

## Curriculum Vitae

Mark R. Abbott

College of Earth, Ocean, and Atmospheric Sciences  
Oregon State University  
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### Research Interests and Administrative Experience

Dr. Abbott's research focuses on the interaction of biological and physical processes in the upper ocean and relies on both remote sensing and field observations. Dr. Abbott is a pioneer in the use of satellite ocean color data to study coupled physical/biological processes. He advocated the inclusion of chlorophyll fluorescence bands in MODIS (the Moderate Resolution Imaging Spectroradiometer on EOS Terra and Aqua) and developed next-generation ocean primary productivity algorithms that used chlorophyll fluorescence data to estimate the physiological health of upper ocean phytoplankton. He has deployed a wide variety of ocean color sensors in the upper ocean, including moored arrays at the Polar Front in the Southern Ocean and ocean drifters in the California Current as well as the Polar Front. He was an investigator in ONR's Coastal Transition Zone program as well as the Eastern Boundary Current program. He is presently funded by ONR to explore advanced computer architectures for use in undersea platforms. Dr. Abbott has also advised the Office of Naval Research and the National Science Foundation on issues regarding advanced computer technology and oceanography. He was also a member of MEDEA, which advised the federal government on issues of national security and climate change.

In 2006, Dr. Abbott was appointed by the President to a six-year term on the National Science Board, which oversees the National Science Foundation and provides scientific advice to the White House and to Congress. Dr. Abbott was appointed in 2008 by Oregon Governor Kulongoski as vice chair of the Oregon Global Warming Commission, which is leading the state's efforts in mitigation and adaptation strategies in response to climate change.

As dean of the college, Dr. Abbott has worked with faculty to restructure the college graduate degree curricula to reflect an integrated approach to Earth sciences, implemented a comprehensive faculty hiring plan that brought in over 25 new faculty, established a regular assessment and mentoring program for faculty, developed a college-funded postdoctoral research program that helps bridge the gap between graduate student life and a faculty career, restructured the college budgeting process to reflect strategic priorities, and helped lead the college to greatly exceed its strategic goals in the university's first-ever capital campaign. In the last year, Dr. Abbott worked with faculty and with the dean of the College of Science to create the new College of Earth, Ocean, and Atmospheric Sciences. The new college has 200 graduate students, over 600 undergraduates, 98 faculty, and over 150 technical and administrative staff. With a budget of over \$50M, CEOAS represents a comprehensive education and research approach to the study of the Earth as a system.

Occupation: Biological Oceanographer

Date of Birth: 25 March 1953

Position: Dean and Professor  
College of Earth, Ocean, and Atmospheric Sciences  
Oregon State University

Education: University of California, Berkeley  
B.S., Conservation of Natural Resources, 1974

University of California, Davis  
Ph.D., Ecology, 1978

Professional Experience:

2001-present	Dean Oregon State University Corvallis, OR 97331
1993-present	Professor Oregon State University Corvallis, OR 97331
1988-1993	Associate Professor Oregon State University Corvallis, OR 97331
1982-1988	Assistant Adjunct Professor Marine Life Research Group Scripps Institution of Oceanography University of California, San Diego La Jolla, CA 92093
1982-1988	Member, Technical Staff Oceanography Group Jet Propulsion Laboratory Pasadena, CA 91109
1980-1982	NATO/NSF Postdoctoral Fellow Ocean Ecology Institute of Ocean Sciences Sidney, B.C., CANADA
1979-1980	Postgraduate Researcher Institute of Ecology University of California, Davis Davis, CA 95616
1978-1979	Acting Assistant Professor Section of Ecology and Systematics Cornell University Ithaca, NY 14853

**Memberships**

American Geophysical Union  
The Oceanography Society  
American Society of Limnology and Oceanography  
Sigma Xi

**Honors, Scholarships, Fellowships, Professional Activities**

**Fellowships**

NATO/NSF Postdoctoral Fellowship in biological oceanography, 1980 - 1982.

