

MINDY RICHLIN

Senior Research Specialist
Biology Department
MS-32, Redfield 332
Woods Hole Oceanographic Institution
Woods Hole, MA 02543

Tel: (508) 289-2552
E-mail: mrichlen@whoi.edu

EDUCATION

B.S. Biology, Virginia Polytechnic Institute and State University, 1993
M.S. Environmental Science, American University, 2001
Ph.D. Biology, Boston University, 2008

PROFESSIONAL EXPERIENCE

2015-present Research Specialist, Woods Hole Oceanographic Institution (WHOI)
2010-2015 Research Associate III, WHOI
2007-2010 Postdoctoral Investigator, WHOI. Advisor: Dr. Donald Anderson
2005-2006 Research Assistant, Marine Biological Laboratory
2002-2005 Graduate Research Assistant, Boston University Marine Program
1998-2002 Policy Analyst, ADI Technology Corp., Arlington, VA

AWARDS

2006 Palmer-McLeod Fellowship, Boston University
2006 American Institute of Biological Sciences Emerging Public Policy Leader Award,
Honorable Mention
2005 Arthur G. Humes Alumni Award, Boston University

RESEARCH INTERESTS

Ecology and molecular biology of phytoplankton taxa responsible for harmful algal blooms (HABs); community engagement and education; HABs policy and management.

PROFESSIONAL ACTIVITIES

- Associate Director, Cooperative Institute for the North Atlantic Region (CINAR), 2015-present
- Assistant Director, U.S. National Office for Harmful Algal Blooms, 2015-present
- Convened "Gulf of Maine HAB Science Symposium," 2019-2023
- Managing Guest Editor, Special Issue on Benthic HABs, Harmful Algae, expected 2023

- U.S. National HAB Committee, Ex Officio member, 2015-present
- Editorial Advisory Board, Harmful Algae, 2016-present
- Guest Editor, Special Issue on Benthic HABs, Harmful Algae, 2022
- Associate Editor, Special Issue of the Journal of South Carolina Water Resources, 2021
- Reviewer for NOAA ECOHAB program; manuscript reviews for Aquatic Microbial Ecology, Desalination and Water Treatment, Harmful Algae, Hydrobiologia, Journal of Applied Phycology, Journal of Biogeography, Journal of Biological Research, Journal of Phycology, Journal of Proteomics, Limnology and Oceanography, Marine Biology, Marine Ecology Progress Series, Marine Ecology Resources, Marine Genomics, Molecular Ecology, Molecular and Cellular Proteomics, Nature Scientific Reports, Oceanologia, PLOS One, Polar Biology, Toxicon, Toxins
- Steering Committee and Session Chair, 11th Symposium on Harmful Algae in the U.S., Albany, NY, 2022
- Steering Committee, 10.5 Symposium on Harmful Algae in the U.S. (Virtual) for early career researchers, 2021
- Steering Committee, Tenth Symposium on Harmful Algae in the U.S., Orange Beach, AL, 2019
- Organized/led “US HAB Science Communications workshop” at 10th Symposium on Harmful Algae in the U.S., Orange Beach, AL, 2019
- Steering Committee and Session Chair, Ninth Symposium on Harmful Algae in the U.S., Baltimore, MD, 2017
- Steering Committee, Eighth Symposium on Harmful Algae in the U.S., Long Beach, CA, 2015
- Session Chair, Sixth Symposium on Harmful Algae in the U.S., Austin, TX, 2011

PARTICIPATION IN EDUCATION

- WHOI CDEI “Middle/High School Outreach Program: Expanding Access to Ocean Education,” 2022-present
- Thesis committee member: Erick Zeracero (UCLA), Ph.D. underway
- Thesis committee member: Claudia Kaya Carrion (UVI), M.S. awarded 2022
- Thesis committee member: Lacey Rains (FGCU), M.S. awarded 2015
- Thesis committee member: Chris Loeffler (UVI), M.S. awarded 2011
- Supervisor/co-mentor: Yihua Lyu, guest Ph.D. student (Xiamen University), P.R. China, Ph.D. awarded 2016
- Supervisor/co-mentor: Yixiao Xu, guest Ph.D. student (Nanjing University), P.R. China, Ph.D. awarded 2013
- Guest lecturer, Sea Education Association, 2008-2010
- Guest lecturer, Boston University, 2010
- Guest lecturer, University of the Virgin Islands, 2009

