

## CURRICULUM VITAE

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### EDUCATION

- 1970–1974 A.B., Honors in Biology, General College Honors, Valedictorian (i.e., Farewell Speaker, Cowell College), University of California, Santa Cruz
- 1980 Doctor of Philosophy, Biological Oceanography, University of California, San Diego, Scripps Institution of Oceanography

### PROFESSIONAL EXPERIENCE

- 1974–1975 Marine Technician, University of California, Santa Cruz
- 1975–1980 Research Assistant, Scripps Institution of Oceanography, University of California, San Diego
- 1976–1977 Brython P. Davis Fellowship, University of California, San Diego
- 1980–1982 Visiting Fellowship, Bedford Institute of Oceanography, Dartmouth, Nova Scotia, Canada
- 1982–1986 Assistant Professor of Marine Studies and Zoology, Research Scientist University of Texas, Marine Science Institute
- 1986–1995 Research Scientist, Bigelow Laboratory for Ocean Sciences West Boothbay Harbor, Maine
- 1990-1991 Visiting Scientist, NSERC International Scientific Exchange Award Dalhousie University, Halifax, Nova Scotia
- 1990-1995 Adjunct Professor of Oceanography, Dalhousie University Halifax, Nova Scotia
- 1995-2014 Professor of Oceanography, Dalhousie University, Halifax, Nova Scotia
- 1995-2011 NSERC/Satlantic Chair in Environmental Observation Technology, Dalhousie University, Halifax, Nova Scotia
- 1995-2010 Adjunct Scientist, Bigelow Laboratory for Ocean Sciences West Boothbay Harbor, Maine
- 2000-2005 Killam Professor of Oceanography, Dalhousie University
- 2006-2010 Killam Chair in Ocean Studies, Dalhousie University
- 2011-2014 University Research Professor, Dalhousie University
- 2014- Professor Emeritus and Adjunct, Department of Oceanography, Dalhousie University

## PROFESSIONAL SERVICE

### *Reviewer:*

African Journal of Marine Science, American Geophysical Union Antarctic Series, American Chemical Society, Antarctic Science, Aquatic Microbial Ecology, Biogeosciences, CalCOFI Reports, Canadian Journal of Fisheries and Aquatic Sciences, Continental Shelf Research, Contributions in Marine Science, Coral Reefs, Council of Canadian Academies, Cytometry, Deep-Sea Research I and II, Estuarine Coastal and Shelf Science, European Journal of Phycology, Geophysical Research Letters, Geoscience Canada, Global Biogeochemical Cycles, Handbook of Environmental Chemistry, Hydrobiologia, Indian Journal of Marine Science, International Journal of Environmental Sciences, International Journal of Remote Sensing, IPCC WG1, Journal of Global Biogeochemical Cycles, Journal of Geophysical Research Oceans, Journal of Great Lakes Research, Journal of Marine Research, Journal of Marine Systems, Journal of Photochemistry and Photobiology B: Biology, Journal of Phycology, Journal of Plankton Research, Journal of Sea Research, Journal of the World Aquaculture Society, Limnology and Oceanography, Limnology and Oceanography: Methods, Marine Biology, Marine Chemistry, Marine and Freshwater Research, Marine Pollution Bulletin, Mare Nor, Marine Ecology Progress Series, Marine and Freshwater Research, Nature, Nature Reviews Microbiology, Oceanography Magazine, Oceanologica Acta, Photochemistry and Photobiology, Photochemistry and Photobiology, b-Biology, Photosynthesis Research, Plant, Cell and Environment, PNAS (Guest Editor), Polar Biology, Progress in Oceanography, Science, The Sea. Proposal reviewer for NSF (Biological Oceanography, Chemical Oceanography, International Programs, Polar Programs, EpSCOR, Biological Research Resources, SBIR), NASA (Oceanic Processes, Global Change Research, EOS), NOAA (Sea Grant [several states], Global Change, NOPP), U.S. NRC, USDA, Australian Research Council, FONDECYT (Chile), Hong Kong RGC, NERC (U.K.), SLW, ALW (Netherlands), NSERC Canada, Canada Foundation for Innovation, Canadian Foundation for Climate and Atmospheric Sciences, United Nations Environmental Programme, Guggenheim Foundation, Rockefeller Foundation, Third World Academy of Sciences. Program / Science Plan reviewer for IOC.

