

Curriculum Vitae

Nicole J. Poulton

Senior Research Scientist
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I. EDUCATION:

2001 Ph.D. Massachusetts Institute of Technology/Woods Hole Oceanographic Institution
Biological Oceanography, Thesis Advisor: Donald Anderson

1993 B.S. Biology (primary degree) and double major in Chemistry (B.A. - certificate)
Virginia Polytechnic Institute and State University (*Virginia Tech*)

II. PROFESSIONAL & TEACHING EXPERIENCE:

A. Research Positions

- 2021- Pres. **Senior Research Scientist**, Bigelow Laboratory for Ocean Sciences, ME
Research focuses primarily on phytoplankton ecology and marine microbiology using a variety of technologies specifically flow cytometry.
- 2014- Pres. **Director, Center for Aquatic Cytometry**, *Bigelow Laboratory for Ocean Sciences*
Direct and manage a multi-user cytometry Center, located in the Bigelow Center for Blue Biotechnology at the Laboratory's Ocean Science and Education Campus in East Boothbay, Maine, dedicated to applying new technologies to the study of algae and aquatic microbes from marine and freshwater ecosystems. The Center provides state-of-the-art space for the latest cytometric instruments, imaging technologies, and applications.
- 2012- Pres. **Research Faculty**, *Colby College*, Waterville, ME
Educate and advise fall undergraduate students at Bigelow Laboratory. Course entitled, "Life on the Ocean Wave: Field Methods Course" as part of the Colby Sea Change Semester at Bigelow.
- 2008- 2021 **Research Scientist**, *Bigelow Laboratory for Ocean Sciences*, ME
- 2004-2008 **Aquatic Scientist**, *Fluid Imaging Technologies*, Yarmouth, Maine.
Aided in application development for aquatic applications (freshwater and marine) using an imaging-in-flow system (FlowCAM®).

- 2001-2007 **Postdoctoral Research Scientist**, *Bigelow Laboratory for Ocean Sciences*, ME.
Advisor: Michael Sieracki - Examined the role of bacteria and phytoplankton interactions and associations in conjunction with the J. J. MacIsaac Facility for Aquatic Cytometry.
- 1994-2001 **Research Assistant (Ph.D.)** *Woods Hole Oceanographic Institution/MIT*, MA
Advisor: Donald Anderson. Thesis entitled, “Physiological and Behavioral Diagnostics of Nitrogen Limitation for the Toxic Dinoflagellate *Alexandrium fundyense*”
- 1993-1994 **Research Specialist**, *Massachusetts Institute of Technology*, MA
Advisor: Sallie (Penny) Chisholm. Primary FACScan flow cytometer operator for the analysis marine picoplankton.

B. Teaching Experience

- 2022-pres. Instructor, Wake Forest University Program and cruise at Bigelow Laboratory.
- 2021-pres. Co-Instructor, Mini- Dartmouth College BLOOM Program at Bigelow Laboratory.
- 2020 Co-Instructor, 21st INDO-US Flow Cytometry Workshop on “Aquatic Cytometry” in Goa, India. January 2020
- 2019 Instructor, Maine School of Science and Mathematics (MSSM), week-long, science emersion program at Bigelow Laboratory - January 2019.
- 2016-2018 Director and Instructor, **Introduction to Flow Cytometry for Aquatic Sciences**. *Bigelow Laboratory for Ocean Sciences*, ME USA
- 2012-pres. Research Faculty, **Life on the Ocean Wave: Field Methods Course** (Fall Sea Change Semester), *Colby College/Bigelow Laboratory for Ocean Sciences*, ME
- 2005-pres. Director, **Keller BLOOM Program**, *Bigelow Laboratory for Ocean Sciences* week-long High School Junior Program in Oceanography including Field Experience
- 2011-pres. Co-Director, **BLOOM Educators Program**, *Bigelow Laboratory for Ocean Sciences* High School Teacher Professional Development Program
- 2011 July Co-Instructor, EUROFLEETS Ship-based Training for PhD Students of Marine Related Sciences on Practical skills in Oceanography, Tallinn, Estonia
- 2003-2016 Co-Instructor, **Algal Culturing Techniques**, *Bigelow Laboratory for Ocean Sciences*, ME USA

- 2002-2006 Co-Instructor, **Introduction to Flow Cytometry for Aquatic Sciences.** *Bigelow Laboratory for Ocean Science, ME USA*
- 2004 Co-Instructor, **Advanced Flow Cytometry for the Aquatic Sciences.** *Bigelow Laboratory for Ocean Sciences, ME USA*
- 2002-2005 Guest Lecturer, **Gulf of Maine Seminar Series** *University of New England (UNE)*
- 2003-2005 Science Professor, Marine Biology, Chemistry and Biology *Deck House School, Edgecomb, ME USA Private Boys High School Program*
- 2001 Lecturer, *Boston College, MA USA, Introduction to Oceanography, Dept. of Geology and Geophysics Spring Semester*

III. PEER REVIEWED PUBLICATIONS: H Index = 34, Citations: 4,437 (Scopus –2/2024)

- (62) Minor, E., U. Gomes, K. M. Schreiner, **N. J. Poulton**, E. Hendrickson and M. A. Maurer-Jones. Small microplastic particles in Lake Superior: A preliminary study coupling Nile red staining, flow cytometry and pyrolysis gas chromatography-mass spectrometry. **2023.** *Limnology and Oceanography Methods.* 21: Issue 12, pgs: 800-813.
- (61) Belkina, A. C., C. E. Roe, V. A. Tang, J. B. Back, C. Bispo, A. Conway, U. Chakraborty, K. T. Daniels, G. de la Cruz, L. Ferrer-Font, A. Filby, D. M. Gravano, M. D. Gregory, C. Hall, C. Kukat, A. Mozes, D. Ordoñez-Rueda, E. Orłowski-Oliver, I. Pesce, Z. Porat, **N. J. Poulton**, K. M. Reifel, A. M. Rieger, R. T C Sheridan, G. Van Isterdael, and R. V. Walker. **2023.** Guidelines for establishing a cytometry laboratory. *Cytometry Part A.*
- (60) Millette, N. C., R. J. Gast, J. Y. Luo, H. V. Moeller, K. Stamieszkin, K. H. Andersen, E. F. Brownlee, N. R. Cohen, S. Duhamel, S. Dutkiewicz, P. M Glibert, M. D. Johnson, S. G. Leles, A. E. Maloney, G. B. McManus, **N Poulton**, S. D. Princiotta, R. W. Sanders, and S. Wilken. Mixoplankton and mixotrophy: future research priorities. **2023.** *Journal of Plankton Research.* 45: Issue 4, pgs: 576-596.
- (59) Balch, W. M., D. T. Drapeau, **N. Poulton**, S. D. Archer, C. Cartisano, C. Burnell and J. Godrijan. Osmotrophy of dissolved organic compounds by coccolithophore populations: Fixation into particulate organic and inorganic carbon. **2023.** *Science Advances.* 9,eadf6973
- (58) Munson-McGee, J., M. Lindsay, E. Sintes, J. Brown, T. DeAngelo, J. Brown, L. Lubelczyk, P. Tomko, D. Emerson, B. Orcutt, **N. J. Poulton**, G. Herndl, R. Stepanauskas. Decoupling of respiration rates and abundance in marine prokaryoplankton. **2022** *Nature* 612, 764-770.
- (57) Johnstone, J., J. Lunden, R. Waller, **N. J. Poulton**, & H. Togami. Antarctic deep-sea coral larvae may be resistant to end-century ocean warming. **2022** *Coral Reefs* 41, 1495-1510.
- (56) Vernet C., J. Lecubin, P. Sánchez, Tara Oceans Coordinators, S. G Acinas, M. Babin, P. Bork, E. Boss, C. Bowler, G. Cochrane, C. de Vargas, G. Gorsky, L. Guidi, N. Grimsley, P. Hingamp, D. Iudicone, O. Jaillon, S. Kandels-Lewis, L. Karp-Boss, E. Karsenti, F. Not, H.