- Graduate Teaching Fellow, Boston University Marine Program: Tropical Biology field course, Wee Wee Caye, Belize, 2004, 2006; Tropical Biology field course, St. John, USVI, 2005; Ichthyology course, laboratory and lecture, 2004

SUPERVISION AT WHOI

2020-present Kali Horn, Senior Research Assistant
 2019-present Claire Anacreon, Administrative Associate
 2019-2023 Victoria Uva, Research Assistant I (casual employee)
 2018-2020 Evangeline Fachon, Research Assistant II
 2017-2018 Finnick Correia, Research Assistant II
 2015-2019 Ann Stone, Administrative Associate
 2014-2015 Guest Ph.D. student Yihua Lyu
 2013-2016 Taylor Sehein, Research Assistant II
 2012-2013 Guest M.S. student Daniela Catania
 2011-2012 Kerry Norton, Research Assistant II
 2010-2013 Guest Ph.D. student Yixiao Xu
 2008-present Northeastern University undergraduate co-op interns (16)
 2008-2009 NOAA Hollings Scholars (2)

CRUISE PARTICIPATION AND FIELD EXPERIENCE

2012 Oceanographic cruise, ARCHEMHAB expedition: Greenland to Iceland
 (Jul 23-Aug 9) aboard RV Maria S. Merian
 2009-2015 Nauset Marsh Estuary, Cape Cod: *Alexandrium* sampling
 2011 Marakei, Kiribati: Field sampling for benthic dinoflagellates
 2007, 2010 St. Thomas, USVI: Field sampling for benthic dinoflagellates
 2003 Johnston Atoll, Pacific Ocean: SCUBA-based sampling for benthic dinoflagellates

PEER-REVIEWED PUBLICATIONS

Richlen, M.L., Horn, K., Uva, V., Fachon, E., Heidmann, S., Smith, T.B., Parsons, M.L., Anderson, D.M. (2024). *Gambierdiscus* species diversity and community structure in St. Thomas, USVI and the Florida Keys, USA. *Harmful Algae*, v. 131, 102562, <https://doi.org/10.1016/j.hal.2023.102562>.

Parsons, M.L., **Richlen, M.L.**, Smith, T.B., Anderson, D.M., Abram, A., Erdner, D., Robertson, A. CiguaMOD I: a conceptual model of ciguatoxin loading in the Greater Caribbean Region. (2024). *Harmful Algae*, Volume 131, 102561, <https://doi.org/10.1016/j.hal.2023.102561>.

Hubbard, K.A., Villac, M.C., Chadwick, C., DeSmidt, A.A., Flewelling, L., Granholm, A., Joseph, M., Wood, T., Fachon, E., Brosnahan, M.L., **Richlen, M.** (2023). Spatiotemporal transitions in

Pseudo-nitzschia species assemblages and domoic acid along the Alaska coast. *Plos one*, 18(3), p.e0282794. doi: 10.1371/journal.pone.0282794.

Richlen, M.L., Curran, M.C., Chadwick, C. †, Hubbard, K.A. (2022). Slicing the pie: Interpreting harmful algal blooms one pie chart at a time. *Science Activities*, 59(4), pp.180-190. doi: 10.1080/00368121.2022.2106172.

Carson, M.A., Doberneck, D.M., Hart, Z., Kelsey, H., Pierce, J.Y., Porter, D.E., **Richlen, M.L.***, Schandera, L., Triezenberg, H.A. (2022) A strategic framework for community engagement in oceans and human health. *Community Science*, 1(1), p.e2022CSJ000001. doi: 10.1029/2022csj000001.

*All authors contributed equally and are listed alphabetically; I am corresponding author.

Sassenhagen, I., Erdner, D.L., Lougheed, B.C., **Richlen, M.L.**, Sjöqvist, C. (2022) Estimating genotypic richness and proportion of identical multi-locus genotypes in aquatic microalgal populations. *Journal of Plankton Research*, 44(4), pp.559-572. doi: 10.1093/plankt/fbac034.