## **Committee Service**

### **NASA**

Earth Observing System (EOS) Investigators Working Group, 1989 - 2002.  
EOS Payload Panel, 1989 - 2000. (Chairman)  
EOS Science Executive Committee, 1995 - 2000.  
EOS Moderate Resolution Imaging Spectroradiometer Science Team, 1989 - 2004.  
Group Achievement Award, Aqua Mission Team, 2003  
Group Achievement Award, NASA Institute for Advanced Concepts, 2004

### **National Science Foundation**

Joint Global Ocean Flux Study Science Steering Committee, 1995 - 1998.  
JGOFS Southern Ocean Planning Committee, 1991 - 1994.  
Joint Global Ocean Flux Study Science Executive Committee, 1998 - 2004.  
Joint Global Ocean Flux Study Science Steering Committee, 1999 – 2004. (Chairman)  
Ocean Information Technology Working Group, 2002 – 2004.  
National Science Board, 2006 – 2012, Member  
National Science Board, 2012 – 2013, Consultant  
    Committee on Programs and Plans, 2006 – 2013.  
    Chair, 2010 – 2012.  
    Committee on Audit and Oversight, 2006 – 2013.  
    Executive Committee, 2007 – 2009.  
    Task Force on Cost Sharing, 2007 – 2010.  
    Task Force on Sustainable Energy, 2007 – 2009.  
    Task Force on Unsolicited Mid-scale Research, 2010 – 2011.  
    Task Force on Data Policies, 2010 – 2011.  
    Subcommittee on Facilities, 2009 – 2013.

### **National Academy of Sciences**

Committee on Data Management and Computation, 1986 - 1988.  
Committee on Global Change, Ocean Modeling Subgroup, 1989.  
Panel to Review EOSDIS, 1993.  
Committee on Earth Studies, 1996 - 2001. (Chairman)  
Space Studies Board, 1996 – 2001; 2011 – 2015.  
Steering Committee on Space Applications and Commercialization, 1999 – 2001.  
Committee on NASA/NOAA Transition from Research to Operations, 2002 – 2003.  
National Associate Member, NAS, 2002.  
Panel on Land-use Change, Ecosystem Dynamics and Biodiversity, 2005 – 2006.  
Committee on Earth Studies, 2008 – 2011.  
Committee on the Role and Scope of Mission-Enabling Activities in NASA's Space and Earth Science, 2008 – 2009.  
Committee on Indicators for Understanding Global Climate Change, 2009 – 2010. (Chairman)  
Committee on Midterm Assessment of NASA's Earth Science Program, 2011 – 2012.  
Committee to Advise the US Global Change Research Program, 2011 – present.  
Committee on Earth Science and Applications from Space, 2012 – present. (Chairman).  
Committee on NASA's Strategic Direction, 2013.  
Committee on a Framework for Analyzing the Needs for Continuity of NASA-Sustained Remote Sensing Observations of the Earth from Space, 2013 – present.  
Committee on Future Directions for NSF Advanced Computing Infrastructure to support US Science in 2017-2022, 2014 – present.

### **National Oceanic and Atmospheric Administration**

Council on Long-Term Climate Monitoring, 2001 – 2003.  
Climate Working Group, 2003 – 2006. (Co-chairman)  
Coastal Ocean Applications and Science Team (GOES-R), 2004 – 2007. (Chairman)  
Ecosystem Research Review Team, 2005 – 2006.

**Jet Propulsion Laboratory**

Director's Advisory Council, 2001 – 2007.

**Joint Oceanographic Institutions, Inc.**

Board of Governors, 2001 – 2007.

Executive Committee, 2003 – 2004.

**Consortium for Oceanographic Research and Education**

Board of Governors, 2001 – 2007.

Executive Committee, chair, 2003 – 2007.

**1201 Group, LLC (a joint CORE/JOI entity)**

Board of Managers, chair, 2003 – 2007.

**Consortium for Ocean Leadership**

Board of Trustees, 2007 – 2008; 2010 – present.

**Northrop-Grumman Space and Mission Systems, Inc.**

NPOESS Science Advisory Team, 2003 – 2006.

**National Association of State Universities and Land Grant Colleges**

Board on Oceans and Atmosphere, 2001 – 2008.

BOA Executive Committee, 2001 – 2006. (Co-chair, 2002-2004)

**State of Oregon**

Governor's Climate Change Integration Group, 2006 – 2008. (Co-chairman)

Global Warming Commission, 2008 – present. (vice-chair, non-voting)

**University Corporation for Atmospheric Research**

Board of Trustees, 2008 – 2012.

**The Oceanography Society**

President-elect, 2011 – 2013.