NSF Biological Oceanography Panel, April, August 1986.

NSERC Earth Sciences and Ecology Scholarship Selection Committee, 1998-99.

CFCAS Network Supplement Review Committee Chair, 2010.

### *Editorial Boards:*

Journal of Marine Systems (1990 - 96).

Journal of Plankton Research (1990 - 2004).

Associate Editor, Journal of Phycology (1999 - 2001).

### *Service to Scientific Societies:*

The Oceanography Society Meetings Committee, 1988 – 93, Fellows Committee (2006 - 2009), Councillor, (2009 - 2011).

American Society of Limnology and Oceanography Nominating Committee (1994-95; Chair, 1995).

American Society of Limnology and Oceanography Board of Directors (1998-2001).

Phycological Society of America Policy and Conservation Committee (2010 - 2013).

Royal Society of Canada Atlantic Steering Committee (2013 - ).

### *Coordination of International Meetings:*

ASLO Special Symposium, “What Controls Phytoplankton Production in Nutrient-Rich Areas of the Open Sea” Co-chair, 1991.

Chair and member of Organizing Committee, SCOR - IOC workshop: GEOHAB (Global Ecology and Oceanography of Harmful Algal Blooms), Havreholm, Denmark, October 1998.

Co-convenor: “Defining the Scientific and Legal Uncertainties of Carbon Sequestration in the Ocean by Fertilization.” Washington DC, April 2001.

Co-convenor: “Workshop on real-time coastal observing systems for ecosystem dynamics and harmful algal blooms.” Villefranche-sur-mer, June 2003.

*Panels and Steering Groups*

Member, Botanical Society of America / Phycological Society of America subcommittees on Global Change and Oceanographic Processes 1992; Ecology, Physiology and Biochemistry 1993.  
 Member, SCOR Working Group 97, "Physiological Ecology of Harmful Algal Blooms".  
 Planning committee: Ocean Optics XIII, 1996; Ocean Optics XVIII, 2006; Fluorescence in Aquatic Sciences meeting, Czech Republic, 2006.  
 NSERC Strategic Advisory Committee, 1998.  
 GEOHAB Scientific Steering Committee, 1999 - 2000.  
 Member, Ocean Carbon Working Group (OCTET), 1999.  
 NSERC Section 08/09 Reallocation Committee 2000-2001.  
 Coastal Ocean Observations Panel of the Global Ocean Observing System 2000 - 2005.  
 Partnership for Advancing Interdisciplinary Global Modeling (PARADIGM) Executive, 2001 - 2007.  
 Canada GEOHAB Steering Committee, 2002.  
 Alliance for Coastal Technologies in situ Fluorometer workshop steering committee, 2005.  
 Canadian Institute for Advanced Research Task Team on Oceans, 2007 - 2010.

*Working groups*

National Research Council/National Academy of Sciences Workshop (Ocean fertilization):  
 Commentator and Rapporteur, Nov. 1990.  
 NATO Advanced Research Workshop, "Towards a model of biogeochemical ocean processes," Bonas, France. Phytoplankton working group chair, invited, 1992.  
 NSF Workshop: "Ocean Ecology: Understanding and Vision for REsearch" Rapporteur, 1998  
 Workshop for an Ocean Observing System for U.S. Coastal Waters, Working Group Chair, 1999.  
 SOLAS open meeting working group chair, 2000.