Anderson, D., Fachon, E. †, Hubbard, K., Lefebvre, K., Lin, P., Pickart, R., **Richlen, M.**, Sheffield, G., Van Hemert, C. (2022) Harmful Algal Blooms in the Alaskan Arctic: an emerging threat as the ocean warms. *Oceanography*. 35(3-4):130-139, doi: [10.5670/oceanog.2022.121](https://doi.org/10.5670/oceanog.2022.121)

Anderson, D.M., Fachon, E. †, Pickart, R.S., Lin, P., Fischer, A.D., **Richlen, M.L.**, Uva, V., Brosnahan, M., McRaven, L., Bahr, F., Lefebvre, K., Grebmeier, J.M., Danielson, S., Lyu, Y. †, Fukai, Y. (2021) Evidence for massive and recurrent toxic blooms of *Alexandrium catenella* in the Alaskan Arctic. *Proceedings of the National Academy of Sciences*, 118(41), p.e2107387118. doi: 10.1073/pnas.2107387118.

Fukai, Y. †, Matsuno, K., Fujiwara, A., Suzuki, K., **Richlen, M.L.**, Fachon, E. †, Anderson, D.M. (2021) Impact of sea-ice dynamics on the spatial distribution of diatom resting stages in sediments of the Pacific Arctic region. *Journal of Geophysical Research: Oceans*, p.e2021JC017223. doi: [10.1029/2021JC017223](https://doi.org/10.1029/2021JC017223).

Anderson, D.M., Fensin, E., Gobler, C.J., Hoeglund, A.E., Hubbard, K.A., Kulis, D.M., Landsberg, J.H., Lefebvre, K.A., Provoost, P., **Richlen, M.L.**, Smith, J.L. (2021) Marine harmful algal blooms (HABs) in the United States: history, current status and future trends. *Harmful Algae*, 102, p.101975. doi: 10.1016/j.hal.2021.101975.

Liefer, J.D., **Richlen, M.L.**, Smith, T.B., DeBose, J.L., Xu, Y. †, Anderson, D.M., Robertson, A. (2021) Asynchrony of *Gambierdiscus* spp. abundance and toxicity in the US Virgin Islands: implications for monitoring and management of ciguatera. *Toxins*, 13(6), p.413. doi: 10.3390/toxins13060413.

Parsons, M.L., **Richlen, M.L.**, Smith, T.B., Anderson, D.M., Solow, A.R. (2021) Evaluation of 24-hour screen deployments as a standardized platform to monitor *Gambierdiscus* populations in the Florida Keys and U.S. Virgin Islands. *Harmful Algae*, 103, p.101998. doi: 10.1016/j.hal.2021.101998.

Pitz, K. †, **Richlen, M.L.***, Smith, T.B., Parsons, M.L., Fachon, E., Anderson, D.M. (2021) Fluorescence in situ hybridization (FISH) probes for the detection and enumeration of *Gambierdiscus* species. *Harmful Algae*, 101, p.101914. doi: 10.1016/j.hal.2020.101914.

Curran, M.C., **Richlen, M.L.** (2019) Harmful Algal Blooms (HABs): track them like a scientist, *Science Activities*, 56:3, 77-87. doi: [10.1080/00368121.2019.1691968](https://doi.org/10.1080/00368121.2019.1691968).