Ogata, **N. Poulton**, S. Pesant, C. Sardet, S. Speich, L. Stemmann, M. B Sullivan, S Sunagawa, P. Wincker, T. O Delmont, E. Pelletier, P. Hingamp, M. Lescot. The Ocean Gene Atlas v2.0: online exploration of the biogeography and phylogeny of plankton genes. **2022** *Nucleic Acid Research*, doi.org/10.1093/nar/gkac420

- (55) Delmont T. O., M. Gaia, D. D. Hinsinger, P. Frémont, C. Vanni, A. Fernandez-Guerra, A M. Eren, A. Kourlaiev, L. d'Agata, Q. Clayssen, E. Villar, K. Labadie, C. Cruaud, J. Poulain, C. Da Silva, M. Wessner, B. Noel, J. Aury, S. Sunagawa, S. G Acinas, P. Bork, E. Karsenti, C. Bowler, C. Sardet, L. Stemmann, C. de Vargas, P. Wincker, M. Lescot, M. Babin, G. Gorsky, N. Grimsley, L. Guidi, P. Hingamp, O. Jaillon, S. Kandels, D. Iudicone, H. Ogata, S. Pesant, M. B Sullivan, F. Not, K. Lee, E. Boss, G. Cochrane, M. Follows, **N. Poulton**, J. Raes, M. Sieracki, S. Speich, and E. Pelletier. Functional repertoire convergence of distantly related eukaryotic plankton lineages abundant in the sunlit ocean. **2022** *Cell Genomics* 2:5 100123
- (54) Zayed, A. J M Wainaina, G Dominguez-Huerta, E Pelletier, J Guo, M Mohssen, F Tian, A A Pratama, B Bolduc, O Zablocki, D Cronin, L Solden, E Delage, A Alberti, J Aury, Q Carradec, C da Silva, K Labadie, J Poulain, H Ruscheweyh, G Salazar, E Shatoff, **Tara Oceans Coordinators**‡, R Bundschuh, K Fredrick, L S Kubatko, S Chaffron, A I Culley, S Sunagawa, J H Kuhn, P Wincker, M B Sullivan. Cryptic and abundant marine viruses at the evolutionary origins of Earth's RNA virome. **2022** *Science* 376:6589 156-162
- (53) Archer, S.D., L.C. Lubelczyk, M. Kunes, K. McPhee, W. Dawydiak, M. Staiger, K. Posman, **N. J. Poulton**. Saturation approach to determine grazing mortality in picoeukaryote and *Synechococcus* populations. **2022** *Frontiers in Marine Science* 9
- (52) Clayton, S.*, Alexander, H.*, J. Graff, **N. Poulton**, L. Thompson, H. Benway, E. Boss, A. Martiny. Bio-GO-SHIP: the time is right to establish global repeat sections of ocean biology. **2022** *Frontiers in Marine Science* 8, 767443
- (51) D'Angelo, T., J. Goordial, **N. J. Poulton**, L. Seyler, J. A. Huber, R. Stepanauskas, B. N. Orcutt. Oceanic crustal fluid single cell genomics complements metagenomic and metatranscriptomic surveys with orders of magnitude less sample volume. **2022** *Front. Microbiol.* – 12, 738231
- (50) Royo-Llonch, M., Sánchez, P., Ruiz-González, C., Guillem, S., Pedrós-Alió, C., Sebastián, M., Labadie, K., Paoli, L., Ibarbalz, F.M., Zinger, L., Churcheward, B., **Tara Ocean Coordinators**, Chaffron, S., Eveillard, D. Karsenti, E., Sunagawa, S., Windecker, P., Karp-Boss, L., Bowler, C., and S.G. Acinas. Compendium of 530 metagenome-assembled bacterial and archaeal genomes from the polar Arctic Ocean. **2021** *Nature Microbiology*, 6(12), pp. 1561-1574.
- (49) Brandão, M.C., Benedetti, F., Martini, S. Soviadan, Y.D., Irisson, J., Romagnan, J. Elineau, A., Desnos, C., Jalabert, L., Freire, A. S., Picheral, M., Guidi, L., Gorsky, G., Bowler, C., Karp-Boss, L., Henry, N., deVargas, C., Sullivan, M., **Tara Ocean Coordinators**, Stemmann, L. and Lombard, F. Macroscale patterns of oceanic zooplankton composition and size structure. **2021**. *Scientific Reports*, 11(1), 15714.

- (48) Goordial, J., D'Angelo, T., Labonté, J.M., **Poulton, N. J.**, Brown, J.M., Stepanauskas, R., Fruh-Green, G.L., B. Orcutt. Microbial diversity and function in shall subsurface sediment and oceanic lithosphere of the Atlantis Massif. **2021** *mBio*, 12(4), e00490-21.
- (47) Galbraith D, Loureiro J, Antoniadis I, Bainard J, Bureš P, Cápál P, Castro M, Castro S, Čertner M, Čertnerová D, Chumová Z, Doležel J, Giorgi D, Husband BC, Kolář F, Koutecký P, Kron P, Leitch IJ, Ljung K, Lopes S, Lučanová M, Lucretti S, Ma W, Melzer S, Molnár I, Novák O, **Poulton N**, Skalický V, Sliwinska E, Šmarda P, Smith TW, Sun G, Talhinhos P, Tárnok A, Temsch EM, Trávníček P, Urfus T. Best practices in plant cytometry (editorial). **2021** *Cytometry A*. doi: 10.1002/cyto.a.24295. Epub ahead of print. PMID: 33398930.
- (46) Brown, J. M., J. M. Labonte, J. Brown, N. R. Record, **N. J. Poulton**, M. E. Sieracki, R. Logares, R. Stepanauskas. Single Cell Genomics reveals viruses consumed by marine protists. **2020** *Frontiers in Microbiology* 11, 2317
- (45) Kienteca Lange, P. J. Werdell, Z.K. Erickson, G. Dall'Olmo, R.J.W Brewin, M.V. Zubkov, G. A. Tarran, H. A. Bouman, W. H. Slade, S. E. Craig, **N. J. Poulton**, A. Bracher, M.W. Lomas, I. Cetinić. Radiometric approach for the detection of picophytoplankton assemblages across oceanic fronts. **2020** *Optics Express* 28(18): 25682-25705.
- (44) Beam, J. B., E.D. Becraft, J.M. Brown, F.P. Schulz, J.K. Jarett, O. Bezuidt, **N. J. Poulton**, K. Clark, P.F. Dunfield, N.V. Ravin, J.R. Spear, B.P. Hedlund, K.A. Kormas, S.M. Sievert, M.S. Elshahed, H.A. Barton, M.B. Stott, J.A. Eisen, D.P. Moser, T.C. Onstott, T. Woyke, R. Stepanauskas. Ancestral Absence of Electron Transport Chains in Patescibacteria and DPANN. **2020** *Frontiers in Microbiology*, 11, 1848
- (43) Sunagawa S., S.G. Acinas, P. Bork, C. Bowler, **Tara Oceans Coordinators**, D. Eveillard, G. Gorsky, L. Guidi, D. Iudicone, E. Karsenti, F. Lombard, H. Ogata, S. Pesant, M.B. Sullivan, P. Wincker & C. de Vargas. Tara Oceans: towards global ocean ecosystems biology. **2020** *Nature Reviews Microbiology* 18:428-445
- (42) Tracy A.N., R. Yadavalli, K.S. Reed, R. Parnaik, **N. J. Poulton**, D. Bishop-Bailey, J.A. Fernández Robledo. Genome to phenome tools: In vivo and in vitro transfection of *Crassostrea virginica* hemocytes. **2020** *Fish and Shellfish Immunology*, Aug;103:438-441 doi: 10.1016/j.fsi.2020.05.022.
- (41) Pachiadaki, M.G., J.M. Brown, J. Brown, O. Bezuidt, P.M. Berube, S.J. Biller, **N. J. Poulton**, M. D. Burkart, J.J. La Clair, S.W. Chisholm, and R. Stepanauskas. Charting the Complexity of the Marine Microbiome through Single-Cell Genomics. **2019** *Cell* **179**: 1623-1635.
- (40) Ibarbalz, F. M., N. Henry, M. C. Brandao, S. Martini, G. Busseni, H. Byrne, L. Pedro Coelho, J. M. Gasol, A. C. Gregory, F. Mahe, J. Rigonato, M. Royo-Llonch, G. Salazar, I. Sanz-Saez, E. Scalco, D. Soviadan, A. A. Zayed, A. Zingone, K. Labadie, J. Ferland, Cl. Marec, S. Kandels, M. Picheral, C. Dimier, J. Poulain, S. Pisarev, M. Carmichael, S. Pesant, **Tara Ocean Coordinators**, M. Babin, E. Boss, D. Ludicone, O. Jaillon, S. G. Acinas, H. Ogata, E. Pelletier, L. Stemmann, M. B. Sullivan, S. Sunagawa, L. Bopp, C. de Vargas, L. Karp-

