

Curriculum Vitae

Nicole J. Poulton

Director, J.J. MacIsaac Facility for Aquatic Cytometry

Bigelow Laboratory for Ocean Sciences

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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, Virginia Polytechnic Institute and State University (*Virginia Tech*)
B.A. Chemistry

II. PROFESSIONAL & TEACHING EXPERIENCE:

A. Research Positions

2013- Pres. **Director, J.J. MacIsaac Facility for Aquatic Cytometry, Bigelow Laboratory, ME**
Direct and manage a multi-user cytometry facility, 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 Facility provides state-of-the-art space for the latest cytometric instruments, imaging technologies, and applications.

2008- Pres. **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 and imaging-in-flow systems (FlowCAM[®]).

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

2012, 2013 & 2015 Research Professor, *Colby College*, Life on the Ocean Wave: Field Methods Course (Fall Semesters)

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

2003-2015 Co-Instructor, Algal Culturing Techniques, *Bigelow Laboratory for Ocean Sciences*

2002-2006 Co-Instructor, **Introduction to Flow Cytometry for Aquatic Sciences**. *Bigelow Laboratory for Ocean Science*, ME

2004 Co-Instructor, **Advanced Flow Cytometry for the Aquatic Sciences**. *Bigelow Laboratory for Ocean Sciences*, ME

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 Private Boys High School Program

2001 Lecturer, *Boston College*, Introduction to Oceanography, Dept. of Geology and Geophysics *Spring Semester*

III. PEER REVIEWED PUBLICATIONS:

- (25) **Poulton, N. J. 2015**. 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. Bicak, 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. Dyhrman, 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. doi: 10.1038/nprot.2014.067
- (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. doi:10.1371/journal.pone.0095380.
- (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)

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.

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

Poulton, N.J. Testing ballast water for zooplankton, *Ocean Systems*, November/December **2008**, Pages 22-25.

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 Submitted for Review

Cetinic, I., **N. J. Poulton**, W. H. Slade. Characterizing the Phytoplankton Soup: Pump and Plumbing effects on the particle assemblages in underway optical seawater systems. *Optics Express*.

Dashkova, V., D. Malashenkov, **N. J. Poulton**, I. Vorobjev, and N. S. Barteneva. Imaging flow cytometry for microalgae (phytoplankton) analysis. *Methods*.

VI. MANUSCRIPTS In Preparation

Stepanauskas, R., E. Fergusson, J. Brown, **N. J. Poulton**, B. Tupper, T. Povilaitis, J. Labonté, E. Becraft, B. Thompson, C. Mascena, J. Brown, W. Bellows, R. Jeremian, A. Petronis, A. Lubys. Improved whole genome amplification and the integrated study of genomic and optical properties of individual cells and viruses. *For submission to Nature Biotechnology*

Sieracki, M. E., N. J. Poulton, P. Wincker, C. de Vargas, R. Stepanauskas, R. Massana. Single cell genomics yields a wide diversity of planktonic protists across major ocean ecosystems. *For submission to ISME Journal*

Poulton, N. J., N. Record, B. Thompson, B. Tupper, T. Cucci, E. Thier, I. Gilg, E. Haugen, and M. E. Sieracki. Phenology of plankton during a twelve-year study in Booth Bay, Maine. For submission to ISME Journal

Sieracki, M. E., N. J. Poulton, B. Thompson, I. Cetinic, E. Kalin, E. D'Asaro, C. M. Lee, M. J. Perry. Plankton succession and biomass during the 2008 North Atlantic spring bloom. *For submission to Limnology and Oceanography*.

VII. CONTRIBUTED PRESENTATIONS at National and International Mtgs (lead author)

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, New Orleans, LA. Association for the Sciences of Limnology and Oceanography.

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** - Congress for the International Society for the Advancement of Cytometry (ISAC).

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

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, Association for the Sciences of Limnology and Oceanography.

Poulton, N. , 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.

- 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.
- 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
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

Poulton, N. J., J.J. Cullen, G. MacIntyre, and D.M. Anderson. 1998. "Physiological effects of nitrate limitation on the toxic dinoflagellate, *Alexandrium tamarensis* from Casco Bay, Maine." 52nd Annual Meeting of the Phycological Society of America, Flagstaff, AZ.

Poulton, N. J., B. Keafer, and D. M. Anderson. 1997 8th International Conference on Harmful Algal Blooms, Vigo Spain.

VIII. INVITED LECTURES

- 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 Scientifique (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. Jaillon. 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 Scientifique (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?”

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

- 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 + one year extension) 2013-2016
- 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 + one year extension) 2012-2016
- 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 + ext) 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 \$24,000.00 (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 + ext) 2007-2011

X. REVIEW of PROPOSALS AND MANUSCRIPTS

- A. Reviewer for the following Scientific Journals:
Marine Ecology Progress Series, Journal of Phycology, Harmful Algae, Environmental Microbiology and Environmental Microbiology Reports, Journal of Plankton Research, Limology and Oceanography – Methods, PlosONE, Deep Sea Research II and Ecotoxicology
- B. Reviewer for National Science Foundation, including Biological and Chemical Oceanography Programs, & National Oceanic and Atmospheric Administration.

XI. HONORS and AWARDS:

- 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 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

- 2013 - Present – Member of the Board of Directors for the Boothbay Sea and Science Center.
- 2012 - Present – President and chairman of the Board of Trustees for the Boothbay Harbor Memorial Library (BHML). Currently conducting a million dollar Library renovation.
- 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-present
Member, Association for the Sciences of Limnology and Oceanography 1997-2002, 2005-present
COSEE Ocean Systems – Webinar Series Presenter – 2011 North Atlantic Bloom

<http://cosee.umaine.edu/programs/webinars/nab/>

XV. CERTIFICATIONS

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

Robert Morefield, University of Southern Maine, - Summer 2015 REU
Alicia Hoeglund, Undergraduate, Truman State University – Summer 2014 & 2015 REU
Sean Anderson, Undergraduate, Old Dominion University – Summer/Fall Intern
Wilton Burns, Undergraduate, University of North Carolina, Summer 2013 REU
Norma Zoe Neszi, Ph.D. Candidate, Institute de Ciencies del Mar, Barcelona, Spain, Fall 2012
Emily Bell-Hoerth, Undergraduate, Earlham College, Summer 2012 REU
Zakary Jaques, Undergraduate, Colby College, Summer 2012 REU
Kate Hamre, Undergraduate, Colby College, Summer 2011 REU
Ashley Couture, Undergraduate, University of Maine, Summer 2009 REU

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

Post Doctoral Advisor: Michael Sieracki (National Science Foundation)