*Advisory boards:*

Jane MacIsaac Facility for Individual Particle Analysis, 1991 - 93.  
 Aquasearch Inc. Advisory Group 1996 - 2002.  
 Hong Kong Red Tide Experts Group, 1998 - 99.  
 Provasoli-Guillard Culture Collection for Marine Phytoplankton 2001 - 2003.  
 Alliance for Coastal Technologies Fluorometer Performance Verification Technical Advisory Committee, 2005.  
 Canadian Science Advisory Secretariat Panel: Assessment of Ocean Fertilization Consequences and Impacts, 2009.

*Other:*

Director, Cellana BV (2007 - 2011).  
 Founding Member, HR Biopetroleum, Phycoscience.  
 Invited Faculty, Agouron Institute / C-MORE Summer Course on Microbial Oceanography, University of Hawaii (2007-2009, 2011, 2013, 2014).  
 Visiting Professor, First Institute of Oceanography, State Oceanic Administration, Qingdao, China (2011).

**AWARDS AND RECOGNITION**

Editor's Citation for Excellence in Refereeing, Journal of Geophysical Research - Oceans, 1993.  
 Luigi Provasoli Award for Outstanding Publication in Journal of Phycology, 1996.  
 Killam Professor of Oceanography, Dalhousie University, 2000-2005.  
 Killam Chair in Ocean Studies, Dalhousie University, 2006-2010.  
 University Research Professor, Dalhousie University, 2011-2014.  
 ISI Highly Cited Researcher, 2004.  
 Member, Faculty of 1000 Biology: Ecosystem Ecology section of the Ecology Faculty (2005 - 2013).  
 Fellow of The Oceanography Society, 2005. Elected Councillor, 2009.  
 American Men and Women of Science, 2008; Canadian Who's Who 2008.  
 Ruth Patrick Award from the American Society of Limnology and Oceanography (2012): to honor outstanding research by a scientist in the application of basic aquatic science principles to the

identification, analysis and/or solution of important environmental problems (with S.W. Chisholm).  
 Fellow of the Royal Society of Canada 2012.  
 John H. Martin Award from the Association for the Sciences of Limnology and Oceanography (ASLO)  
 for: Li, W., D.V. Subba Rao, W.G. Harrison, J.C. Smith, J.J. Cullen, B. Irwin and T. Platt. 1983.  
 Autotrophic picoplankton in the tropical ocean. *Science* 219: 292–295.  
 Sustaining Fellow, Association for the Sciences of Limnology and Oceanography, 2015.

## PROFESSIONAL AFFILIATIONS

The Oceanography Society  
 American Society of Limnology and Oceanography  
 American Geophysical Union  
 Canadian Meteorological and Oceanographic Society  
 Royal Society of Canada  
 Phycological Society of America