- Boss, P. Wincker, F. Lombard, C. Bowler, L. Zinger. Global Trends in Marine Plankton Diversity across Kingdoms of Life. **2019** *Cell* **179**: 1084-1097.
- (39) Salazar, G., P. Lucas, A. Alberti, J. Huerta-Cepas, H. Ruscheweyh, M. Cuenca, C. M. Field, L. Pedro Coelho, C. Cruaud, S. Engelen, A.C. Gregory, K. Labadie, C. Marec, E. Pelletier, M. Royo-Llonch, S. Roux, P. Sanchez, H. Uehara, A. A. Zayed, G. Zeller, M. Carmichael, C. Dimier, J. Ferland, S. Kandels, M. Picheral, S. Pisarev, J. Poulain. **Tara Oceans Coordinators**. S. G. Acinas, M. Babin, P. Bork, C. Bowler, C. de Vargas, L. Guidi, R. Hingamp, D. Iudicone, L. Karp-Boss, E. Karsenti, H. Ogata, S. Pesant, S. Speich, M. B. Sullivan, P. Wincker, and S. Sunagawa. Gene Expression Changes and Community Turnover Differentially Shape the Global Ocean Metatranscriptome **2019** *Cell* **179**:1068-1083.
- (38) Benites, L. F., **N. Poulton**, K. Labadie, M.E. Sieracki, N. Grimsley, G. Piganeau. Single cell ecogenomics reveals mating types of individual cells and ssDNA viral infections in the smallest photosynthetic eukaryotes. **2019** *Philosophical Transactions R. Soc. B* **374**: 20190089. <http://dx.doi.org/10.1098/rstb.2019.0089>
- (37) Sieracki, M. E., **N. J. Poulton**, O. Jaillon, P. Wincker, C. de Vargas, L. Rubinat-Ripoll, R. Stepanauskas, R. Logares, R. Massana. Single cell genomics yields a wide diversity of small planktonic protists across major ocean ecosystems. **2019** *Scientific Reports* **9**, Article number: 6025.
- (36) Gregory, A. C., A. A Zayed, N. Conceição-Neto, B. Temperton, B. Bolduc, A. Alberti, M. Ardyna, K. Arkhipova, M. Carmichael, C. Cruaud, C. Dimier, J. Ferland, S. Kandels-Lewis, Y. Liu, C. Marec, S. Pesant, M. Picheral, S. Pisarev, J. Poulain, J. Tremblay, D. Vik, **Tara Oceans coordinators**, M. Babin, C. Bowler, C. de Vargas, B. E. Dutilh, D. Iudicone, L. Karp-Boss, S. Roux, S. Sunagawa, P. Wincker, & M. B. Sullivan. Marine viral macro- and micro-diversity from pole to pole. **2019** *Cell*. <https://doi.org/10.1016/j.cell.2019.03.040>
- (35) MacIntyre, H.L, J.J. Cullen, S. Rastin, M. Waclawik, K.J. Franklin, **N. Poulton**, L. Lubelczyk, K. McPhee, T. L. Richardson, E. Van Meerssche, B. Petri. Inter-laboratory validation of the serial dilution culture – most probable number method for enumerating viable phytoplankton. **2018** *Journal of Applied Phycology* 31:1 491-503.
- (34) Nagarkar, M., P. Countway, Y Du Yoo, E. Daniels, **N. J. Poulton**, B. Palenik. Temporal dynamics of eukaryotic microbial diversity at a coastal Pacific site. **2018** *The ISME Journal* 12, 2278-2291
- (33) Seeleuthner, Y., S. Mondy, V. Lombard, Q. Carradec, E. Pelletier, M Wessner, J. Leconte, J. Mangot, J. Poulain, K. Labadie, R. Logares, S. Sunagawa, V. de Berardinis, M. Salanoubat, C. Dimier, S. Kandels-Lewis, M. Picheral, S. Searson, Tara Ocean Coordinators, S. Pesant, **N. J. Poulton**, R. Stepanauskas, P. Bork, C. Bowler, P. Hingamp, M. Sullivan, D. Iudicone, R. Massana, J Aury, B. Henrissat, E. Karsenti, O. Jaillon, M. Sieracki, C. deVargas, P. Wincker. Single-cell genomics of multiple uncultured stramenopiles reveals underestimated functional diversity across oceans. **2018** *Nature Communications* 9:310

- (32) Becraft, E. D., T. Woyke, J. Jarett, N. Ivanova, F. Godoy-Vitorino, **N. Poulton**, J. M. Brown, J. Brown, C.Y.M. Lau, T. Onstott, J. Eisen, D. Moser, and R. Stepanauskas. Rokubacteria: Genomic giants among the uncultured bacterial Phyla. **2017** *Frontiers in Microbiology*. 8, 2264
- (31) Stepanauskas, R., E. Fergusson, J. Brown, **N. J. Poulton**, B. Tupper, J. Labonté, E. Becraft, J. Brown, M. Pachiadaki, T. Povilaitis, B. Thompson, C. Mascena, W. Bellows, and A. Lubys. Improved genome recovery and integrated cell-size analyses of individual, uncultured microbial cells and viral particles. **2017** *Nature Communications* 8:84
- (30) Stamieszkin, K., **N. J. Poulton**, and A. J. Pershing. Zooplankton grazing and egestion shifts particle size distribution in natural communities. **2017** *Mar. Ecol. Prog. Ser.* 575: 43-56.
- (29) Alberti, A., J. Poulain, S. Engelen, K. Labadie, S. Romac, I. Ferrera, G. Albin, J. Aury, C. Belser, A. Bertrand, C. Cruaud, C. Da Silva, C. Dossat, F. Gavory, S. Gas, J. Guy, M. Haquelle, E. Jacoby, O. Jaillon, A. Lemainque, E. Pelletier, G. Samson, M. Wessner, Genoscope Technical Team, S. Acinas, M. Royo-Llonch, F. Cornejo-Castillo, R. Logares, B. Fernandez-Gomez, C. Bowler, G. Cochrane, C. Amid, P. Ten Hoopen, C. De Vargas, N. Grimsley, E. Desgranges, S. Kandels-Lewis, H. Ogata, **N. Poulton**, M. Sieracki, R. Stepanauskas, M. Sullivan, J. Brum, M. Duhaime, B. Paulos, B. Hurwitz, Tara Ocean Coordinators, S. Pesant, E. Karsenti, and P. Wincker. Viral to metazoan marine plankton nucleotide sequences from the Tara Oceans expedition. Marine plankton from viruses to metazoans: nucleotide sequences from the Tara Oceans expedition. **2017** *Scientific Data* 4:170093 doi: 10.1028/sdata.2017.93
- (28) Wilson, W., I. Gilg, M. Moniruzzaman, E. K. Field, S. Koren, G. R. LeClerc, J. Martinez-Martinez, **N. J. Poulton**, B. K. Swan, R. Stepanauskas, and S. W. Wilhelm. **2017** Genomic exploration of individual giant ocean viruses. *The ISME Journal* 11: 1736-1745.
- (27) Dashkova, V., D. Malashenkov, **N.J. Poulton**, I. Vorobjev, and N. Barteneva. **2017** Imaging flow cytometry for phytoplankton analysis. *Methods* 112: 118-200.
<http://dx.doi.org/10.1016/j.ymeth.2016.05.007>
- (26) Cetinić, I., **N. J. Poulton**, W.H. Slade. **2016**. Characterizing the phytoplankton soup: Pump and plumbing effects on the effects of particle assemblage in underway optical seawater systems. *Optics Express* 24(18), 20703-20715.
- (25) **Poulton, N. J.** **2016**. FlowCAM - Quantification and Classification of Phytoplankton by Imaging Flow Cytometry. In. *Imaging Flow Cytometry: Methods and Protocols* Eds. N. Barteneva, and I. Vorobjev. doi: 10.1007/978-1-4939-3302-0_17 p 237-247.
- (24) Kopf A., M. Bicač, and OSD Consortium (includes **N. J. Poulton**). **2015**. The ocean sampling day consortium. *GigaScience* 4:27 doi: 10.1186/s13742-015-0066-5

