

SAMUEL ROBERT LANEY PH.D.

Oceanographer/Engineer

Associate Scientist
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EDUCATION

Ph. D., Oceanography, 2006, Oregon State University, Corvallis, Oregon
College of Oceanic & Atmospheric Sciences – College of Engineering
Major: Biological Oceanography *Minor:* Electrical Engineering and Computer Science
Thesis: Seconds to hour scale photosynthetic responses in marine microalgae.
Advisors: Drs. Mark R. Abbott & Ricardo M. Letelier

M.S., Oceanography, 2000, Oregon State University, Corvallis, Oregon
College of Oceanic & Atmospheric Sciences
Major: Biological Oceanography *Minor:* Physical Oceanography
Thesis: Environmental sources of variability in the natural fluorescence signal of phytoplankton.
Advisor: Dr. Mark R. Abbott

B.S., Agricultural & Biological Engineering, 1993, Cornell University, Ithaca, New York
College of Engineering – College of Agricultural & Life Sciences (Joint Program)
Concentration: Instrumentation and sensors in biological systems

Deep Springs College, 1989, Deep Springs, California
Completed the program of study (liberal arts): 1987-1989.

PROFESSIONAL APPOINTMENTS

Associate Scientist, Woods Hole Oceanographic Institution, Woods Hole MA. August 2013 to present.

Assistant Scientist, Woods Hole Oceanographic Institution, Woods Hole MA. May 2009- August 2013.

Faculty, Massachusetts Institute of Technology/Woods Hole Oceanographic Institution Joint Program in Oceanography/Applied Ocean Science and Engineering. January 2010-present.

Postdoctoral Investigator, Woods Hole Oceanographic Institution, Woods Hole MA. July 2008-May 2009.

Ocean Life Institute Postdoctoral Scholar, Woods Hole Oceanographic Institution, Woods Hole MA. September 2006-June 2008.

Visiting Professor, Deep Springs College, Deep Springs CA. January-April 2007, September-October 2011.

Graduate Research Assistant, Oregon State University, Corvallis OR. 1997-2000, 2003-2004.

Graduate Research Assistant, University of Maine, Orono ME. 2000-2002.

AWARDS, SCHOLARSHIPS, FELLOWSHIPS, & HONORS

2012 NASA Group Achievement Award (for contributions to ICESCAPE), December 2012.
NASA New Investigator Program award recipient, 2010-2013.
Santa Fe Institute, 2008 Complexity Science Summer School, selectee & participant.
NSF Office of Polar Programs, New Generation of Polar Researcher (NGPR) selectee, 2008.
Woods Hole Oceanographic Institution (Ocean Life Institute) Postdoctoral Scholarship, 2006.
NSF International Research Fellowship Program (IRFP) Postdoctoral Fellowship, 2006 (declined this award).
NSF International Graduate Training Course in Antarctic Biology Scholarship, 2005.
Cobler Graduate Student Achievement Award, Oregon State University, 2000.
Link Foundation Ocean Engineering and Instrumentation Fellow, 2002-2004.
US Dept. of Energy Student Research Scholar, Brookhaven National Laboratory, 1992-1993.

RESEARCH INTERESTS

Photosynthesis and production in marine ecosystems, particularly in polar oceans.
Optical methods for assessing phytoplankton photosynthesis and ecology.
Numerical modeling of marine photosynthesis and ecophysiology.
Autonomous oceanographic instrumentation and sensor development.
Nonlinear dynamics and regulation in algal physiology and ecology.