President, 2013 – 2015.

Past President, 2015 – present.

**Microsoft Research**

2011 Jim Gray eScience Award.

**Evergreen Aviation and Space Museum**

Board of Directors

2011 – 2014

**NEON, Inc.**

Board of Trustees, 2013 – present.

## Publications

- Leigh-Abbott, M.R., J.A. Coil, T.M. Powell, and P.J. Richerson, 1978, Effects of a coastal front on the distribution of chlorophyll in Lake Tahoe, California-Nevada, *J. Geophys. Res.*, 83, 4668-4672.
- Richerson, P.J., T.M. Powell, M.R. Leigh-Abbott, and J.A. Coil, 1978, Spatial heterogeneity in closed basins, p.239-276, In: J.H. Steele (ed.), *Spatial pattern in plankton communities*. Plenum.
- Abbott, M.R., T.M. Powell, and P.J. Richerson, 1980, The effect of transect direction on observed spatial patterns of chlorophyll in Lake Tahoe, *Limnol. Oceanogr.*, 25, 534-537.
- Abbott, M.R., P.J. Richerson, and T.M. Powell, 1982, In situ response of phytoplankton fluorescence to rapid variations in light, *Limnol. Oceanogr.*, 27, 218-225.
- Abbott, M.R., T.M. Powell, and P.J. Richerson, 1982, The relationship of environmental variability to the spatial patterns of phytoplankton biomass in Lake Tahoe., *J. Plankton Res.*, 4, 927-941.
- Abbott, M.R., and P.M. Zion, 1984, Coastal Zone Color Scanner (CZCS) imagery of near-surface phytoplankton pigment concentrations from the first Coastal Ocean Dynamics Experiment (CODE-1), March-July 1981. Jet Propulsion Laboratory Publication 84-42.
- Abbott, M.R., K.L. Denman, T.M. Powell, P.J. Richerson, R.C. Richards, and C.R. Goldman, 1984, Mixing and the dynamics of the deep chlorophyll maximum in Lake Tahoe, *Limnol. Oceanogr.*, 29, 862-878.
- Strub, T., T.M. Powell, and M.R. Abbott, 1984, Temperature and transport patterns in Lake Tahoe: satellite imagery field data, and a hydrodynamical model, *Int. Ver. Theor. Angew. Limnol.*, 22, 112-118.
- Abbott, M.R., and P.M. Zion, 1985, Satellite observations of phytoplankton variability during an upwelling event, *Cont. Shelf. Res.*, 4, 661-680.
- Hill, S.H., M.R. Abbott, and K.L. Denman, 1985, A computer-controlled turbidostat for the culture of planktonic algae, *Can. J. Fish. Aquat. Sci.*, 42, 744-753.
- Eppley, R.W., E. Stewart, M.R. Abbott, and U. Heyman, 1985, Estimating ocean primary production from satellite chlorophyll. Introduction to regional differences and statistics for the Southern California Bight, *J. Plankton Res.*, 7, 57-70.
- Mackas, D.L., K.L. Denman, and M.R. Abbott, 1985, Plankton patchiness; biology in the physical vernacular, *Bull. Mar. Sci.*, 37, 652-674.
- Leigh-Abbott, M.R., J.A. Coil, T.M. Powell, and P.J. Richerson, 1978, Effects of a coastal front on the distribution of chlorophyll in Lake Tahoe, California-Nevada, *J. Geophys. Res.*, 83, 4668-4672.
- Eppley, R.W., E. Stewart, M.R. Abbott, and R.W. Owen, 1987, Estimating ocean production from satellite-derived chlorophyll: Insights from the EASTROPAC data set, *Oceanologica Acta, spec. vol. 6*, 109-113.
- Eert, J., G. Holloway, J.F.R. Gower, K. Denman, and M. Abbott, 1987, Inference of physical/biological dynamics from synthetic ocean color images, *Adv. Space Res.*, 7, 89-93.
- Denman, K.L., and M.R. Abbott, 1988, Time evolution of surface chlorophyll patterns from cross spectrum analysis of satellite color images, *J. Geophys. Res.*, 93, 6789-6798.
- Balch, W.B., M.R. Abbott, and R.W. Eppley, 1989a. Remote sensing of primary production: I. A comparison of empirical and semi-analytical algorithms. *Deep-Sea Res.*, 36, 281-295.
- Balch, W.M., R.W. Eppley, and M.R. Abbott. 1989b, Remote sensing of primary production: II. A semi-