- (23) Cetinić, I., M. J. Perry, E. D'Asaro, N. Briggs, **N. Poulton**, M. E. Sieracki, and C. M. Lee. **2015**. Optical community index to assess spatial patchiness during the 2008 North Atlantic Bloom. *Biogeosciences* 12, 2179-2194, doi:10.5194/bg-12-2179-2015
- (22) Martin, P., S. T. Dyrman, M. W. Lomas, **N. Poulton**, and B. A.S. Van Mooy. **2014**. Accumulation and enhanced cycling of polyphosphate by Sargasso Sea plankton in response to low phosphorous. *PNAS*, vol. 111 no. 2 8089-8094.
- (21) Rinke, C., J. Lee, B. Thompson, **N. Poulton**, E. Dmitrieff, R. Malmstrom, R. Stepanauskas, T. Woyke. **2014**. Obtaining genomes from uncultivated environmental microorganisms using FACS-based single-cell genomics. *Nature Protocols*. 9(5):1038-48.
- (20) Swan, B. K., M. Chaffin, M. Martinez-Garcia, H. G. Morrison, E. K. Field, **N. J. Poulton**, E. D. Masland, C. C. Harris, A. Sczyrba, P. S. G. Chain, S. Koren, T. Woyke, and R. Stepanauskas. Genomic and metabolic diversity of Marine Group I Thaumarchaeota in the mesopelagic of two subtropical gyres. **2014**. *PLOS One* 9(4): e95380.
- (19) Swan, B. K., B. Tupper, A. Sczyrba, F. M. Lauro, M. Martinez-Garcia, J. M. Gonzalez, J. J. Wright, N. W. Hanson, H. Luo, B. Thompson, **N. J. Poulton**, Z. C. Landry, P. Schwientek, S. G. Acinas, M. A. Moran, S. J. Giovannoni, S. J. Hallam, R. Cavicchioli, T. Woyke, and R. Stepanauskas. **2013**. Prevalent genome streamlining and latitudinal divergence of surface ocean bacterioplankton. *PNAS*. doi: 10.1073/pnas.1304246110
- (18) Martinez-Garcia, M., D. Brazel, B. Swan, C. Arnosti, P. Chain, K. Reitenga, G. Xie, **N. J. Poulton**, M. Lluesma-Gomez, D. Masland, B. Thompson, W. Bellows, K. Ziervogel, C. Lo, S. Ahmed, C. Gleasner, C. Detter, R. Stepanauskas. **2012**. Capturing single cell genomes of active polysaccharide degraders: an unexpected contribution of Verrucomicrobia. *PLoS ONE*. <http://dx.plos.org/10.1371/journal.pone.0035314>
- (17) Bhattacharaya, D., D. C. Price, H. Yoon, E. C. Yang, **N. J. Poulton**, R. A. Andersen, and S.P. Das. **2012**. Single cell genome analysis supports a link between phagotrophy and primary plastid endosymbiosis. *Sci. Rep.* 2:356 doi: 10.1038/srep00356
- (16) Karsenti, E., S. G. Acinas, P. Bork, C. Bowler, C. De Vargas et al. and the **TARA Consortium (N. J. Poulton – member)**. **2011** A Holistic Approach to Marine Ecosystems Biology. *PLoS Biol* 9(10): e1001177. Doi: 10.1371/journal.pbio.1001177
- (15) Martinez-Garcia, M., D. Brazel, **N. J. Poulton**, B. K. Swan, M. Lluesma-Gomez, D. Masland, M. E. Sieracki, and R. Stepanauskas. **2011**. Unveiling in situ interactions between marine protists and bacteria through single cell sequencing. *The ISME Journal*. doi:10.1038/ismej.2011.126
- (14) Martinez-Martinez, J, **N. J. Poulton**, R. Stepanauskas, M. E. Sieracki, and W. H. Wilson. **2011**. Targeted sorting of single virus-infected unicellular marine algae. *PLoS ONE* 6(7): e22520. <http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0022520>

- (13) Swan, B. K., M. M. Martinez-Garcia, C. M. Preston, A. Sczyrba, T. Woyke, D. Lamy, T. Reinthaler, **N. J. Poulton**, E. D. P. Masland, M Lluesma-Gomez, M. E. Sieracki, E. F. DeLong, G.J. Herndl, and R. Stepanauskas. **2011**. Potential for chemolithoautotrophy among ubiquitous bacteria lineages in the dark ocean. *Science*. 333 (6047): 1296-1300.
- (12) Martinez-Garcia, M. B. K. Swan, **N. J. Poulton**, M. L. Gomez, D. Masland, M. E. Sieracki, and R. Stepanauskas. **2011**. High throughput single cell sequencing identifies predominant phytoheterotrophs and chemoautotrophs in temperate freshwater bacterioplankton. *ISME Journal* doi: 10.1038/ismej.2011.84
- (11) Fleming, EJ, AE Landgon, M Martinez-Garcia, R. Stepanauskas, **N. J. Poulton**, D. Masland, D. Emerson. **2011**. What's new is old: resolving the identity of *Leptothrix ochracea* using single cell genomics, pyrosequencing and FISH. *PLoS ONE* 6(3): e17769.
<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0017769>
- (10) Heywood, JL, ME Sieracki, W Bellows, **N. J. Poulton**, R Stepanauskas. **2010**. Capturing diversity of marine heterotrophic protists – one cell at a time. *ISME Journal* DOI: ISMEJ.2010.155
- (9) **Poulton, N. J.** and J. Martin. **2010**. Imaging flow cytometry for quantitative phytoplankton analysis — FlowCAM. In: Intergovernmental Oceanographic Commission of ©UNESCO. Karlson, B., Cusack, C. and Bresnan, E. (editors). Microscopic and molecular methods for quantitative phytoplankton analysis. Paris, UNESCO. (IOC Manuals and Guides, no. 55.) (IOC/2010/MG/55), 110 pages.
- (8) Yench, C. S., B. E. Lapointe, **N. Poulton**, D. A. Phinney. **2008**. Anatomy of a red tide bloom off the southwest coast of Florida. *Harmful Algae*. 7: 817-826.
- (7) Orcutt, K. M., K. Gundersen, M. L. Wells, **N. J. Poulton**, M. E. Sieracki and G. J. Smith. **2008** Lighting up phytoplankton cells with quantum dots. *Limnol. Oceanogr.: Methods* 6: 653-658.
- (6) **Poulton, N. J.**, H. Nelson, and C. Sieracki. **2008**. Identifying and detecting harmful algal bloom species using a color imaging flow cytometer (FlowCAM®). Proceedings of the 12th International Conference on Harmful Algae, Copenhagen, Denmark.
- (5) Sieracki, M.E., I. C. Hobson, E. C. Thier, **N. J. Poulton**, R. Goericke. **2006**. Distribution of planktonic aerobic anoxygenic photoheterotrophic bacteria in the northwest Atlantic. *Limnology and Oceanography*. 51: 38-46.
- (4) **Poulton, N. J.**, B. A. Keafer, and D. M. Anderson. **2005**. Toxin variability in natural population of *Alexandrium fundyense* in Casco Bay, Maine – evidence of nitrogen limitation. *Deep Sea Research II*. 52: 2501-2521.
- (3) Jasti. S., M.E. Sieracki, **N.J. Poulton**, M. W. Giewat, and J. N. Rooney-Varga. **2005**. Phylogenetic diversity and specificity of bacteria closely associated with *Alexandrium* spp. and other phytoplankton. *Appl. Environ. Micro*. 71(7): 3483-3494.