## INVITED PRESENTATIONS (since 1994)

- 1994 Trondheim Biological Station, Norway, “Influence of UV Radiation and Ozone Depletion on the Photosynthesis of Antarctic Phytoplankton.”
- 1994 Workshop on the Ecology and Oceanography of Harmful Algal Blooms, Winter Park, CO, “Detection and Assessment of Harmful Algal Blooms with *In Situ* Optical Instruments.”
- 1994 Workshop: “The Interactions of Climate Change, Increasing UV-B Exposure, and Dissolved Organic Carbon, and Their Implications for Aquatic Ecosystems,” Jasper, Alberta. “Penetration of Biologically Effective UV Radiation in Different Aquatic Systems.”
- 1995 University of Southern Mississippi, Center for Marine Science, “Effects of Ultraviolet Radiation on the Photosynthesis of Antarctic Phytoplankton.”
- 1995 American Society of Limnology and Oceanography Summer Meeting, “Penetration of UV Radiation in Aquatic Systems and the Potential Ecological Effects of Ozone Depletion.”
- 1995 Workshop: “Atmospheric Changes in Atlantic Canada,” Halifax, Nova Scotia. “Quantifying the Potential Effects of Ozone Depletion on Aquatic Systems.”
- 1996 American Geophysical Union / American Society of Limnology and Oceanography Ocean Sciences Meeting, “Optical Observation Technologies and Harmful Algal Blooms.”
- 1996 Mount Allison University, Sackville, New Brunswick, “Optical Observation of Biological Variability in Surface Waters.”
- 1996 Woods Hole Oceanographic Institution. “Effects of ultraviolet radiation and ozone depletion on water-column primary production in the context of vertical mixing.”
- 1996 Guest lecturer for a course on Systems Approach to Biological Ocean Science, University of New Hampshire, Durham.
- 1996 Hargis Memorial Lecture, “Effects of ultraviolet radiation and ozone depletion on water-column primary production in the context of vertical mixing.” Univ. of Minnesota, Duluth.
- 1996 Conference: Remote Sensing for Marine Resource Users, Managers, and Educators, Rockport, Maine. “Optical observation technologies for long-term marine monitoring.”
- 1996 NATO Advanced Study Institute on “The Physiological Ecology of Harmful Algal Blooms,” Bermuda. “Special modalities of macronutrient assimilation” and “Behavior, physiology and the niche of depth-regulating phytoplankton.”
- 1996 American Society for Photobiology, 24th Annual Meeting, Atlanta. “Effect of UV on short-term photosynthesis of Antarctic Phytoplankton.” *Photochem. Photobiol.* 63: 12S - 13S.
- 1996 Inter-American Institute for Global Change Research. Workshop, Ensenada, Mexico. Keynote

- presentation, “Effects of UV on Phytoplankton.”
- 1996 Ontario Climate Advisory Committee, Workshop on Atmospheric Ozone, Downsview, Ontario, “Quantifying the influence of UV radiation and ozone depletion on biological and photochemical processes in natural waters.”
- 1997 Canadian Conference for Fisheries Research, Ottawa, Ontario. “Technologies for Optical Assessment of Ecologically Important Processes in Aquatic Systems.”
- 1997 Workshop: “Application of Remote Sensing to Red Tide Forecasts in the Gulf of Mexico” NOAA Coastal Services Center, Charleston, SC. Optical Assessment of Harmful Algal Blooms.”
- 1998 ONR-HyCODE Workshop, San Diego, CA, “Biological Oceanography in the Context of Ocean Color.”
- 1998 Department of Agriculture, Northern Ireland, Belfast: “Optical assessment of marine processes for ecosystem studies.”
- 1998 Ocean Sciences Jubilee Lecture: “Observing a Changing Ocean: Successes to Date and Strategies for the Future.” University of Wales, Bangor.
- 1998 Sixth European Marine Microbiology Symposium: “Tools for characterizing microbial adaptations and population dynamics in the context of harmful algal blooms.” Sitges, Spain.
- 1999 University of Maryland, Horn Point Laboratory: “Observing the ocean: Successes to date and strategies for the future.” April, 1999.
- 1999 XXII General Assembly, International Union of Geodesy and Geophysics, IAPSO Symposium on “Optical Oceanography & UV Radiation,” Birmingham. “Estimating UV attenuation and photochemical reaction rates from remote sensing of ocean color.” Birmingham, July 1999.
- 2000 AGU/ASLO Ocean Sciences Meeting, “Commercial Ocean Fertilization: We Know Enough to Know Better.” (w/ S.W. Chisholm).
- 2000 Leadership Seminar, International Seabed Authority, “Fertilizing the High Seas.” Jamaica, March 2000.
- 2000 Ocean Optics XV, “Quantifying biological effects of ultraviolet radiation.” Musée Océanographique, Monaco, October 2000.
- 2000 PICES IX, “Unanswered questions concerning commercial fertilization of the ocean.” Keynote presentation, Hakodate, Japan, October 2000.
- 2001 ICES Working Group on Harmful Algal Bloom Dynamics, “Optical sensing technologies for studies of harmful algal blooms.” Dublin, March 2001.
- 2001 Ocean Fertilization Workshop Public Session, U.S. House of Representatives: “Uncertain Relationships Between Scientific Research and Commercial Interests in Ocean Fertilization. Washington, DC, April 2001.
- 2001 Global Conference on Oceans and Coasts at Rio+10, Paris: “Carbon sequestration through large scale fertilization of ocean regions.” UNESCO, Paris, December 2001.
- 2002 Department of Marine Biology, University of Groningen, “Spectral parameterization of water column photosynthesis and its inhibition by UV radiation.”
- 2002 Fisheries Oceanography Committee (Canada) Annual Meeting. “The Coastal Component of the Global Ocean Observing System.” Dartmouth, Nova Scotia, March 2002.
- 2002 University of Maine, Orono. “On Models of Water Column Primary Productivity.” April 2002.
- 2002 Annual Meeting, American Society for Photobiology. “Simple Functions Describing the Effects of UV on Daily Water Column Photosynthesis.” Quebec, July 2002.
- 2002 Short course: “Fluorescence of chlorophyll in surface waters: measurement and interpretation.” Ocean Optics XVI, Santa Fe, NM Nov. 2002.
- 2003 Workshop on Real-Time Coastal Observing Systems for Ecosystems Dynamics and Harmful