PUBLICATIONS: PAPERS

* - *Contribution of student member of Laney research group.*

- [1] H. Wang*, Y. Chen, H. Song, and **Laney, S. R.** 2015. Correcting temperature dependence in miniature spectrometers used in cold polar environments. *Appl. Opt.* **54**, 3162-3172.
- [2] H. Wang*, Y. Chen, H. Song, and **Laney, S. R.** 2014. A fiber optic spectrometry system for measuring irradiance distributions in sea ice environments. *J. Atmos. Ocean. Tech.* **31**, 2844-2857.
- [3] **Laney, S. R.**, and H. M. Sosik. 2014. Phytoplankton assemblage structure in and around a massive under-ice bloom in the Chukchi Sea. *Deep-Sea Res. II* **105**, 30-41.
- [4] Arrigo, K. R., D. K. Perovich, R. S. Pickart, Z. W. Brown, G. L. van Dijken, K. E. Lowry, M. M. Mills, M. A. Palmer, W. B. Balch, N. R. Bates, C. Benitez-Nelson, E. Brownlee, K. E. Frey, **S. R. Laney**, J. Mathis, A. Matsuoka, B. G. Mitchell, G. W. K. Moore, R. A. Reynolds, H. M. Sosik, J. H. Swift. 2014. Phytoplankton blooms beneath the sea ice in the Chukchi Sea. *Deep-Sea Res. II* **105**, 1-16. *Contribution: led research component to determine phytoplankton assemblage structure during ICESCAPE 2010-11.*
- [5] **Laney, S. R.**, R. A. Krishfield, J. M. Toole, T. R. Hammar, C. J. Ashjian, and M.-L. Timmermans. 2014. Assessing algal biomass and bio-optical distributions in perennially ice-covered polar ocean ecosystems. *Polar Science* **8**, 73-85.

- [6] **Laney, S. R.**, R. J. Olson, and H. M. Sosik. 2012. Diatoms favor their younger daughters. *Limnol. Oceanogr.* **57**, 1572-1578.
- [7] Arrigo, K. R., D. K. Perovich, R. S. Pickart, Z. W. Brown, G. L. van Dijken, K. E. Lowry, M. M. Mills, M. A. Palmer, W. B. Balch, F. Bahr, N. R. Bates, C. Benitez-Nelson, B. Bowler, E. Brownlee, J. K. Ehn, K. E. Frey, R. Garley, **S. R. Laney**, L. Lubelczyk, J. Mathis, A. Matsuoka, B. G. Mitchell, G. W. K. Moore, E. Ortega-Retuerta, S. Pal, C. M. Polashenski, R. A. Reynolds, B. Schieber, H. M. Sosik, M. Stephens, J. H. Swift. 2012. Massive phytoplankton blooms under Arctic sea ice. *Science* **336**, 1408, doi:10.1126/science.1215065. *Contribution: led and conducted field efforts to determine phytoplankton assemblage structure during ICESCAPE 2010-11 campaign.*
- [8] Timmermans, M.-L., R. Krishfield, **S. Laney**, and J. Toole, 2010. Ice-Tethered Profiler measurements of dissolved oxygen under permanent ice cover in the Arctic Ocean. *J. Atmos. Ocean. Tech.* **27**, 1936-1949, doi:10.1175/2010JTECHO772.1. *Contribution: provided analysis and interpretation of biologically forced components of under-ice dissolved oxygen signatures.*
- [9] **Laney, S. R.**, R. M. Letelier, and M. R. Abbott. 2009. Using a nonanalytical approach to model nonlinear dynamics in photosynthesis at the photosystem level. *J. Phycol.* **45**, 298-310.
- [10] **Laney, S. R.**, and R. M. Letelier. 2008. Artifacts in measurements of chlorophyll fluorescence transients, with specific application to fast repetition rate fluorometry. *Limnol. Oceanogr. Meth.* **6** 40-50.
- [11] Desiderio, R. A., **S. R. Laney**, R. M. Letelier, and S. J. Giovannoni. 2007. Using lasers to probe the transient light absorption by proteorhodopsin in marine bacterioplankton. *Appl. Optics.* **46** 7329-7336. *Contribution: helped develop and perform the transient absorption spectroscopic measurements of proteorhodopsin directly in lysed cell preparations and in actual P. ubique cultures.*
- [12] Giovannoni, S. J., L. Bibbs, J.-C. Cho, M. D. Stapels, R. Desiderio, K. Vergin, M. S. Rappe, **S. Laney**, L. J. Wilhelm, H. J. Tripp, E. J. Mathur, and D. F. Barofsky. 2005. Proteorhodopsin phototrophy in the ubiquitous marine bacterium SAR11. *Nature* **438**, 82-85, doi:10.1038/nature04032. *Contribution: helped develop and perform the transient absorption spectroscopic measurements of proteorhodopsin in cell preparations and P. ubique cultures.*
- [13] **Laney, S. R.**, R. M. Letelier, and M. R. Abbott. 2005. Parameterizing the natural fluorescence kinetics of *Thalassiosira weissflogii*. *Limnol. Oceanogr.* **50**, 1499-1510.
- [14] **Laney, S. R.** 2005. A generalized real-time signal processor for oceanographic applications. *Research Papers of the Link Foundation Fellows* **4**, B. J. Thompson, ed., pp. 333-349.
- [15] **Laney, S. R.** 2003. Assessing the error in photosynthetic properties determined with Fast Repetition Rate fluorometry. *Limnol. Oceanogr.* **48**, 2234-2242.
- [16] **Laney, S. R.**, R. M. Letelier, R. A. Desiderio, D. A. Kiefer, C. R. Booth, and M. R. Abbott. 2001. Measuring the natural fluorescence of phytoplankton cultures. *J. Atmos. Ocean. Tech.* **18**, 1924-1934.
- [17] **Laney, S. R.** 1997. Fast Repetition Rate fluorometry - Exploring phytoplankton fluorescence. *Sea Technology* **38**, 99-102.