- analytical algorithm based on pigments, temperature, and light, *Deep-Sea Res.*, 36, 1201-1217.
- Balch, W.M., R.W. Eppley, M.R. Abbott, and F.M.H. Reid, 1989, Bias in satellite-derived pigment measurements due to coccolithophores and dinoflagellates, *J. Plankton Res.*, 11, 575-581.
- Fu, L.-L., W.T. Liu, and M.R. Abbott, 1990, Satellite remote sensing of the ocean. In: *The Sea*, vol. 9, edited by B. Le Mehaute and D.M. Hanes, pp. 1193-1236, Wiley Interscience, New York.
- Abbott, M.R., K.H. Brink, C.R. Booth, D. Blasco, L.A. Codispoti, P.P. Niiler, and S.R. Ramp, 1990, Observations of phytoplankton and nutrients from a Lagrangian drifter off northern California, *J. Geophys. Res.*, 95, 9393-9409.
- Hood, R., M.R. Abbott, P.M. Kosro, and A. Huyer, 1990, Relationships between physical structure and biological pattern in the surface layer of a northern California upwelling system, *J. Geophys. Res.*, 95, 18,081-18,094.
- Strub, P.T., C. James, A.C. Thomas, and M.R. Abbott, 1990, Seasonal and non-seasonal variability of satellite-derived surface pigment concentration in the California Current, *J. Geophys. Res.*, 95, 11,501-11,530.
- Abbott, M.R., and B. Barksdale, 1991, Wind forcing and phytoplankton pigment patterns off central California, *J. Geophys. Res.*, 96, 14,649-14,667.
- Hood, R.R., M.R. Abbott, and A. Huyer, 1991, Phytoplankton biomass, species composition, and photosynthetic light response in the coastal transition zone in June 1987, *J. Geophys. Res.*, 96, 14,769-14,780.
- Paden, C.A., M.R. Abbott, and C.D. Winant, 1991, Tidal and atmospheric forcing of the upper ocean in the Gulf of California, Part 1: Sea surface temperature variability, *J. Geophys. Res.*, 96, 18,33-18,359.
- Brink, K.H., R.C. Beardsley, P.P. Niiler, M.R. Abbott, A. Huyer, S. Ramp, T. Stanton, and D. Stuart, 1991, Statistical properties of near surface currents in the California coastal transition zone, *J. Geophys. Res.*, 96, 14,693-14,706.
- Abbott, M.R., and D.B. Chelton, 1991, Advances in passive remote sensing of the ocean, *Rev. Geophys. supplement*, U.S. Nat Rep. IUGG, 571-589.
- Kosro, P.M., A. Huyer, S.R. Ramp, R.L. Smith, F.P. Chavez, T.J. Cowles, M.R. Abbott, P.T. Strub, R.T. Barber, P. Jessen, and L.F. Small, 1991, The structure of the transition zone between coastal waters and the open ocean off northern California, winter and spring 1987, *J. Geophys. Res.*, 96, 14,707-14,730.
- Strub, P.T., P.M. Kosro, A. Huyer, K.H. Brink, T. Hayward, P.P. Niiler, C. James, R. Dewey, L. Walstad, F. Chavez, S. Ramp, D.L. Mackas, M. Swenson, L.A. Washburn, J. Barth, R.R. Hood, M.R. Abbott, D. Kadko, R. Barber, D. Haidvogel, M. Batteen, and R. Haney, 1991, The nature of the cold filaments in the California current system, *J. Geophys. Res.*, 96, 14,743-14,768.
- Swenson, M.S., P.P. Niiler, K.H. Brink, and M.R. Abbott, 1992, Drifter observations of a cold filament off Point Arena, California, *J. Geophys. Res.*, 97, 3593-3610.
- Abbott, M.R., and M.H. Freilich, 1992, Report of the EOS oceans panel to the payload panel, *Paleogeography, Paleoclim., Paleoecol. (Global and Planetary Change)*, 98, 25-28.
- Abbott, M.R., 1993, Phytoplankton patchiness: ecological implications and observation methods, In: *Patch Dynamics*, S.A. Levin, T.M. Powell, and J.H. Steele, eds., Springer Verlag, pp. 37-49.
- Paden, C.A., C.D. Winant, and M.R. Abbott, 1993, Tidal and atmospheric forcing of the upper ocean in

the Gulf of California, Part 2: Surface heat flux, *J. Geophys. Res.*, 98, 20,091-20,104.