- Algal Blooms. "Observation and prediction of harmful algal blooms." Villefranche-sur-mer, France, June 2003.
- 2003 Stazione Zoologica Anton Dohrn, Naples: "Observation and Prediction of Harmful Algal Blooms" and "Describing Growth of Phytoplankton as a Function of Environmental Conditions in Natural Waters." October 2003.
- 2004 Ocean Optics XVII, Fremantle, W. Australia: "Subsurface Layers of Phytoplankton: From the Deep Chlorophyll Maximum to Persistent Microscale Features." Oct. 2004. (*Awarded "Favorite talk."*)
- 2005 Workshop on the Applications of *in situ* Fluorometers in Nearshore Waters, Cape Elizabeth, Maine, Keynote presentation: "*In situ* fluorometers for coastal management applications: salvation or curse?" Feb. 2005.
- 2005 Special panel at the 8th International Conference on Remote Sensing for Marine and Coastal Environments, Halifax, NS: "The role of remote sensing in providing inputs for operational coastal management needs." May 2005.
- 2005 SOLAS synthesis workshop on iron addition experiments (FeAX's), Wellington, NZ. "Thoughts on co-limitation of planktonic processes in the ocean". Oct. 2005.
- 2006 Ocean Sciences Meeting, Honolulu, Plenary Session. "Ocean Observing Systems and the Interaction of Technology, Information and Understanding." Feb. 2006.
- 2006 International Oceans Institute Training Programme – Ocean Governance: Policy, Law and Management, Halifax, June 2006. "Carbon sequestration in the ocean."
- 2006 Agouron Institute Summer Course in Microbial Oceanography, University of Hawaii, July 2006: "Behavior, physiology and the niche of marine phytoplankton."  
"Approaches for sampling pelagic ecosystems on scales that matter."  
"Science, society and ocean fertilization for carbon credits."  
"The genomics revolution and the future of biological oceanography."
- 2006 University of Urbino, Italy: "Climate Change Science, Economics, and Ocean Fertilization for Carbon Credits." November 2006.
- 2007 Cullen, J.J. Aquafluor: Chlorophyll Fluorescence in Aquatic Sciences Meeting. Nove Hradý, Czech Republic. "Relating variability of fluorescence yield to the physiological status of phytoplankton." May 2007.
- 2007 Cullen, J.J. and H. Ritchie. "The Lunenburg Bay Project." Canadian Meteorological and Oceanographic Society Congress. St. John's, NL. May 2007. (Presented by H. Ritchie).
- 2007 Agouron Institute Summer Course in Microbial Oceanography, University of Hawaii, June 2007: "Describing and predicting environmental influences on phytoplankton communities and food web structure."  
"Measurements and models of primary productivity."  
"Perspectives on ocean carbon sequestration."
- 2007 Twentieth Anniversary Symposium for the International Geosphere-Biosphere Programme: Earth System Science and Society. Stockholm, September 2007. "Science, policy and large-scale fertilization of the ocean for carbon offsets."
- 2007 Symposium: "Exploring Ocean Iron Fertilization: the scientific, economic, legal and political basis." Woods Hole Oceanographic Institution, September, 2007. "Intended and unintended consequences of ocean fertilization." (Keynote)
- 2007 Conference convened by the Venice Water Authority: Water Monitoring and Decentralized Systems." Venice, October 2007." A Real-time interdisciplinary coastal observation and prediction system in Lunenburg Bay, Canada."
- 2008 Canadian Institute for Advanced Research Workshop on Oceans, Vancouver, February 2008. "What will happen if we change the center of gravity of reactive nitrogen in the ocean?"