PUBLICATIONS: BOOK CHAPTERS

[18] **Laney, S. R.** 2010. *In situ* measurement of chlorophyll fluorescence transients. In D.J. Suggett et al. (eds.), *Chlorophyll a Fluorescence in Aquatic Sciences: Methods and Applications, Developments in Appl. Phycol.* **4**, doi:10.1007/978-90-481-9268-7_2, Springer Science+Business Media B.V. (Invited and peer-reviewed).

TEACHING EXPERIENCE

Faculty, MIT-WHOI Joint Program in Biological Oceanography (JPBO), 2009-present.

MIT 7.47 (Biological Oceanography), 2009-2011. JPBO core course for first-year students.

MIT 7.433 (Marine Bio-optics), 2014. JPBO advanced topics course.

Visiting Professor, Deep Springs College, January-April 2007: developed and led lower division courses in numerical methods and computer modeling, Calculus I, and Calculus II. September-October 2011: developed and led lower division short courses in single variable calculus and in multivariable calculus.

Teaching Assistant, Oregon State University, 2005. Introduction to Oceanography: freshman web-based University extension course. Dr. R. Keller, lead instructor.

Teaching Assistant, Oregon State University, 2004. Marine Phytoplankton Physiology: graduate course for oceanography and chemical engineering students. Dr. R. M. Letelier, lead instructor.

Teaching Assistant, 2001 NSF-ONR-NASA Ocean Optics Course (formerly at Friday Harbor WA). 6-week summer course, University of Maine, Darling Marine Center. Dr. M. J. Perry, lead instructor.

Lecturer, 2012 British Petroleum Oceanography Short Course: Phytoplankton Ecology and Bio-Optics. Woods Hole Oceanographic Institution.

STUDENTS AND ADVISEES

Doctoral co-advisor, Hangzhou Wang (Ph.D. candidate, Department of Mechanical Engineering, Zhejiang University, China), Doctoral guest student, Woods Hole Oceanographic Institution, September 2012 – August 2014.

Advisor, undergraduate research fellows, WHOI. Summer Student Fellows: Paul Lerner (2012, University of California Berkeley). Erin Larragoite (2013, University of New Mexico). Winter Fellows: David Kenison (2014, Oberlin College).

Honors Thesis advisor, Kristin Landgren (Honors College, Oregon State University), Oregon State University, 2007.

EDUCATION SERVICE

MIT/WHOI Joint Program Admissions committee, appointed 2013.

Postdoctoral Mentoring Committee, WHOI Biology Department, 2010-2012.

MIT/WHOI Dissertation Defense committee Chair, Dr. Louie Wurch, August 2011.

MIT/WHOI Joint Program in Biological Oceanography, Exam Committee, 2011.

MIT/WHOI Joint Program Exam Committee, Biological Oceanography: Ms. Megan May, 2015.

PROFESSIONAL MEMBERSHIPS, SERVICE, & RECOGNITIONS

Member, Technical Advisory Committee, Maine Space Grant Consortium, February 2013-present.

Manuscript reviewer: *Botanica Marina*, *Deep-Sea Research*, *Environmental Science & Technology*, *Journal of Atmospheric and Oceanic Technology*, *Journal of Geophysical Research*, *Journal of Photobiology*, *Journal of Phycology*, *Journal of Plankton Research*, *Limnology and Oceanography*, *Limnology and Oceanography: Methods*, *Marine Ecology Progress Series*, *Optics Express*.