- (2) Sieracki, M., **N. Poulton** and N. Crosbie. **2005**. Automated isolation Techniques for Microalgae. In: Algal Culture Techniques Ed. R. A. Andersen. Elsevier. p. 450.
- (1) Rose, J. M., D. A. Caron, M. E. Sieracki and **N. J. Poulton**. **2004**. Counting heterotrophic nanoplanktonic protists in cultures and in aquatic communities by flow cytometry. *Aquatic Microbial Ecology* 34: 263-277.

IV. OTHER PUBLICATIONS and TECHNICAL REPORTS (NOT PEER-REVIEWED)

- (5) Neeley, A., Beaulieu, S., Proctor, C., Cetinić, I., Futrelle, J., Soto Ramos, I., Sosik, H., Devred, E., Karp-Boss, L., Picheral, M., **Poulton, N.**, Roesler, C., and Shepherd, A. **2021**: Standards and practices for reporting plankton and other particle observations from images. 38pp. DOI: [10.1575/1912/27377](https://doi.org/10.1575/1912/27377).
- (4) Li, W., **N. J. Poulton**, M. Sieracki, J. Martin, and M. LeGresley. **2012**. 3. Phytoplankton Microbial Plankton of the Northwest Atlantic Shelf. In: O'Brien, T., W.K.W. Li, and X. A. G. Moran (editors). ICES Phytoplankton and Microbial Plankton Status Report 2009/2010. ICES Cooperative Research Report No. 310. 196 pp.
- (3) Sieracki, M.E. and **N. J. Poulton**. **2011**. The 2008 North Atlantic Bloom Experiment – Abundance and biomass determination of heterotrophic and autotrophic bacteria, phototrophic and heterotrophic nanoplankton and microplankton including instrument calibration. BCO-DMO NAB08 Calibration Report 6pp. http://data.bco-dmo.org/NAB08/Phytoplankton_Carbon-NAB08.pdf
- (2) **Poulton, N.J.** Testing ballast water for zooplankton, *Ocean Systems*, November/December **2008**, Pages 22-25.
- (1) **Poulton, N.J.** ECOHAB-GOM Experiments Study Toxic Dinoflagellate *Alexandrium*. *Coastal Research*, Rinehart Coastal Research Center, Woods Hole Oceanographic Institution, Vol. 3, No. 1 June **1999**. Page 3.

V. MANUSCRIPTS In Review

Lindsay, M. R., T. D'Angelo, J. H. Munson-McGee, A. Saidi-Mehrabad, M. Devlin, J. McGonigle, E. Goodell, M. Herring, L. Lubelczyk, C. Mascena, J. Brown, G. Gavelis, J. Liu, D J Yousavich, S. D. Hamilton-Brehm, B. P. Hedlund, S. Lang, T. Treude, **N. J. Poulton**, R. Stepanauskas, D. P. Moser, D. Emerson, B. N. Orcutt. Species-resolved, single-cell respiration rates reveal dominance of sulfate reduction in a deep continental subsurface ecosystem *PNAS* (In review).

VI. CONTRIBUTED PRESENTATIONS at National and International Mtgs

- Jacob M. M., M. Lindsay, J. Brown, T. D'Angelo, J. Brown, L. Lubelczyk, P. Tomko, D. Emerson, B. Orcutt, N. Poulton, G. Herndl, R. Stepanauskas. Decoupling of respiration rates and abundance in marine prokaryoplankton. **CYTO 2023**, International Society for the Advancement of Cytometry, Montréal, Canada
- Cetinić, I., W. Slade, N. Poulton, P. K. Lange, J. Werdell. Beauty in the eye of the observatory system, or is it? **ASLO 2020** Ocean Sciences Meeting, Association for the Sciences of Limnology and Oceanography, San Diego, CA, USA
- Poulton, N.J., H. Nelson, H. A. Wright, L. Lubelczyk, C. Cobb. Detection and Enumeration of Microplastics Using Imaging Flow Cytometry (FlowCam), **ASLO 2019** Aquatic Sciences Meeting, Association for the Sciences of Limnology and Oceanography, San Juan, PR
- Poulton, N.J. Experiential Learning in the Aquatic Sciences: Bigelow Laboratory – BLOOM Programs. **ASLO 2019** Aquatic Sciences Meeting, Association for the Sciences of Limnology and Oceanography, San Juan, Puerto Rico
- Dawydiak, W., L. Lubelczyk, K. Posman, S. Archer, N. Poulton. A Prey Saturation Approach as an Improved Method for Estimating Microzooplankton Grazing Rates. **ASLO 2019** Aquatic Sciences Meeting, Association for the Sciences of Limnology and Oceanography, San Juan, Puerto Rico
- Poulton, N. J., L. C. Lubelczyk, C. Heil, C. Adams, and C. Newell. Seasonality and Size Selective Feeding of the Eastern Oyster (*Crassostrea Virginica*) on phytoplankton in the Damariscotta, River, Maine **CYTO 2018** - Congress for the International Society for the Advancement of Cytometry (**ISAC**), Prague, Czech Republic
- Park, J.M., S.D. Archer, K. Hubbard, N. Poulton, P.D. Countway. Effects of Phosphate Limitation on Cell Growth and Toxin Production in Pseudo-Nitzschia in the Gulf of Maine. **ASLO 2018**. Ocean Sciences Meeting, Association for the Sciences of Limnology and Oceanography, Portland OR
- Lubelczyk, L. C., N.J Poulton, C. Heil, C. Adams, and C. Newell. Seasonality and Size Selective Feeding of the Eastern Oyster (*Crassostrea Virginica*) on phytoplankton in the Damariscotta, River, Maine. **2017 Northeast Aquaculture Conference (NACE)**. Providence, RI, USA
- Poulton, N.J., L. Lubelczyk. 2016 “Determining phytoplankton community composition and biomass from different biogeochemical regimes in the N. Atlantic gyre using flow and imaging cytometry.” **CYTO 2016** – Congress for the International Society for the Advancement of Cytometry (ISAC), Seattle, WA, USA
- Poulton, N. J., W. Slade, L. Lubelczyk, M. J. Perry, I. Cetinic. 2016 “Phytoplankton biomass and composition variability within different biogeochemical regimes in the N. Atlantic during the 2014 Ship-Aircraft Bio-Optical Research (SABOR) experiment. Ocean Sciences Meeting, **ASLO 2016**. New Orleans, LA, USA.