- 2008 Agouon Institute Summer Course in Microbial Oceanography, University of Hawaii, June 2008: “Describing and predicting environmental influences on phytoplankton communities and food web structure.”  
 “Measurements and models of primary productivity.”  
 “Perspectives on ocean carbon sequestration.”  
 “Ocean sensors, the information explosion and biological oceanography”
- 2008 University of Urbino, Italy: “Large scale cultivation of marine microalgae for fuel and food.” October 2008.
- 2008 University of New Brunswick, Fredericton: “Sustainable production of fuel and protein from marine microalgae.” November 2008.
- 2009 ASLO Aquatic Sciences Meeting 2009: “Science, Policy, and Fertilization of the Ocean for Carbon Offsets: Reflections on Twenty Years of Debate.” Plenary Address, January 2009.
- 2009 Canadian Meteorological and Oceanographic Society / La Société canadienne de météorologie et d'océanographie Congress, Halifax: “Fertilization of the Ocean for Climate Mitigation.” Plenary Address, June 2009.
- 2009 Workshop: Optical Physical and Ecosystem Regional Assessment (OPERA), La Spezia, Italy, December 2009. “Ideas for Next Generation of Bio-Optical Ecosystem Models.” (J.J. Cullen and K. Fennel).
- 2010 University of Texas Marine Science Institute, Port Aransas, Texas. Laura Randall Schweppe Lecture: “Optical Observation of the Ocean: 150 Years of Progress.” May, 2010.
- 2011 Lamont Doherty’s Earth Science Colloquium: “Chlorophyll *a* as the measure of phytoplankton biomass: Time to move on.” March, 2011.
- 2011 C-MORE Summer Course on Microbial Oceanography, University of Hawaii, June 2011: “Optical observations of the ocean.”  
 “Measurements and models of phytoplankton biomass and primary productivity.”  
 “Behavior, physiology and the niche of marine phytoplankton.”  
 “Chlorophyll *a* as the measure of phytoplankton biomass: Time to move on.”
- 2011 Lecture series in China: October, 2011:  
 “Optical observation of the ocean: 150 years of progress.” National Marine Forecasting Center, Beijing; East Sea Subadministration, State Oceanic Administration, Shanghai; Ocean University of China, Qingdao.  
 “Describing the dynamics of phytoplankton in ecosystem models.” College of Marine Science, Tianjin University of Science and Technology; First Institute of Oceanography, Qingdao.  
 “Observations and Models for Marine Environmental Prediction.” First Institute of Oceanography, Qingdao.
- 2012 Dalhousie University Faculty of Science Public Lecture Series (also broadcast on Eastlink Podium TV): “Optical Observation of the Ocean: 150 Years of Progress.” February 2012.
- 2012 ASLO Aquatic Science Meeting, Otsu, Lake Biwa, Japan: “Science, policy and large-scale fertilization of the ocean for carbon offsets.” (J.J. Cullen and S.W. Chisholm. Acceptance address for the Ruth Patrick Award, July 2012.)
- 2012 ASLO Aquatic Science Meeting, Japan: “A Framework for Describing the Dynamics of Phytoplankton Based on Optical Measurements, Including Fluorescence.” (Invited as tutorial, with A.B. Barnett, A.J. Comeau, Y. Huot and H.L. MacIntyre as co-authors, July 2012.)
- 2013 Bedford Institute of Oceanography, Dartmouth, Nova Scotia, April 2013: “Should we continue to use chlorophyll as the principal measure of phytoplankton biomass for another 70 years? (With apologies to Karl Banse)”.
- 2013 C-MORE Summer Course on Microbial Oceanography, University of Hawaii, May 2013: Three lectures.
- 2013 Woods Hole Oceanographic Institution, August 2013: “Chlorophyll as the measure of