Proposal reviewer or panelist: NSF, NASA, NOAA, EPA, Australian Antarctic Program, NSF Ocean Observing Initiative, Maine Space Grant Consortium.

Professional memberships: American Geophysical Union, American Society of Limnology and Oceanography, Scholarly Union of BioPhysical Arctic Researchers.

PROFESSIONAL DEVELOPMENT & LEADERSHIP ACTIVITIES

Small Project Organization training workshop, Corporate and Professional Education, Worcester Polytechnic Institution. Woods Hole Oceanographic Institution, November 2012, (0.4 CEU).

Massachusetts Institute of Technology, Professional Development course PI.61s, "Leadership skills for engineering and science faculty", MIT, June 2012 (1.4 CEU).

SELECTED FIELD RESEARCH

Bering Sea ice trials for RV *SIKULIAQ*. March-April, 2015. Member of science party participating in ice trials for new UNOLS ice-capable research vessel.

Bering/Chukchi Sea Winter cruise, USCGC *HEALY*. November-December, 2011. Examined phytoplankton overwintering strategies in late fall/early winter Arctic ecosystems.

Station ALOHA - WHOTS ocean color radiometry. June 2011-June 2015. Autonomous ocean color observations on open-ocean moorings near Hawaii. Collaborators: A. Pleuddemann, R. Weller, WHOI.

ICESCAPE 2010, ICESCAPE 2011, USCGC *HEALY*. June-July 2010, 2011. Examined mesoscale distributions of phytoplankton and optical properties in the Chukchi and Bering Seas.

Arctic ocean optics, NOAA Ship *OSCAR DYSON*. August-September 2007. Conducted 3 week mesoscale survey of phytoplankton and ocean optical properties in the eastern Chukchi & Bering Seas from 70° N to 64° N.

Upwelling ecosystem microbiology, R/V *Wecoma*. September 2004. Investigated variability in photosynthesis and production during 13 day cross shelf transect at the Oregon shelf break.

Hawaii Ocean Time-series survey cruises HOT154, 172, 174, & 175. 2003 & 2005. Mooring deployment, August 2004. R/V *Kilo Moana* & R/V *Ka'imikai-o-Kanaloa*. Evaluated new optical methods for characterizing algal photophysiology in oligotrophic environments.

Gulf of Alaska Global Ocean Ecosystem, R/V *Wecoma*, May 2003. Thirty-day shelf survey off the Kenai Peninsula. Deployed active and passive fluorometric and bio-optical systems.

Persistent Small-Scale Biological Structure (Wec9808C), R/V *Wecoma*, August 1998. Oregon State University 15 day transect at the Oregon shelf break. Responsible for deployment of active and passive fluorometers.

ECOHAB (Ecology of Harmful Algal Blooms), R/V *Cape Hatteras*, July 1998. Fifteen day ECOHAB survey cruise in the Gulf of Maine. Responsible for hydro casts and ADCP operation.

Coastal Benthic Optical Properties (COBOP), R/V *Edwin Link*, June 1996. SCUBA trials for initial prototype handheld Fast Repetition Rate (FRR) fluorometer on coral substrate.

Atlantic Meridional Transect - 1 (AMT-1), RRS *James Clark Ross*, September - October 1995. British Antarctic Survey / Plymouth Marine Laboratory six week 7000 nm transect survey. Responsible for operation and data interpretation of experimental active fluorometers.

Chesapeake Bay fluorometry evaluation, R/V *Cape Henlopen*, April 1995. Evaluation of performance and behavior of a profiling FRR fluorometer in estuarine environments.

Lake Biwa Transport Experiment (BITE93), R/V *Hakken-Go*, Lake Biwa Research Institute, Shiga Prefecture, Japan August-September 1993. Responsible for physiological photosynthetic measurements in laboratory, shipboard, and enclosure experiments.

Ocean Margins Program (OMP) Cruise, R/V *Gyre*, May 1993. Responsible for chlorophyll analysis and experimental fluorometer deployment during US Department of Energy cruise.

INVITED LECTURES

Laney, S. R. “Monitoring ocean ecosystems under Arctic sea ice: Advances in observational Technology”. 2015 Ocean Outlook Workshop, University of Bergen, Bergen, Norway, February 2015.

Laney, S. R. “New Insight into Polar Phytoplankton through Automated & Autonomous Technologies”. Institution seminar, University of Massachusetts Dartmouth, Dartmouth MA, April 2014.