- Poulton, N. J., A. E. Hoeglund, S. R. Anderson, E. M. Haugen, P. D. Countway. 2015 “Flow Cytometric Analysis of Protozoan Grazing on Marine Cyanobacteria: Bulk and Single Cell Sorting Tools to Determine the Molecular Diversity of Grazers.” **CYTO 2015 - ISAC**, Glasgow. UK
- Poulton, N.J., W. Slade, I. Cetinic. 2015 “Characterizing the Phytoplankton Soup: Pump and Plumbing effects on the particle assembly in underway uncontaminated seawater systems. NASA Carbon & Ecosystems Joint Science Workshop, College Park, MD, USA
- Poulton, N. J., B. Thompson, B. Tupper, T. Cucci, E. Their, I. Gilg, E. Haugen, and M. Sieracki. 2012. “Phenology of Plankton During a Ten-Year Study in Booth Bay, Maine” Ocean Sciences Meeting, **ASLO 2012**. Salt Lake City, UT, USA.
- Poulton, N. J., B. Thompson, B. Tupper, T. Cucci, E. Their, I. Gilg and M. Sieracki 2009. “Monitoring Microbial Patterns in Plankton During a Multiyear Study in Boothbay Harbor, Maine” Gulf of Maine Research Symposium, St. Andrews, CANADA.
- Poulton, N.J., H. Nelson, and C. Sieracki. 2009. “A New Method to Detect and Identify Cyanobacteria using a Continuous Imaging Particle Analyzer (FlowCAM)”, Ocean Sciences, American Society of Limnology and Oceanography Conference, Nice, FRANCE
- Poulton, N. J., H. Nelson, and K. Peterson 2008. “An evaluation of viability assays using a continuous imaging particle analyzer (FlowCAM) for ballast water analysis and regulatory compliance.” Aquatic Sciences, American Society of Limnology and Oceanography Conference, Orlando, FL, USA.
- Poulton, N. J., S. Ellis, H. Nelson. 2007. “Using an Imaging-in-flow Particle Analyzer (FlowCAM) for Phytoplankton Analysis and Classification.” American Society of Limnology and Oceanography Conference. Santa Fe, NM, USA.
- Poulton, N. J., H. Nelson, C. Sieracki. 2006. “Identifying and Detecting Harmful Algal Bloom Species using a Color Imaging Flow Cytometer (FlowCAM).” 12th International Conference on Harmful Algae. Copenhagen, DENMARK.
- Poulton, N. J. and M. E. Sieracki. 2006. “Using Flow Cytometry and Imaging as a Plankton Teaching Tool.” Session Chair, “Emerging Challenges in Aquatic Sciences” American Society of Limnology and Oceanography Conference, Victoria, CANADA.
- Poulton, N. J., L. Brown, and C. Sieracki. 2005. “Detection and enumeration of harmful algal bloom species using a continuous imaging fluid particle analyzer (FlowCAM).” 3rd US Symposium on Harmful Algae. Woods Hole, MA, USA.
- Poulton, N. J., R. A. Andersen, J. Sexton, and M. E. Sieracki. 2005. “Efficient single-cell isolation of picoeukaryotes using flow cytometric cell sorting.” Northeast Algal Symposium. Rockland, ME, USA.

- Poulton, N. J., and L. Brown. 2005. "Automated quantification of *M. incognita* nematodes in bioassays using a fluid-borne particle imaging system." American Phytopathological Society. Austin, TX. USA.
- Poulton, N. J., I. C. Gilg, E. C. Thier, and M. E. Sieracki. 2004. "Discrimination between CTC-active bacteria and *Prochlorococcus* from natural samples using dual beam flow cytometry." American Society of Limnology and Oceanography Conference. Honolulu, HI. USA.
- Poulton, N. J., M. Sieracki, C. O'Kelly, M. Keller, C. Gobler, E. Thier, and I. Hobson. 2002. "Spring Plankton Community Structure and Dynamics in Long Island Bays with and without Brown Tide Blooms" 10th International Conference on Harmful Algal Blooms, St. Pete's Beach, FL. USA.
- Poulton, N. J., J. G. MacIntyre, J. J. Cullen, and D. M. Anderson. 2000. "Physiological diagnostics and behavior of the toxic dinoflagellate *Alexandrium fundyense*, in Casco Bay, Maine – evidence of nitrogen limitation." Symposium on Harmful Marine Algae in the United States. Woods Hole, MA, USA.
- Poulton, N. J., J. J. Cullen, J. G. MacIntyre, and D. M. Anderson. 2000 9th International Conference on Harmful Algal Blooms, Hobart, Tasmania, AUSTRALIA.
- Poulton, N. J. and D. M. Anderson. 1999. "Species-specific isolation and physiological characterization of the toxic dinoflagellate, *Alexandrium fundyense* separated from field samples using immunomagnetic beads." American Society of Limnology and Oceanography Conference, Santa Fe, NM. USA.
- Poulton, N. J., J.J. Cullen, G. MacIntyre, and D.M. Anderson. 1998. "Physiological effects of nitrate limitation on the toxic dinoflagellate, *Alexandrium tamarense* from Casco Bay, Maine." 52nd Annual Meeting of the Phycological Society of America, Flagstaff, AZ., USA.
- Poulton, N. J., B. Keafer, and D. M. Anderson. 1997 8th International Conference on Harmful Algal Blooms, Vigo, SPAIN.

VII. INVITED LECTURES

- 2023 Invited Lecturer, Joint Genome Institute, NeLLi Symposium 2023: From New Lineages of Life to New Functions Symposium. Talk entitled, "Assessing microbial activity and community diversity in marine environments using single cell sorting and genomics." August 25, 2023
- 2022 Guest Lecturer, 23rd INDO-US Flow Cytometry Workshop, talk entitled, "*Exploring Microbial Biodiversity using Flow Cytometry: Taking a Dive into the Ocean*" September 2022.
- 2021 Guest Lecturer, Graduate Course on Flow and Image Cytometry at Roswell Park and University of Buffalo, entitled, "*Exploring Microbial Biodiversity using Flow Cytometry: Taking a Dive into the Ocean*" December 2021.

- 2021 Invited Seminar, Royal Microscopical Society, Flow Cytometry UK 2021 (Virtual), “*Exploring Microbial Biodiversity using Imaging Cytometry*” November 2021.
- 2021 Invited Speaker, Café Sci. (Public Seminar), Bigelow Laboratory “*Persistent Plastics: Using Familiar Tools in New Ways to Explore the Impact of Microplastics*” August 3, 2021. <https://www.bigelow.org/news/cafe-sci.html>
- 2020 Invited Seminar, METRO Flow User Group (Virtual), “Exploring Marine Environments and Monitoring Microbial Patterns using Flow Cytometry” November 2020.
- 2020 Plenary Speaker, CYTO 2020 VIRTUAL, “Technologies Breakthroughs in Aquatic Cytometry – a new understanding of the ocean microbiome” August 2020.
- 2020 Invited Seminar, BIO-RAD Live Virtual Symposium, “Exploring Aquatic Microbial Biodiversity Using Flow Cytometry”, May 2020.
- 2019 Invited Seminar, CYTO U Webinar, International Society for the Advancement of Cytometry Co-Presenter, “Challenging samples within an SRL Core” October 2019.
- 2019 Invited Lecturer, University of Southern Maine, Invertebrate Zoology Course, “Protists – Phytoplankton and Protozoa – Mixotrophy, Instruments and Applications” Sept 2019
- 2019 Invited Speaker, CYTO2019 International Society for the Advancement of Cytometry Tutorial, “Bring it on! Challenging samples within an SRL Core, from A to Z: Acellular organelles to Zooplankton.” June 2019
- 2019 Invited Speaker, CCMA Canadian Cytometry and Microscopy Association (CCMA). “Exploring Aquatic Microbial Biodiversity using Flow Cytometry and Single Cell Genomics” June 2019
- 2019 Invited Speaker, The Association for Biomolecular Resource Facilities (ABRF), “Imaging Flow Cytometry for Phytoplankton Analysis: Instrumentation and Applications” Mar 2019
- 2018 Invited Speaker, Great Lakes International Imaging and Flow Cytometry Association (GLIIFCA), “Exploring Aquatic Microbial Biodiversity using Cytometry and Single Cell Genomics” Oct 2018
- 2018 Invited Speaker, SouthEast Flow Cytometry Interest Group (SEFCIG), “Exploring marine microbial biodiversity using Single Cell Genomics: Sorting the Uncultivable at sea”
- 2017 Presenter, Symposium: High throughput methods for application in marine biodiversity time series, Hannover, Germany, “Flow and Imaging Cytometry Tools, A Marine Coastal Time Series (Booth Bay, ME USA).”
- 2016 Invited Speaker, University of Maine. “Assessing Phytoplankton Biomass and Composition Variability in the N. Atlantic”