Denman, K.L., and M.R. Abbott, 1994, Time scales of pattern evolution from cross-spectrum analysis of advanced very high resolution radiometer and coastal zone color scanner imagery, *J. Geophys. Res.*, 99, 7433-7442.

Abbott, M.R., K.H. Brink, C.R. Booth, D. Blasco, M. Swenson, C.O. Davis, and L. Codispoti, 1995, Scales of variability of bio-optical properties as observed from near-surface drifters, *J. Geophys. Res.*, 100, 13,345-13,367.

Abbott, M. R., and B. Barksdale, 1995, Variability in upwelling systems as observed by satellite remote sensing, In: Dahlem Workshop on Upwelling in the Ocean: Modern Processes and Ancient Records, C.P. Summerhayes et al., eds., John Wiley, New York. pp. 221-238.

Letelier, R.M., and M.R. Abbott, 1996, An analysis of chlorophyll fluorescence algorithms for the Moderate Resolution Imaging Spectrometer (MODIS), *Remote Sens. Environ.*, 58, 215-223.

Letelier, R.M., M.R. Abbott, and D.M. Karl, 1996, Southern Ocean optical drifter experiment, *Ant. J. United States*, 30, 108-110.

Letelier, R.M., M.R. Abbott, and D.M. Karl, 1997, Chlorophyll natural fluorescence response to upwelling events in the Southern Ocean, *Geophys. Res. Letters*, 24, 409-412.

Abbott, M.R., and R.M. Letelier, 1997, Going with the flow - The use of optical drifters to study phytoplankton dynamics, In: *Monitoring Algal Blooms: New Techniques for Detecting Large-Scale Environmental Change*, M. Kahru and C. Brown, eds., R.G. Landes Co., New York. pp. 145-170.

Moore, J.K., M.R. Abbott, and J.G. Richman, 1997, Variability in the location of the Antarctic Polar Front (90°W - 20°W) from satellite sea surface temperature data, *J. Geophys. Res.*, 102, 27,825-27,833.

Abbott, M.R., and R.M. Letelier, 1997, Bio-optical drifters - Scales of variability of chlorophyll and fluorescence, In: *Ocean Optics XIII*, S.G. Ackleson and R. Frouin, eds., Proc. SPIE 2963, 216-221.

Spitz, Y.H., J.R. Moisan, M.R. Abbott, and J.G. Richman, 1998, Data assimilation and a pelagic ecosystem model: Parameterization using time series observations., *J. Mar. Systems*, 16, 51-68.

Abbott, M.R., and R.M. Letelier, 1998, Decorrelation scales of chlorophyll as observed from bio-optical drifters in the California Current, *Deep-Sea Res. II*, 45, 1639-1668.

Jain, L.K., and M.R. Abbott, 1998, DOVE: distributed object-based scientific visualization environment. *Concurrency – Practice and Experience*, 10, 1087-1095.

Bartlett, J. S., M. R. Abbott, R. M. Letelier, and J.G. Richman, 1998, Chlorophyll concentration estimated from irradiance measurements at fluctuating depths, In: *Proceedings of SPIE (Ocean Optics XIV) CD-ROM*. Palos Verdes Estates, CA: SPIE.

Moore, J.K., M.R. Abbott, and J.G. Richman, 1999, Location and dynamics of the Antarctic Polar Front from satellite sea surface temperature data, *J. Geophys. Res.*, 104, 3059-3073.

Moore, J.K., M.R. Abbott, J.G. Richman, W.O. Smith, T.J. Cowles, K.H. Coale, W.D. Gardner, and R.T. Barber, 1999, SeaWiFS satellite ocean color data from the Southern Ocean, *Geophys. Res. Letters*, 26, 1465-1468.

Moore, J.K., M.R. Abbott, J.G. Richman, and D.M. Nelson, 2000, The Southern Ocean at the Last Glacial Maximum: A strong sink for atmospheric carbon dioxide, *Global Biogeochem. Cycles*, 14, 455-475.