Laney, S. R. “New Insight into Polar Phytoplankton through Autonomous Technologies”. Departmental seminar, University of Maine School of Marine Sciences, Orono ME, February 2014.

Laney, S. R. “Optical Approaches for Monitoring Ocean Biology and Ecology on Observatories”. ZERO workshop seminar, Ocean College, Zhejiang University, Hangzhou China, December 2013.

Laney, S. R. “New Insight into Polar Phytoplankton through Autonomous Technologies”. Institution seminar, Alfred Wegener Institute for Polar and Marine Research, Bremerhaven Germany, May 2013.

Laney, S. R. “Balancing the scales in phytoplankton ecology”. Institution seminar, Bigelow Laboratory for Ocean Sciences, Boothbay Harbor ME, January 2013.

Laney, S. R. “The lives of some cells: binary division in diatoms (observed in situ and in the lab)”. Departmental seminar, School of Ocean and Earth Science and Technology, University of Hawaii at Manoa, November 2012.

Laney, S. R. “The lives of some cells: binary division in diatoms (observed in situ and in the lab)”. Departmental seminar, Graduate School of Oceanography, University of Rhode Island, February 2011.

Laney, S. R. “The lives of some cells: binary division in diatoms (observed in situ and in the lab)”. Invited seminar, Ecosystem Center, MBL, Woods Hole MA, April 2010.

Laney, S. R. “Interpreting variable fluorescence using a stochastic framework”. Invited lecture, at Chlorophyll Fluorescence in Aquatic Sciences Meeting. June 2007, Nove Hrad, Czech Republic.

Laney, S. R. and M. J. Perry. “Using numerical simulations to explore physiological photosynthesis models: examining the influence of second-order physiological factors”. Invited lecture, Fast Repetition Rate fluorometry workshop, Challenger Conference. 2002, University of Plymouth, UK.

Laney, S. R. “Interdisciplinary graduate education in oceanography”. Invited lecture, ‘Oceanography: The Making of a Science’, Heinz Foundation – Office of Naval Research. 2000, Seattle WA.

ORAL AND POSTER PRESENTATIONS

Laney, S. R., J. Toole, R. Krishfield, and M.-L. Timmermans. “Year-long, daily-scale ecosystem observations under perennial ice cover in the Arctic Ocean”. Oral presentation, 2015 Arctic Science Summit Week (ASSW2105), ISAR-4 / ICARP III (Fourth International Symposium on the Arctic Research / Third International Conference on the Arctic Research Planning), Toyama, Japan, April 2015.

Laney, S. R. and H. Sosik. “Phytoplankton assemblage structure in the Chukchi Sea: Insight from flow cytometry”. Poster presentation, 2015 Alaska Marine Science Symposium, Anchorage, AK, January 2015.

Laney, S. R., J. Toole, and R. Krishfield. “Year-long, daily-scale bio-optical observations under perennial ice cover in the Arctic Ocean”. Oral presentation, 2014 Ocean Optics Conference, Portland, ME, USA, October 2014.

Laney, S. R., and others. “Year-long, daily-scale bio-optical observations under perennial ice cover in the Arctic Ocean”. Oral presentation, 2014 FAMOS, Woods Hole, MA, USA, October 2014.

Laney, S. R., H. Sosik, and D. Stockwell. “Using imaging flow cytometry to examine phytoplankton assemblage structure in the Chukchi Sea”. Poster presentation, 2014 Ocean Science Meeting, Honolulu, HI, February 2014.

Laney, S. R., H. Sosik, and D. Stockwell. “Using imaging flow cytometry to examine phytoplankton assemblage structure in the Bering Sea”. Poster presentation, 2014 Bering Sea Ocean Science Meeting, Honolulu, HI, February 2014.

Laney, S. R. and H. Sosik. “Using imaging flow cytometry to examine phytoplankton assemblage structure in the Bering and Chukchi Seas”. Poster presentation, 2014 Alaska Marine Science Symposium, Anchorage, AK, January 2014.

Laney, S. R., J. Toole, and R. Krishfield. “Yearlong, Daily Assessments of Bio-Optical Distributions under Perennial Ice Cover in the Arctic Ocean”. AGU Fall Meeting, San Francisco CA. December 2013.