- Gao, Y. †, Sassenhagen, I. †, **Richlen, M.L.**, Anderson, D.M., Martin, J.L., Erdner, D.L. (2019) Spatiotemporal genetic structure of regional-scale *Alexandrium catenella* dinoflagellate blooms explained by extensive dispersal and environmental selection. *Harmful Algae*, 86, pp.46-54. doi: 10.1016/j.hal.2019.03.013.
- Zhou, J., **Richlen, M.L.***, Sehein, T.R., Kulis, D.M., Anderson, D.M., Cai, Z. (2018) Microbial community structure and associations during a marine dinoflagellate bloom. *Frontiers in microbiology*, 9. doi: 10.3389/fmicb.2018.01201. .
- Lozano-Duque, Y. †, **Richlen, M.L.**, Smith, T.B., Anderson, D.M., Erdner, D.L. (2018) Development and validation of PCR-RFLP assay for identification of *Gambierdiscus* species in the Greater Caribbean Region. *Journal of Applied Phycology*, pp.1-12. doi: 10.1007/s10811-018-1491-5.
- Catania, D. †, **Richlen, M.L.**, Mak, Y.L., Morton, S.L., Laban, E.H., Xu, Y., Anderson, D.M., Chan, L.L., Berumen, M.L. (2017) The prevalence of benthic dinoflagellates associated with ciguatera fish poisoning in the central Red Sea. *Harmful Algae*, 68, pp.206-216. doi: 10.1016/j.hal.2017.08.005.
- Lyu, Y. †, **Richlen, M.L.***, Sehein, T.R., Chinain, M., Adachi, M., Nishimura, T., Xu, Y., Parsons, M.L., Smith, T.B., Zheng, T., Anderson, D.M. (2017) LSU rDNA based RFLP assays for the routine identification of *Gambierdiscus* species. *Harmful Algae*, 66, pp.20-28. doi: 10.1016/j.hal.2017.04.009.
- Gómez, F., **Richlen, M.L.**, Anderson, D.M. (2017) Molecular characterization and morphology of *Cochlodinium strangulatum*, the type species of *Cochlodinium*, and *Margalefidinium* gen. nov. for *C. polykrikoides* and allied species (Gymnodiniales, Dinophyceae). *Harmful Algae*, 63, pp.32-44. doi: 10.1016/j.hal.2017.01.008.
- Zhou, J., Lyu, Y. †, **Richlen, M.**, Anderson, D.M. and Cai, Z. (2016) Quorum Sensing Is a Language of Chemical Signals and Plays an Ecological Role in Algal-Bacterial Interactions. *Critical Reviews in Plant Sciences*, pp. 1-25. doi: 10.1080/07352689.2016.1172461.
- Xu, Y., † **Richlen, M.L.**, Liefer, J., Robertson, A., Kulis, D., Smith, T.B., Parsons, M.L., Anderson, D.M. (2016) Influence of environmental variables on *Gambierdiscus* spp. (Dinophyceae) growth and distribution. *PLoS ONE*, 11(4): e0153197. doi: 10.1371/journal.pone.0153197.
- Richlen, M.L.**, Zielinski, O., Holinde, L., Lyu, Y. †, Tillman, U., Cembella, A., Anderson, D.M. (2016) Prevalence of *Alexandrium fundyense* (Dinophyceae) cysts in Greenland and Iceland, with an emphasis on environmental factors affecting viability and growth in the Arctic. *Marine Ecology Progress Series*. doi: 10.3354/meps11660.
- Parsons, M.L., **Richlen, M.L.** (2016) An overview of ciguatera fish poisoning in the Bahamas. In: Erdman, R. and R. Morrison (Editors). *The 15th Symposium on the Natural History of the Bahamas*. Gerace Research Centre, San Salvador, Bahamas, p. 1-10.
- Sehein, T.R., **Richlen, M.L.**, Nagai, S., Yasuike, M., Nakamura, Y. (2015) Characterization of 17 new microsatellite markers for the dinoflagellate *Alexandrium fundyense* (Dinophyceae), a harmful algal bloom species. *Journal of Applied Phycology*, 1-5. doi: 10.1007/s10811-015-0681-7.
- Loeffler, C.R. †, **Richlen, M.L.**, Brandt, M.E., Smith, T.S. (2015) In situ effects of grazing, nutrients, and depth on the ciguatera-causing dinoflagellate *Gambierdiscus* in the U.S. Virgin Islands. *Marine Ecology Progress Series*, 531:91-104. doi: 10.3354/meps11310