phytoplankton biomass: Time to move on.”

- 2014 Royal Society of Canada Atlantic, Public Lecture, Halifax: “What’s the use of that? The case for exploring how things work.” April 2014.
- 2014 C-MORE Summer Course on Microbial Oceanography, University of Hawaii, May 2014: Three lectures
- 2014 History of Oceanography special event, “Oceanographers at Work,” University of Kings College, Halifax: “Changing oceanographic practice since the 1960s.” June 2014.
- 2014 Café Scientifique, Boothbay Harbor, Maine: “Forty years of ocean color.” August 2014.
- 2014 Bacon & Eggheads Breakfast Lecture, Parliament Hill, Ottawa: “Ocean acidification: the other carbon dioxide problem.” September, 2014.

## CITATION METRICS

From Google Scholar (<http://scholar.google.ca/citations?user=vr9t9fEAAA&hl=en>) – January 2016

	Citation indices	
	All	Since 2011
Citations	10,373	2868
h-index	53	30
i10-index	102	66

with 31 papers cited > 100 times each.

## PUBLICATIONS

- Eppley, R.W., E.H. Renger, W.G. Harrison and J.J. Cullen. 1979. Ammonium distribution in southern California coastal waters and its role in the growth of phytoplankton. *Limnol. Oceanogr.* 24: 495–509.
- Cullen, J.J. and E.H. Renger. 1979. Continuous measurement of the DCMU–induced fluorescence response of natural phytoplankton populations. *Mar. Biol.* 53: 13–20.
- Cullen, J.J. 1980. Chlorophyll maximum layers of the Southern California Bight and mechanisms of their formation and maintenance. Dissertation, University of California, San Diego, 138 pp.
- Star, J.L. and J.J. Cullen. 1981. Spectral analysis: A caveat. *Deep–Sea. Res.* 28: 93–97.
- Cullen, J.J. and R.W. Eppley. 1981. Chlorophyll maximum layers of the Southern California Bight and possible mechanisms of their formation and maintenance. *Oceanol. Acta* 4: 23–32.
- Cullen, J.J. and S.G. Horrigan. 1981. Effects of nitrate on the diurnal vertical migration, carbon to nitrogen ratio, and photosynthetic capacity of the dinoflagellate *Gymnodinium splendens*. *Mar. Biol.* 62: 81–89.
- Cullen, J.J. 1982. The deep chlorophyll maximum: comparing vertical profiles of chlorophyll a. *Can. J. Fish. Aq. Sci.* 39: 791–803.
- Cullen, J.J., S.G. Horrigan, M. Huntley and F.M.H. Reid. 1982. Yellow water in La Jolla Bay, California, July 1980. I. A bloom of the dinoflagellate, *Gymnodinium flavum* Kofoid and Swezy. *J. exp. mar. Biol.* 63: 67–80.
- Cullen, J.J., F.M.H. Reid and E. Stewart. 1982. Phytoplankton in the surface and chlorophyll maximum off southern California in August, 1978. *J. Plankton Res.* 4: 665–694.
- Li, W., D.V. Subba Rao, W.G. Harrison, J.C. Smith, J.J. Cullen, B. Irwin and T. Platt. 1983. Autotrophic picoplankton in the tropical ocean. *Science* 219: 292–295.
- Lewis, M.R., J.J. Cullen and T. Platt. 1983. Phytoplankton and thermal structure in the upper ocean: consequences of non–uniformity in chlorophyll profile. *J. Geophys. Res.* 88: 2565–2570.