Laney, S. R., and H. Sosik. “Microplankton assemblage structure in ICESCAPE 2011”. Oral presentation, ICESCAPE workshop. Stanford University, Palo Alto CA. September 2013.

Laney, S. R. “A new paradigm for interpreting remotely sensed phytoplankton fluorescence”. Poster presentation, International Ocean Color Symposium. Darmstadt, Germany. May 2013.

Laney, S. R. and D. Stockwell. “Using imaging flow cytometry to examine phytoplankton assemblage structure in the Bering and Chukchi Seas”. Oral presentation, 2013 Alaska Marine Science Symposium, Anchorage, AK, January 2013.

Laney, S. R., J. Toole, R. Krishfield, and C. Ashjian. “Year-long monitoring of under-ice phytoplankton assemblages in the Arctic by Ice-Tethered Profilers”. Oral presentation, Third International Symposium on the Arctic Research (ISAR-3), Tokyo, Japan, January 2013.

Laney, S. R. “Long term, high-resolution assessment of sun-stimulated fluorescence in the oligotrophic Pacific”. Oral presentation, 2012 Ocean Optics XXI Meeting, Glasgow, Scotland, UK, October 2012.

Laney, S. R., and H. Sosik. “Microplankton assemblage structure in ICESCAPE 2011”. Oral presentation, ICESCAPE-Malina workshop. Villefranche-sur-mer, France. September 2012.

Laney, S. R. “Using active fluorescence to examine minutes-scale photosynthetic responses in phytoplankton”. Oral presentation, 2012 Aquatic Sciences Meeting, Otsu, Japan, July 2012.

Laney, S. R. “Effects of cloud cover on remotely sensed ocean phytoplankton fluorescence”. Poster presentation, 2012 Ocean Color Research Team Meeting, Seattle, WA, USA, April 2012.

Laney, S. R. “Automated, autonomous biosampling: Imaging FlowCytobot”. Oral presentation, UNOLS vessel planning workshop for R/V *Sikuliaq*, Salt Lake City UT, USA, February 2012.

Laney, S. R. “A new dynamical modeling framework for interpreting phytoplankton natural fluorescence”. Oral presentation, 2012 Ocean Sciences Meeting, Salt Lake City, UT, USA, February 2012.

Laney, S. R., R. Krishfield, C. Ashjian, M.-L. Timmermans, and J. Toole. “Optical Assessment of Under-Ice Biology in the Arctic using Ice-Tethered Profilers”. Poster presentation, 2011 AOMIP, Woods Hole, MA, USA, November 2011.

Laney, S. R. “Assessing Natural Fluorescence Dynamics using Radiometry on Long-term Ocean Moorings”. Poster presentation, 2011 NASA Carbon Cycle and Ecosystems Meeting, Washington, DC, USA, October 2011.

Laney, S. R., and H. Sosik. “Monitoring Climate-Driven Changes in Arctic Algal Assemblages”. Oral presentation, ICESCAPE 2011 planning workshop, Stanford University, Palo Alto CA, USA, March 2011.

Laney, S. R., H. Sosik and R. Olson. “Diatoms favor their younger daughters”. Oral presentation, 2010 Ocean Sciences Meeting, Portland, OR, USA, February 2010.

Laney, S. R. “The Dynamics of Sun-Stimulated Phytoplankton Fluorescence”. Poster presentation, 2010 Ocean Optics XX Meeting, Anchorage, AK, USA, September 2010.

Laney, S. R., and H. Sosik. “Monitoring Climate-Driven Changes in Arctic Algal Assemblages”. Oral presentation, ICESCAPE 2010 planning workshop, Vancouver BC, Canada, December 2009.

Laney, S. R., H. Sosik and R. Olson. “Examining cell-specific growth and division in phytoplankton using time-lapse photomicrography”. Oral presentation, 2009 Aquatic Sciences Meeting, Nice, France, January 2009.

Laney, S. R., and H. Sosik. “Optical Approaches for Monitoring Change in Coastal Arctic Marine Ecosystems”. Oral and poster presentations, 2008 International Polar Year New Generation of Polar Researchers, Colorado Springs, CO, USA, May 2008.

Laney, S. R. and R. M. Letelier. “Ocean productivity and the role of pelagic ecosystems in the carbon cycle: a remote sensing perspective”. Oral presentation, 2004 Conference of the International Society of Microbial Ecology. 2004, Cancun, Mexico.