- Tong, M.[†], Smith, J.[†], **Richlen, M.L.**, Steidinger, K., Kulis, D., Fux, E., Anderson, D.M. (2015) Characterization and comparison of toxin-producing isolates of *Dinophysis acuminata* from New England and Canada. *Journal of Phycology*, 51:66-81. doi: 10.1111/jpy.12251.
- Anderson, D.M., Couture, D.A., Kleindinst, J.L., Keafer, B.A., McGillicuddy, D.J., Martin, J.L., **Richlen, M.L.**, Hickey, J.M., Solow, A.R. (2014) Understanding interannual, decadal level variability in paralytic shellfish poisoning toxicity in the Gulf of Maine: the HAB Index. *Deep Sea Research Part II: Topical Studies in Oceanography*, 103: 264-276. doi: 10.1016/j.dsr2.2013.09.018.
- Fernandes, L.F.[†], Hubbard, K.A., **Richlen, M.L.**, Smith, J., Bates, S.S., Ehrman, J., Léger, C., Mafra Jr, L.L., Kulis, D., Quilliam, M., Libera, K., McCauley, L., Anderson, D.M. (2014) Diversity and toxicity of the diatom *Pseudo-nitzschia* Peragallo in the Gulf of Maine, Northwestern Atlantic Ocean. *Deep Sea Research Part II: Topical Studies in Oceanography*, 103: 139-162. doi: 10.1016/j.dsr2.2013.06.022.
- Xu, Y.[†], **Richlen, M. L.**, Morton, S. L., Mak, Y. L., Chan, L. L., Tekiau, A., Anderson, D. M. (2014) Distribution, abundance, and diversity of *Gambierdiscus* spp. from a ciguatera-endemic area in Marakei, Republic of Kiribati. *Harmful Algae*, 34: 56-68. doi: [10.1016/j.hal.2014.02.007](https://doi.org/10.1016/j.hal.2014.02.007).
- Richlen, M.L.**, Erdner, D.L., McCauley, L.A.R., Libera, K., Anderson, D.M. (2012) Extensive genetic diversity and rapid population differentiation during blooms of *Alexandrium fundyense* (Dinophyceae) in the Nauset Marsh System, Cape Cod, MA, USA. *Ecology and Evolution*, 2(10), 2588-2599. doi: 10.1002/ece3.373.
- Richlen, M.L.**, Lobel, P.S. (2011) Effects of depth, habitat, and water motion on the abundance and distribution of ciguatera dinoflagellates at Johnston Atoll, Pacific Ocean. *Marine Ecology Progress Series*. 421: 51-66. doi: 10.3354/meps08854.
- Erdner, D.L., **Richlen, M.L.**, McCauley, L.A.R, Anderson, D.M. (2011) Intrapopulation diversity and dynamics of a widespread bloom of the toxic dinoflagellate *Alexandrium fundyense*. *PLoS ONE* 6(7): e22965. doi: 10.1371/journal.pone.0022965.
- Richlen, M.L.**, Morton, S.L., Jamali, E.A., Rajan, A., Anderson, D.M. (2010) The catastrophic 2008 – 2009 red tide in the Arabian Gulf region, with observations on the identification and phylogeny of the fish-killing dinoflagellate *Cochlodinium polykrikoides*. *Harmful Algae* 9: 163-172. doi: [10.1016/j.hal.2009.08.013](https://doi.org/10.1016/j.hal.2009.08.013).
- Richlen, M.L.**, Morton, S.L., Barber, P.H., Lobel, P.S. (2008) Phylogeography, morphological variation and taxonomy of the toxic dinoflagellate *Gambierdiscus toxicus* (Dinophyceae). *Harmful Algae* 7 (5): 614-629. doi: [10.1016/j.hal.2007.12.020](https://doi.org/10.1016/j.hal.2007.12.020).
- McCauley, L.A.R., Erdner, D.L., Nagai, S., **Richlen, M.L.**, Anderson, D.M. (2009) Biogeographic analysis of the globally distributed harmful algal bloom species *Alexandrium minutum* (Dinophyceae) based on rRNA gene sequences and microsatellite markers. *Journal of Phycology* 45 (2): 454-463. doi: 10.1111/j.1529-8817.2009.00650.x.
- Richlen, M.L.**, Barber, P.H. (2005) A technique for the rapid extraction of microalgal DNA from single live and preserved cells. *Molecular ecology notes* 5: 688-691. doi: [10.1111/j.1471-8286.2005.01032.x](https://doi.org/10.1111/j.1471-8286.2005.01032.x).

*Co first author

† Student or postdoc

OTHER PUBLICATIONS

US National Office for Harmful Algal Blooms, "Harmful Algal Research & Response: A National Environmental Science Strategy (HARRNESS), 2023-2033," Woods Hole Oceanographic Institution, Woods Hole, MA. *In prep.*

Alves-de-Souza, C., Mardones, J., Yñiguez, A.T., Le Bihan, V., Guillotreau, P., Gatti, C., **Richlen, M.L.**, Larsen, J., Berdalet, E. (2022) Harmful Algae. In Urban, E.R. Jr., Ittekkot, V. (Eds), Blue Economy: An Ocean Science Perspective. Springer Nature, 2022.