Abbott, M.R., J.G. Richman, R.M. Letelier, and J.S. Bartlett, 2000, The spring bloom in the Antarctic Polar Frontal Zone as observed from a mesoscale array of bio-optical sensors, *Deep-Sea Res. II*, 47, 3285-3314.

Moore, J.K., and M.R. Abbott, 2000, Phytoplankton chlorophyll distributions and primary production in the Southern Ocean, *J. Geophys. Res.*, 105, 28,709-28,722.

Letelier, R.M., D.M. Karl, M.R. Abbott, P. Flament, M.H. Freilich, R. Lukas, and P.T. Strub, 2000, Role of late winter mesoscale events in the biogeochemical variability of the upper water column of the North Pacific Subtropical Gyre, *J. Geophys. Res.*, 105, 28,723-28,740.

Abbott, M.R. R.M. Letelier, S. Laney, and J.S. Bartlett, 2000, Field and laboratory measurements of passive fluorescence and applications to MODIS data, In: *Proceedings of SPIE (Ocean Optics XV) CD-ROM*. Palos Verdes Estates, CA: SPIE.

Spitz, Y.H., J.R. Moisan, and M.R. Abbott, 2001, Configuring an ecosystem model using data from the Bermuda-Atlantic Time Series (BATS), *Deep-Sea Res. II*, 48, 1733-1768.

Landry, M.R., S.L. Brown, K.E. Selph, M.R. Abbott, R.M. Letelier, S. Christensen, R.R. Bidigare, and K. Casciotti, 2001, Initiation of the spring phytoplankton increase in the Antarctic Polar Front Zone at 170°W, *J. Geophys. Res.*, 106, 13,903-13,916.

Mengelt, C., M.R. Abbott, J.A. Barth, R.M. Letelier, C.I. Measures, and S. Vink, 2001, Phytoplankton pigment distribution in relation to the physics across the Antarctic Polar Front, 170°W, *Deep-Sea Res. II*, 48, 4081-4100.

Abbott, M.R., J.G. Richman, J.S. Nahorniak, and B.S. Barksdale, 2001, Meanders in the Antarctic Polar Frontal Zone and their impact on phytoplankton, *Deep-Sea Res. II*, 48, 3891-3912.

Fennel, K., Y.H. Spitz, R.M. Letelier, M.R. Abbott and D.M. Karl, 2001, A deterministic model for N<sub>2</sub> fixation at the HOT site in the subtropical North Pacific, *Deep-Sea Res. II*, 49, 149-174

Nahorniak, J.S., M.R. Abbott, R.M. Letelier, and W.S. Pegau, 2001, Analysis of a method to estimate chlorophyll-a concentration from irradiance measurements at varying depths, *J. Atmos. Ocean. Tech.*, 18, 2063-2073.

Laney, S.R., R.M. Letelier, R.A. Desiderio, M.R. Abbott, D.A. Kiefer, and C.R. Booth, 2001, Measuring the natural fluorescence of phytoplankton cultures, *J. Atmos. Ocean. Tech.*, 18, 1924-1934.

Landry, M.R., K.E. Selph, S.L. Brown, M.R. Abbott, C.I. Measures, S. Vink, C.B. Allen, A. Calbet, S. Christensen, and H. Nolla, 2002, Seasonal dynamics of phytoplankton in the Antarctic Polar Front region at 170°W, *Deep-Sea Res. II*, 49, 1843-1865

Moisan, J.R., T.A. Moisan, and M.R. Abbott, 2002, Modeling the effect of temperature on the maximum growth rates of phytoplankton populations, *Ecol. Modeling*, 153, 197-215.

Moore, J.K., and M.R. Abbott, 2002, Surface chlorophyll concentrations in relation to the Antarctic Polar Front: Seasonal and spatial patterns from satellite observations, *J. Mar. Systems*, 37, 69-86.

Fennel, K., M.R. Abbott, Y.H. Spitz, J.G. Richman, and D.M. Nelson, 2003, Modeling controls of phytoplankton production in the southwest Pacific sector of the Southern Ocean, *Deep-Sea Res. II*, 50, 769-798.

Fennel, K., M.R. Abbott, Y.H. Spitz, J.G. Richman, and D.M. Nelson, 2003, Impacts of iron control on phytoplankton production in the modern and glacial Southern Ocean, *Deep-Sea Res. II*, 50, 833-851.