- 2016 Invited Plenary Speaker, University of Sydney, Australasian Cytometry Society Annual Meeting, “Single Cell: Genomics Sorting the Cultured and Uncultivable, One cell at a time” Nov 2016
- 2016 Invited Speaker, Nazarbayev University, Astana Kazakhstan. “Plankton Dynamics using Aquatic Cytometry in a Changing Ocean.”
- 2014 Invited Speaker, University of Oregon. “Protozoan Grazing on Marine Cyanobacteria: Molecular diversity of grazers and their impact on a seasonal bloom in Booth Bay, Maine”
- 2013 Invited Speaker, Belfast Watershed Coalition, Belfast Public Library, “Power of Plankton – Stories from the TARA Oceans Expedition”
- 2012 Invited Speaker, Sea State Public Lecture Series, Gulf of Maine Research Institute, Oct 2012. Title, “Power of Plankton: The Microbial Community Structure of the Gulf of Maine”
- 2012 Invited Speaker, Workshop – The Gulf of Maine in a Changing Climate, June 12-13, 2012 – Title, “Monitoring Microbial Patterns in Plankton, During a 10 Year Study in Boothbay, Maine.”
- 2011 Invited Speaker. Café Scientifqué (Public Seminar), Boothbay Harbor, ME. Title, “Sea Truth – Chasing the North Atlantic Bloom”.
- 2010 Invited Speaker. Becton Dickinson Influx User Group BD Influx Users Group July 2010. Title, “Flow Cytometry in Aquatic Sciences” Baltimore, MD
- 2010 Invited Speaker. N. Poulton, M. Sieracki, C. de Vargas, F. Not, and O. Jaillion. Title, “Optical Detection and Single Cell Genomics of Marine Protists from the TARA Oceans Expedition”
- 2010 Invited Speaker. Cornerstones of Science, Curtis Memorial Library, Brunswick Maine N. Title: “Women in Science, Careers in Ocean Science”
- 2010 Invited Speaker. Working Group for Phytoplankton and Microbial Ecology (WGPME) ICES Working Group, Title, “Flow cytometric monitoring of microbial patterns during a 10 year study in Boothbay Harbor, ME” Aberdeen, Scotland
- 2005 Invited Speaker, GEOHAB Open Science Meeting on Harmful Algal Blooms and Stratification. Paris, FRANCE. Title, “Detection and Enumeration of Harmful Algal Bloom Species using a Continuous Imaging Fluid Particle Analyzer (FlowCAM)” N. Poulton, H. Nelson, L. Brown and C. Sieracki
- 2005 Invited Speaker. Café Scientifqué (Public Seminar). Boothbay Harbor, ME. Title, “RED TIDES – In the Gulf of Maine, The Bloom of 2005 and the Future”

- 2005 Invited Lecturer. Texas A&M. Title(s), “Microbial Ecology and Flow Cytometry in Aquatic Sciences.” & “Digital Imaging Particle Analysis for Aquatic Applications”
- 2003 Invited Speaker. Life Science User Group Mtg (Moflo – Cytomation). Title: “Aquatic Flow Cytometry: Analysis and Sorting of Plankton and Bacteria” Fort Collins, CO.
- 2002 Invited Lecturer. University of Massachusetts at Lowell, MA Title, “Flow Cytometry in Aquatic Microbiology: Current and Future Directions.”
- 2001 Keynote Speaker. Massachusetts Marine Science Educators Symposium, University of Massachusetts, Dartmouth, MA. Title, “Harmful Algal Blooms: Are the Oceans at Risk? Are we at Risk?”

VIII. GRANTS / CONTRACTS – PLANNED SUBMISSIONS

- 2024 BioGOSHIP request in collaboration with NOC

IX. GRANTS / CONTRACTS AWARDED – PAST, CURRENT & PENDING:

- 2024 (Verbally awarded for 4 yrs) NASA PACE Validation: Leveraging ships of opportunity to provide particle stock measurements for PACE validation. **\$557,401** (Lead PI).
- 2023 (Pending) National Science Foundation IEP, Collaborative Research: PhysMix – The physiological bases of mixotrophy in green algae. **\$731,115** (co-PI, John Burns lead)
- 2023 (Pending) National Science Foundation Center: BioFoundry: National Center for Environmental Single Cell Genomics **\$23,990,117** (co-PI, Ramunas Stepanauskas lead)
- 2023 (Pending) National Science Foundation OCE, Collaborative Research: Large-scale environmental regulation of phytoplankton growth across levels of biological organization. **\$584,719.**
- 2023 (CURRENT 11/1/2023 for 2 yrs) NASA Exobiology Grant: Pilot Study: Active-Life Detection Technologies and Lineage-Resolved Microbial Process Rates in an Ocean World Analog Subsurface Ecosystem **\$551,254** (co-PI, Melody Lindsay lead)
- 2022 (CURRENT 1/1/2023-12/31/2023) Minderoo Foundation (W. Australia) eCell Method Development **\$14,467** Study 2 (co-PI)

- 2022 (CURRENT 3/1/2023 for 3 yrs) National Science Foundation OCE, Collaborative Research: Investigating the relationship between size and the balance between carbon acquisition modes in mixotrophic protists **\$536,104** (LEAD PI with K. Stamieszkin)
- 2021 (CURRENT with NCE) Northeast SARE Research for Novel Approaches: New Approaches to Seaweed Aquaculture: developing a biosecure, reliable seed stock for the emergent Northeast edible seaweed industry **\$199,035** (LEAD PI)
- 2019 Spencer Entrepreneurial Fund: N. Poulton. Nanoplastic (<50 µm) detection using Nile Red: enumeration, size characterization, and chemical composition in Environmental Samples using flow cytometry. (7 months) full award: **\$24,983**
- 2018 (CURRENT with NCE) National Science Foundation OTIC R. Stepanauskas, N. Poulton, and Ger van den Eng. Development and validation of an imaging cell sorter for integrated single cell genome and morphology analyses. OCE-1829879 (3 years 2018-2021 + 2 NCE 2023) full award: **\$1,396,269**
- 2018 (CURRENT with NCE) NSF EPSCOR RII Track-2 FEC: R. Stepanauskas, B. Orcutt, D. Emerson, N. Poulton, D. Moser, and K. Ziervogel. Single cell genome-to-phenome: Integrating genome and phenome analyses of individual microbial cells in complex microbiomes OIA-1826734 (4 years + NCE– 2018-2024): **\$5,989,591**
- 2018 N. Poulton and S. Archer, J. Martinez-Martinez, Fernandez-Robeldo, J. A., N. Price Co-PIs – National Science Foundation, FSML Modernizing the Flow and Imaging Capabilities at Bigelow Laboratory for Ocean Sciences. DBI- 1821065 (3 years 2018-2021) full award: **\$297,402**
- 2018 N. Price and N. Poulton Co-PIs –Spencer Entrepreneurial Fund. “Developing a reliable seed catalog for the sea green farming industry Version 2.0”, **\$40,000**
- 2017 M. Lomas, N. Poulton, N. Price co-PIs – Maine Technology Institute **\$93,600** Acquisition of equipment to support the development of the Maine Algal Economy (5 years).
- 2017 S. Archer and N. Poulton Co-PIs – National Science Foundation EAGER. A saturation approach to microzooplankton grazing rate. **\$297,427** (2017-2020 including 2 NCE)
- 2017 N. Price and N. Poulton Co-PIs – Maine Technology Institute (MTI), “Developing a reliable seed catalog for the sea green farming industry”, **\$20,778.00**
- 2016 N. Price and N. Poulton Co-PIs – The Sash A. and Mary M. Spencer Entrepreneurial Fund. “Developing a reliable seed catalog for the sea green farming industry”, **\$25,000** (1 Year)
- 2016 C. Heil and N. Poulton Co-PIs – NSF EPSCOR SEANET Mini-grant. “How size selective are oysters? Size fractionated analysis of plankton communities in support of SEANET buoy data collection and geochemical and oyster growth models”, **\$11,994** (1 Year).
- 2016 N. Poulton – PI – Analysis for Pico-Nanophytoplankton and Bacterioplankton via flow cytometry, Environment Canada Subcontract, **\$16,100** (1 Year) 2016