Proceedings of the Workshop on the Socio-economic Effects of Harmful Algal Blooms in the United States, U.S. National Office for Harmful Algal Blooms, Woods Hole Oceanographic Institution, March 2021. <http://dx.doi.org/10.1575/1912/27896>

Moreira-González, A.R., Alonso-Hernández, C.M. Gustavo Arencibia-Carballo, G., Morton, S.L., **Richlen, M.L.** (2021) First report of an *Ansanella granifera* bloom associated with eutrophication in Cuban waters, Caribbean region. Harmful Algae News (UNESCO/IOC), no. 67 p. 10-11: <http://www.e-pages.dk/ku/1499/>.

Bowers, H., **Richlen, M.**, Anderson, D.M., Hill, P., Kostel, K., Davis, T., Ayres, D., Fanara, T., Hubbard, K., Kirkpatrick, B., Lansing, M., Raymond, H., Wichman, R. (2020) Insights from the first US HAB Science Communication Workshop. Harmful Algae News (UNESCO/IOC), no. 66, p. 12-13. <https://www.e-pages.dk/ku/1487/>.

Cembella, A.D., Tillmann, U. , Gobler, C.J., Morton, S.L., Tomas, C.R., Burkholder, J.M., O'Neil, J. M., Parsons, M.L., **Richlen, M.L.**, Robertson, A. , Band-Schmidt, C.J., Brand, L.E., Marshall, H.G., Glibert, P.M., Roelke, D.L., Manning, S.R. and Kudela, R. (2018) Harmful Algal Species Fact Sheets. In Harmful Algal Blooms (eds S. E. Shumway, J. M. Burkholder and S. L. Morton). doi:[10.1002/9781118994672.ch16](https://doi.org/10.1002/9781118994672.ch16)

Cembella A.; Zielinski O.; Anderson D.; Graeve M.; Henkel R.; John U.; Kattner G.; Koch B.; Krock B.; Meier D.; **Richlen M.**; Tillmann U.; Voß D. (2016) ARCHEMHAB: Interactions and feedback mechanisms between hydrography, geochemical signatures and microbial ecology, with a focus on HAB species diversity, biogeography and dynamics - Cruise No. MSM 21/3 – July 25 – August 10, 2012 – Nuuk (Greenland) – Reykjavik (Iceland). MARIA S. MERIAN-Berichte, MSM21/3, 49 pp., DFG-Senatskommission für Ozeanographie, ISSN 2195-8483. doi:[10.2312/cr_msm21_3](https://doi.org/10.2312/cr_msm21_3).

Richlen, M.L., Parsons, M., Anderson, D.M. (2012) Ecology and impacts of ciguatera on coral reef ecosystems. In: Advances in Environmental Research, V. 26, pp. 41-76 Nova Publishing.

OTHER PRODUCTS

- WHOI HABhub data portal (<https://habhub.whoi.edu/>): interactive data portal providing real-time access to HAB surveillance data.

- Northeast HAB webpage (<https://northeasthab.who.edu/>): provides general information regarding HABs in New England, including links to data and monitoring programs, as well as resources for educators.
- National Office for HABs at the Woods Hole Oceanographic Institution (<https://hab.who.edu/>): a “clearinghouse” for information on HAB issues, and HAB-related research and management activities in the U.S.

ORAL PRESENTATIONS

Mindy Richlen, Don Anderson, Claire Anacreon. “CINAR Education & Workforce Development Programs”, *Oral Presentation at CINAR Science Review, June 2023. In person.*

Mindy Richlen, Claire Anacreon “CINAR Administration: Overview & Challenges”, *Oral Presentation at CINAR Administrative Review, May 2023, Virtual.*

Richlen, M.L., Mike Brosnahan, Ethan Andrews, Claire Anacreon, Kali Horn. “WHOI HABhub Development – new features and updates”. *Oral Presentation at the 2023 Gulf of Maine HAB Science Symposium, March 2023, Virtual.*

Richlen, M.L., Mike Brosnahan, Ethan Andrews, Claire Anacreon, Kali Horn, “The WHOI HABhub online data portal” *Oral Presentation at the ICES Working Group for Harmful Algal Bloom Dynamics, June 2022, Virtual.*

Richlen, M.L., Mike Brosnahan, Ethan Andrews, Claire Anacreon, Kali Horn. “The WHOI HABhub: an online portal for integration and real-time sharing of HAB surveillance data”. *Presentation at the 2022 Gulf of Maine HAB Science Symposium, Feb 2022, Virtual.*