Laney, S. R., and M. J. Perry. “Second-order controls on single-turnover chlorophyll fluorescence yield and their influence on oceanic productivity models. Poster presentation, at ‘Phytoplankton Productivity: an appreciation of 50 years of the study of production in oceans and lakes’. March 2002, Bangor, Wales, UK.

Laney, S. R., R. M. Letelier, and M. R. Abbott. “The effect of nitrate and irradiance on natural fluorescence: Assessing the influence of environmental variables”. Poster presentation, ASLO Ocean Sciences Meeting. February 2002, Honolulu HI.

Laney, S. R., R. M. Letelier, and M. R. Abbott. “Physiological variability in the natural fluorescence of *Thalassiosira weissflogii*”. Poster presentation, NASA Ocean Color Research Team meeting. May 2001, San Diego CA.

Laney, S. R., R. M. Letelier, and M. R. Abbott. “Electron transport models of photosynthesis: does reaction center connectivity enhance photosynthesis?” Poster presentation, ASLO Aquatic Sciences Meeting. February 2001, Albuquerque NM.

Laney, S. R., R. M. Letelier, R. A., Desiderio, and M. R. Abbott. “Laboratory time series of phytoplankton natural fluorescence”. Poster presentation, AGU Ocean Sciences Meeting. January 2000, San Antonio TX.

WORKSHOPS ATTENDED

Ocean Outlook 2015, Bergen Marine Cluster, Bergen, Norway, February 2015.

ZERO workshop, Ocean College Zhejiang University, Hangzhou, China, December 2013.

ICESCAPE synthesis workshop, Stanford University, Palo Alto CA, September 2013.

Ocean Carbon & Biogeochemistry workshop, Woods Hole MA, July 2013.

Towards Optics-Based Measurements in Ocean Observatories workshop, 2012 Ocean Optics XXI meeting, Glasgow Scotland, UK, October 2012.

ICESCAPE-Malina US/European Arctic science synthesis workshop, Villefranche-sur-mer, France, September 2012.

ICESCAPE 2011 cruise planning workshop, Stanford University, Palo Alto CA, USA, March 2011.

UNOLS vessel planning workshop for R/V *Sikuliaq*, Salt Lake City UT, USA, February 2011.

ICESCAPE 2010 cruise planning workshop, Victoria BC, Canada, December 2009.

2006 NSF Antarctic science and research logistics workshop, Arlington VA, USA, August 2006.

Fast Repetition Rate fluorometry workshop, Challenger Conference, University of Plymouth, UK, 2002.

INSTITUTIONAL SERVICE AND COMMITTEES

Biology Department Hiring Committee, 2013-present.

Seminar Co-coordinator, WHOI Biology Department, 2010-2012.

Scientific Staff Search Committee, WHOI Biology Department, 2010, 2012.

Biology Department Chair Selection (and later Advisory) Committee, 2010-present.

PROFESSIONAL EXPERIENCE & CONSULTING

Maine Science and Technology Fund, Business Plan Competition Winner, 2002 – \$10,000 prize to support exploratory R&D of new fluorometric protocols for examining marine photosynthesis.

Engineering Consultant, Chelsea Instruments Ltd., West Molesey, Surrey, U.K. – oversaw technology transfer of NASA fast repetition rate fluorometer SBIR research project to commercialization, 1996-1997.

Engineering Consultant, Oceanographic & Atmospheric Sciences Division, Brookhaven National Laboratory, US Department of Energy, Upton, New York – Engineering design of optical/electronic instrument prototypes for oceanographic algal research, 1994-1996.

Research & Design Engineer, Oceanographic & Atmospheric Sciences Division, Brookhaven National Laboratory, US Department of Energy, Upton, New York – Engineering design of fast repetition rate fluorometer technology. Participated in several oceanographic field cruises to evaluate instrument prototypes. Research supervisors: Drs. Zbigniew Kolber & Paul Falkowski, 1992-1994.

SYNERGISTIC ACTIVITIES AND OUTREACH

‘v-code’ FRRF analysis software. Designed and maintained open-source software for interpreting variable fluorescence transients, 1999-2006.

Ocean Color kiosk project, WHOI Ocean Science Exhibit Center, 2010-2013. Developed content for an interactive kiosk presenting ocean color research. Supporting agency: NASA (New Investigator Program).