- 2013 N. Poulton – PI - Analysis for Pico-Nanophytoplankton and Bacterioplankton, Environment Canada Subcontract # KW405-13-0897 **\$67,900** (3 Years) 2013-2015
- 2012 NASA subcontract Award # Co-PI (Cetinic, Slade, Poulton and Perry) Multi-sensor, ecosystem-based approaches for estimation of particulate organic carbon. **\$308,531** (3 Years + 6 month extension) 2013-2017
- 2012 NSF - OCE Award # 1233788 Co-PI (Countway, Poulton & Palenik – *formerly* Sieracki) Collaborative Research: Seasonal bloom dynamics: *Synechococcus*-grazer interactions as a model system. **\$756,753** (3 Years + two year NCE) 2012-2017
- 2010 NSF – OCE Award # 1031049 PI (Poulton, Stepanauskas, Yoon – *formerly* Sieracki) Diversity of marine protists: single cell genomics and imaging for TARA Oceans. **\$331,607** (2 Years + NCE) 2010-2013
- 2010 Analysis for Pico-Nanophytoplankton and Bacterioplankton, Environment Canada Subcontract # KW405-10-0870 **\$83,059** (3 Years) 2010-2013
- 2008 Using FlowCAM Technology to Measure High Frequency Spatial and Temporal Variation in Phytoplankton and Zooplankton Species Composition and Develop State of the Art Plankton Monitoring CALFED subcontract #1047 **\$24,000** (2 Years)
- 2007 NSF – OCE Award # 0648346 Co-PI (Fields, Milligan and Poulton – *formerly* Sieracki) Collaborative Research: The role of phytoplankton ballast material in deterring copepod grazing. **\$462,847** (3 Years + NCE) 2007-2011

X. REVIEW of PROPOSALS AND MANUSCRIPTS

A. Reviewer for the following Scientific Journals:

Algal Research, Cytometry A, Marine Ecology Progress Series, Journal of Phycology, Harmful Algae, Environmental Microbiology and Environmental Microbiology Reports, Journal of Plankton Research, Limnology and Oceanography – Methods, Limnology and Oceanography, PlosONE, Deep Sea Research II and Ecotoxicology, Frontiers, Water

B. Reviewer for National Science Foundation, including Biological, Chemical Oceanography Programs & MRI & National Oceanic and Atmospheric Administration (NOAA).

XI. HONORS and AWARDS:

- 2017-2021 International Society for the Advancement of Cytometry (ISAC), Shared Resource Lab (SRL) Emerging Leader
- 1995 EPA STAR Graduate Student Fellowship
- 1993 Woods Hole Oceanographic Institution Summer Student Fellowship, Advisor: Dr. John Waterbury
- 1991 Sea Grant Fellowship for Undergraduate Research, *NASA Goddard Space Flight Center* Advisors: Dr. Gene Feldman and Dr. Lawrence Harding

XII. RESEARCH CRUISES:

Scientist, *R/V Endeavor* (EN616), July 2018
Chief Scientist, *R/V Ira C.*, periodically/monthly Fall 2015 - 2019
Scientist, *R/V New Horizon* (NH1418), Sept 2014
Scientist, *R/V Endeavor* (EN543), Aug 2014
Scientist, *R/V Atlantic Explorer* (AE1319), Aug 2013
Chief Scientist, *R/V Ira C.*, periodically/monthly Fall 2012 & 2013
Chief Scientist, *S/V Tara* (TARA Oceans Expedition), Nov 2010
Scientist, *R/V Knorr* (KN-193-03), May 2008
Scientist, *R/V Knorr* (KN-192-05), Nov-Dec 2007
Scientist, *R/V Gulf Challenger*, periodically/monthly Mar 2005-May 2007
Scientist, *R/V Cape Hatteras* (CH0402), Mar 2002
Scientist, *R/V Cape Hatteras* (CH1301). Oct 2001
Scientist, *R/V Cape Hatteras* (CH0901). Aug 2001
Scientist, *R/V Gulf Challenger*, Spring 1998
Scientist/Student, *SSV Westward*, June 1994
Scientist, *R/V Columbus Iselin*, July 1993

XIII. OTHER PROFESSIONAL ACTIVITIES

2023-pres. Postdoctoral Development Coordinator at Bigelow Laboratory. Develop and host a year long seminar series (~monthly) for career development of postdocs working at Bigelow.

2023-2024 – Co-Organizer - OCB Working Group on Standards and Best Practices for the Collection and Assessment of Operational Phytoplankton Observations (using Imaging Cytometry)

2020 – pres. – Councilor (Board) – International Society for the Advancement of Cytometry

2022- pres. - Co-Chair, ICES Working Group on Phytoplankton and Microbial Ecology (WGPME)

2019 – Co-Organizer of the 4th Microbial Single Cell Genomics Workshop (95+ attendees) held by Bigelow Laboratory at the Spruce Point Inn, Boothbay Harbor, ME.

2013 - Present – Member of the Board of Directors for the Boothbay Sea and Science Center.

2012–2018 President and Chairman of the Board of Trustees for the Boothbay Harbor Memorial Library (BHML). Completed a \$550,000 renovation of the Library in 2014.

2010 Sept - Coordinated the 2nd Single Cell Genomics Workshop (75+ attendees) held by *Bigelow Laboratory* at the Spruce Point Inn, Boothbay Harbor, ME.

XIV. SYNERGISTIC ACTIVITIES

Member, International Society for the Advancement of Cytometry (ISAC) 2015- present

Member, ICES Working Group on Phytoplankton and Microbial Ecology (WGPME) 2010-2021
Member, Association for the Sciences of Limnology and Oceanography 1997-2002, 2005-present
Member/Organizer, OCB Working Group on Standards and Best Practices for the Collection and Assessment of Operational Phytoplankton Observations 2023-2024
Member, OCB Working Group on Mixotrophy 2021-2023
Member, OCB Working Group Imaging Flow Cytometry 2019-2021
COSEE Ocean Systems – Webinar Series Presenter – 2011 North Atlantic Bloom
<http://cosee.umaine.edu/programs/webinars/nab/>

XV. CERTIFICATIONS

2019 CPR First Aid
2013 CPR/AED Certification
2001 DakoCytomation MoFlo cell sorter flow cytometer operator Certification
1996-2000 Woods Hole Oceanographic Institution Scientific Diver
1995 NAUI Advanced Open Water Certification
1989 PADI Open Water Scuba Diving Certification #9001251423

XVI. STUDENTS ADVISED

Nikita Colling, Undergraduate, Cornell College – Fall Semester 2023
Jay Krithivas, Undergraduate, Northeastern University – Summer 2023 REU
Mason Trotter, Undergraduate, Maine Maritime Academy – Fall Semester 2022
Chris Reardon, Undergraduate, Colby College – Fall Semester 2022
Sydney Lewis, Undergraduate, University of Hawaii – Fall Semester 2021
Mike Staiger, Undergraduate, Colby College – Fall Semester 2020, Summer 2021
Alexis Oetterer, Undergraduate, Truman State University, Summer 2020 NSF REU
Taylor Kruger, Undergraduate, Colby College – Fall Semester 2019
Moriah Kunes, Undergraduate, University of Rochester – co-mentored Summer 2019 NSF REU
Charlie Cobb, Undergraduate, Colby College – Fall Semester 2018
Walter Dawydiak, Undergraduate, University of Pennsylvania – Summer 2018 NSF REU
Kathryn McPhee, Undergraduate, Scripps College – Summer 2017, 2018
Julia Park, Undergraduate, Colby College - Fall Semester 2016
Andrew Hirzel, Undergraduate, University of Miami - Summer 2016 NSF REU
Robert Morefield, Undergraduate, University of Southern Maine - Summer 2015 NSF REU
Alicia Hoeglund, Undergraduate, Truman State University – Summer 2014 & 2015 NSF REU
Sean Anderson, Undergraduate, Old Dominion University – Summer/Fall Intern 2013
Wilton Burns, Undergraduate, University of North Carolina, Summer 2013 NSF REU
Norma Zoe Neszi, Ph.D. Candidate, Institute de Ciencies del Mar, Barcelona, Spain, Fall 2012
Emily Bell-Hoerth, Undergraduate, Earlham College, Summer 2012 NSF REU
Zakary Jacques, Undergraduate, Colby College, Summer 2012 NSF REU
Kate Hamre, Undergraduate, Colby College, Summer 2011 NSF REU
Ashley Couture, Undergraduate, University of Maine, Summer 2009 NSF REU

XVII. POSTDOCTORAL MENTORING

Isaac Miller (2024-present)

Jacob Munson-McGee (2019-2023)

Ph.D. Advisor: Donald Anderson, Ph.D. (Woods Hole Oceanographic Institution)

Post Doctoral Advisor: Michael Sieracki, Ph.D. (National Science Foundation)