Richlen, M.L., “Community structure and spatiotemporal dynamics of *Gambierdiscus* species in St. Thomas (USVI) and the Florida Keys (USA)”, *Oral Presentation at the 19th International Conference on Harmful Algae, Oct 2021, Virtual.*

Richlen, M.L., Anderson, D.M, “Ciguatera Poisoning”, *speed talk at WHOI Reef Solutions Initiative Town Hall, March 2021, Virtual.*

Richlen, M.L., M. Brosnahan, G. Doucette, E. Andrews (2021). “Woods Hole Center for Oceans and Human Health and neHABON project and program updates”, *Oral presentation at Gulf of Maine HAB Science Symposium, March 2021, Virtual.*

Richlen, M.L., M. Brosnahan, E. Andrews, M.C. Curran, V. Uva, K. Horn, C. Anacreon, N. Symmonds, D. Anderson. “Woods Hole Centers for Oceans and Human Health Community Engagement Core”, *Oral presentation at meeting with regional Sea Grant personnel, Feb 2021, Virtual.*

Richlen, M.L., M. Brosnahan, E. Andrews, M.C. Curran, V. Uva, K. Horn, C. Anacreon, N. Symmonds, D. Anderson. “Woods Hole Centers for Oceans and Human Health Community Engagement Core”, *Oral presentation at annual COHH Directors meeting, Oct 2020, Virtual.*

- Parsons, M., D. Erder, **M. Richlen**, A. Robertson, R. Sobol, J. Pierce Greater Caribbean Center for Ciguatera Research (project 1 update), *Oral presentation at annual COHH Directors meeting, Oct 2020, Virtual.*
- Richlen, M.L.** “The Woods Hole Center for Oceans and Human Health Community Engagement Core: Integrating Science and Community Engagement”, *Oral Presentation at the Gulf of Maine HAB Stakeholder’s meeting, March 2020, Virtual.*
- Richlen, M.L.**, Curran, M.C., Brosnahan, M.L., Anderson, D.M., Stegeman, J. “The Woods Hole Center for Oceans and Human Health: Community Engagement and Education” *Poster Presentation at the Partnerships for Environmental Public Health PEPH 2020: Past, Present, and Future, Durham, NC, Feb 2020.*
- Curran, M.C. and Richlen, M.L.** “Harmful Algal Blooms (HABs) in New England: How do they impact your food?” *Joint oral presentation at the National Marine Educators Association Conference, Durham, NH, July 2019.*
- Richlen, M.L.**, Lyu, Y., Smith, J., Cembella, A., Anderson, D.M. “Cyst distribution, viability, and growth characteristics of *Alexandrium tamarens* from Arctic waters”, *Oral Presentation at the International Conference on Harmful Algae, Wellington, New Zealand, October 2014.*
- Richlen, M.L.**, Crespo, B.G., Adams, J., Keafer, B., Erdner, D.L., Anderson, D.M. “Population structure and genetic dynamics of toxic *Alexandrium fundyense* (Dinophyceae) blooms in coastal embayments”, *Oral Presentation at the Seventh Symposium on Harmful Algae in the U.S., Sarasota, FL, October 2013.*
- Richlen, M.L.** “Ecology and diversity of *Gambierdiscus*: Towards an integrated study of Ciguatera Fish Poisoning”, *Invited talk, SKLMP-MEL Joint Symposium, Shenzhen, China, January 2013.*
- Morris, J.G., Smith, T., **Richlen, M.L.**, Robertson, A., Radke, E., Roberts, S., Grattan, L., Anderson, D.M. Ciguatera in St. Thomas, USVI. *Invited talk (speaker panel), University of the Virgin Islands, September 2012.*
- Richlen, M.L.** Population dynamics, diversity, and physiology of ciguatera associated dinoflagellates from St. Thomas, U.S. Virgin Islands. *Invited talk, Dauphin Island Sea Lab, Dauphin Island, AL, February 2012.*
- Richlen, M.L.**, Smith, T., Robertson, A., Xu, Y., Kulis, D., Flores Quintana, H.A., Garcia, A.C., Hooe-Rollman, J.I., Anderson, D.M. Population dynamics, diversity, and physiology of ciguatera associated dinoflagellates from St. Thomas, U.S. Virgin Islands. *Oral Presentation at the Sixth Symposium on Harmful Algae in the U.S., Austin, TX, November 2011.*
- Richlen, M.L.**, Erdner, D., McCauley, L., Libera, K., Anderson, D.M. Extensive genetic diversity and rapid population succession during blooms of *Alexandrium fundyense* (Dinophyceae) in an isolated salt pond on Cape Cod, MA, USA. *Oral Presentation at the American Society of Limnology and Oceanography, San Juan, Puerto Rico, February 2011*