Hoge, F.E., P.E. Lyon, R.N. Swift, J.K. Yungel, M.R. Abbott, R.M. Letelier, and W.E. Esaias, 2003, Validation of Terra-MODIS phytoplankton chlorophyll fluorescence line height. I. Initial airborne lidar results, *Appl. Optics*, 42, 2767-2771.

Letelier, R.M., D.M. Karl, M.R. Abbott, and R.R. Bidigare, 2004, Light driven seasonal patterns of chlorophyll and nitrate in the lower euphotic zone of the North Pacific subtropical gyre, *Limnol. Oceanogr.*, 49, 508-519.

Doney, S.C., M.R. Abbott, J.J. Cullen, D.M. Karl, and L. Rothstein, 2004, From genes to ecosystems: the ocean's new frontier, *Frontiers Ecology Environ.*, 2, 457-466.

Laney, S.R., R.M. Letelier, and M.R. Abbott, 2005, Parameterizing the natural fluorescence kinetics of *Thalassiosira weissflogii*, *Limnol. Oceanogr.*, 50, 1499-1510.

Rothstein, L., M.R. Abbott, E. Chassignet, J. Cullen, K. Denman, S. Doney, H. Ducklow, K. Fennel, M. Follows, D. Haidvogel, E. Hofmann, D. Karl, J. Kindle, I. Lima, M. Maltrud, C. McClain, D. McGillicuddy, J. Olascoaga, Y. Spitz, J. Wiggert, and J. Yoder, 2006, Modeling ocean ecosystems: The PARADIGM program, *Oceanography*, 19, 22-51

Abbott, M.R., and C.E. Sears, 2006, The always-connected world and its impacts on ocean research, *Oceanography*, 19, 14-21.

Corno, G., R.M. Letelier, M.R. Abbott, and D.M. Karl, 2006, Assessing primary production variability in the North Pacific Subtropical Gyre: A comparison of Fast Repetition Rate Fluorometry and <sup>14</sup>C measurements, *J. Phycology*, 42, 51-60.

Corno, G., D.M. Karl, M.J. Church, R.M. Letelier, R. Lukas, R.R. Bidigare, and M.R. Abbott, 2007, The impact of climate forcing on ecosystem processes in the North Pacific Subtropical Gyre, *J. Geophys. Res.*, 112, C04021, doi:10.1029/2006JC003730

Corno, G., R.M. Letelier, M.R. Abbott, D.M. Karl, and R. Bidigare, 2008, Temporal and vertical variability in photosynthesis in the North Pacific Subtropical Gyre, *Limnol. Oceanogr.*, 53: 1252-1265.

Abbott, M.R., 2008, Oceanography in 2028, *Oceanography*, 21, 74-81.

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. Phycology*, 45, 298-310.

Abbott, M.R., 2009, A new path for science? In: *The Fourth Paradigm: Data-Intensive Scientific Discovery*, T. Hey, S. Tansley, and K. Tolle, eds., Microsoft Research, pp. 111-116.

Muller-Karger, F., M. Roffer, N. Walker, M. Oliver, O. Schofield, M. Abbott, H. Graber, R. Leben, G. Goni, 2013, Satellite Remote Sensing in Support of an Integrated Ocean Observing System, *Geoscience and Remote Sensing Magazine, IEEE*, vol.1, no.4, 8-18, doi: 10.1109/MGRS.2013.2289656

#### Editorials

Abbott, M.R. 2013. From the President: Shifting waters. *Oceanography* 26(1):7, <http://dx.doi.org/10.5670/oceanog.2013.10>.

Abbott, M.R. 2013. From the President—Science and society: Broadening our outlook. *Oceanography* 26(2):7, <http://dx.doi.org/10.5670/oceanog.2013.22>.

Abbott, M.R. 2013. From the President: The era of big data comes to oceanography. *Oceanography* 26(3):7–8, <http://dx.doi.org/10.5670/oceanog.2013.68>.

Abbott, M.R. 2013. From the President—Early career scientists: Funding and publishing challenges. *Oceanography* 26(4):7, <http://dx.doi.org/10.5670/oceanog.2013.83>.

Abbott, M.R. 2014. From the President—Preparing our graduate students for a new world. *Oceanography* 27(1):7, <http://dx.doi.org/10.5670/oceanog.2014.28>

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