviewed taxonomic webpages. A complete list of pages I have individually or jointly published is listed here: https://diatoms.org/contributor/IanBishop

PRESENTATIONS:

Bishop (2022, talk). Genetic diversity and population structure of polar diatoms. Polar Microbes Symposium, Tvärminne, Finland

Bishop, Anderson, Collins & Rynearson (2020, talk). Intraspecific variability in thermal tolerance buffers Southern Ocean diatoms from biogeographic range contraction in a warming ocean. Ocean Sciences Conference, San Diego, CA

Bishop, Samuels, Collins & Rynearson. (2019, poster). Who can beat the heat? Thermal tolerance and growth rate variability in cold-adapted diatoms. ASLO Aquatic Sciences Meeting, San Juan, Puerto Rico.

Spaulding & **Bishop** (2016, poster). Experimental determination of the role of iron on the growth of *Didymosphenia geminata*. International Diatom Symposium, Quebec City, Canada. Aug 2016

Bishop & Spaulding (2015, talk). Population-level patterns of size distribution, reduction and restoration in the nuisance diatom *Didymosphenia* geminata. North American Diatom Symposium (NADS), Beaver Island, MI. Sept 2015.

Bishop (2015, talk). Improving NAWQA Diatom Counting and Voucher Documentation. NAWQA Taxonomic Consistency Workshop in *Fragilaria*, Philadelphia, PA. Nov 2015.

AWARDS, GRANTS AND CERTIFICATION:

- 2022: PADI Open Water Diver Certification
- 2022: Pacifico A. Colicci Award (URI Foundation)
- 2019: Lance A. Ricci Fellowship Fund (URI Foundation)
- 2015: Eugene F. Stoermer Diatom Scholarship (Friends of Lakeside Laboratory)
- 2014: John C. Kingston Teaching Fellowship (Friends of Lakeside Laboratory)

BOARD MEMBERSHIP & PROFESSIONAL SOCIETIES:

- Diatoms of North America website, Editorial Review Board, Member
- Association for the Sciences of Limnology and Oceanography, Member
- Association for Computing Machinery, ACM SIGHPC Member