- Richlen, M.L.** Impact of Climate on Dinoflagellates and Ciguatera Fish Poisoning. *Invited talk at the University of the Virgin Islands, St. Thomas, USVI, December 2010.*
- Richlen, M.L.,** Erdner, D., McCauley, L., Libera, K., Anderson, D.M. Extensive genetic diversity and rapid population succession during blooms of *Alexandrium fundyense* (Dinophyceae) in an isolated salt pond on Cape Cod, MA, USA. *Oral Presentation at the International Conference on Harmful Algae, Crete, Greece, November 2010.*
- Fernandes, L.F., **Richlen, M.L.,** Kulis, D., Erdner, D.L., Bates, S.S., Ehrman, J., McCauley, L.A.R., Libera, K., Liang, J., Anderson, D.M. Taxonomy, toxicity and distribution of *Pseudo-nitzschia* diatoms in the Gulf of Maine: Characterizing an emerging threat in the region. *Oral Presentation at the Fifth Symposium on Harmful Algae in the U.S., Ocean Shores, WA, November 2009.*
- Richlen, M.L.** Examining the determinants of ciguatera fish toxicity: Ecology and biodiversity of benthic dinoflagellates, phylogeography of *Gambierdiscus toxicus* and herbivore digestive mechanisms. *Invited talk at WHOI, Woods Hole, MA, June 2009.*
- Richlen, M.L.** Causes and Impacts of Ciguatera Fish Poisoning. *Invited talk for the WHOI Science Made Public lecture series, Woods Hole, MA, August 2008.*
- Richlen, M.L.,** Morton, S.L., Barber, P.H., Lobel, P.S. Phylogeography, morphological variation, and taxonomy of the toxic dinoflagellate *Gambierdiscus toxicus* (Dinophyceae). *Oral Presentation at the Phycological Society of America annual meeting, Providence, RI, August 2007.*
- Richlen, M.L.** The continuing enigma of ciguatera: progress? *Invited talk at the Marine Biological Laboratory (MBL), Woods Hole, MA, 2006.*
- Richlen, M.L. & Barber, P.H.** Genetic variation in *Gambierdiscus toxicus*. *Oral presentation at the 44th annual meeting of the Northeast Algal Society, Rockport, ME, 2005.*
- Richlen, M.L.** Evaluating the determinants of ciguatera fish toxicity: ecological and molecular research. *Invited talk at the MBL, Woods Hole, MA, 2005.*

PROFESSIONAL AFFILIATIONS

- International Society for the Study of Harmful Algae (ISSHA)
- National Marine Educators Association
- American Society of Limnology and Oceanography
- U.S. National HAB Committee

ADDITIONAL SKILLS AND COURSES

- *Data Carpentries R Workshop, WHOI (June 2023)*

- *NIEHS Partnerships for Environmental Public Health (PEPH) Logic Model and Metrics Training*, taught by NIH, Virtual (Nov 2022)
- *Training on Diversity, Equity, and Inclusion*, taught by Dr. Martinez-Cola, PhD, sponsored by the NOAA Fisheries Internship (IN FISH) program (May 2023).
- *HAB Risk Communication Training Workshop*, Anchorage, AK (Jan 2020)
- *American Institute of Biological Sciences Communications Boot Camp for Scientists*, Washington, DC (Oct 2019)
- *Workshop on Molecular Evolution*, Marine Biological Laboratory, Woods Hole, MA (Jul 2011)
- *Strategies and Techniques for Analyzing Microbial Populations*, Marine Biological Laboratory, Woods Hole, MA (Aug 2011)
- *Proteomics*, Cold Spring Harbor Laboratory, NY (Jul 2010)
- PADI advanced SCUBA diver certification