- Cullen, J.J., E. Stewart, E. Renger, F.M.H. Reid, R.W. Eppley and C.D. Winant. 1983. Vertical motion of the thermocline, nitracline and chlorophyll maximum layers in relation to currents on the Southern California Shelf. *J. Mar. Res.* 41: 239–262.
- Lewis, M.R., J.J. Cullen and T. Platt. 1984. Relationships between vertical mixing and photoadaptation of phytoplankton: similarity criteria. *Mar. Ecol. Prog. Ser.* 15: 141–149.
- Eppley, R.W., F.M.H. Reid, J.J. Cullen, C.D. Winant and E. Stewart. 1984. Subsurface patch of a dinoflagellate (*Ceratium tripos*) off Southern California: patch length, growth rate, associated vertically migrating species. *Mar. Biol.* 80: 207–214.
- Lewis, M.R., E.P.W. Horne, J.J. Cullen, N.S. Oakey and T. Platt. 1984. Turbulent motions may control phytoplankton photosynthesis in the upper ocean. *Nature* 311: 49–50.
- Cullen, J.J., Mingyuan Zhu, R.F. Davis and D.C. Pierson. 1985. Vertical migration, carbohydrate synthesis, and nocturnal nitrate uptake during growth of *Heterocapsa niei* in a laboratory water column. p. 189–194. In: “Toxic Dinoflagellates.” *Proc. 3rd Intl. Conf. on Toxic Dinoflagellates.* D.M. Anderson, A.W. White and D.G. Baden (eds.) Elsevier.
- Cullen, J.J. 1985. Diel vertical migration by dinoflagellates: roles of carbohydrate metabolism and behavioral flexibility. In: “Migration: Mechanisms and Adaptive Significance.” M.A. Rankin (ed.) *Supplement to Contributions in Marine Science* 27: 135–152.
- Cullen, J.J., M. Zhu and D.C. Pierson. 1986. A technique to assess the harmful effects of sampling and containment for determination of primary production. *Limnol. Oceanogr.* 31: 1364–1373.
- Carlson, D.J., J.L. Cantey and J.J. Cullen. 1988. Description of and results from a new surface microlayer sampling device. *Deep-Sea Res.* 35: 1205–1213.
- Cullen, J.J., C. M. Yentsch, T. L. Cucci, and H. L. MacIntyre. 1988. Autofluorescence and other optical properties as tools in phytoplankton ecology. In: “Ocean Optics IX.” M. A. Blizard, ed., *Proc. SPIE* 925: 149–156.
- Cullen, J.J. and M.R. Lewis. 1988. The kinetics of algal photoadaptation in the context of vertical mixing. *J. Plankton Res.* 10: 1039–1063.
- Cullen, J.J., H.L. MacIntyre and D.J. Carlson. 1989. Distributions and photosynthesis of phototrophs in sea-surface films. *Mar. Ecol. Prog. Ser.* 55: 271–278.
- Neale, P.J., J.J. Cullen, and C.M. Yentsch 1989. Bio-optical inferences from in vivo fluorescence: What kind of fluorescence is measured in flow cytometry? *Limnol. Oceanogr.* 34: 1739–1748.
- Cullen, J.J. 1990. On models of growth and photosynthesis in phytoplankton. *Deep-Sea Res.* 37: 667–683.
- Cullen, J.J. 1990. Biological oceanography: past, present and future. *Oceanogr. Mag.* 3: 50–51.
- Ackleson, S.G., J.J. Cullen, J. Brown and M.P. Lesser. 1990. Some changes in the optical properties of marine phytoplankton in response to high light intensity. *Ocean Optics X, SPIE* 1302: 238–249.
- Weiler, C.S. W.M. Balch, S.W. Chisholm, J.J. Cullen, W.G. Harrison, P.A. Matrai, J.J. McCarthy, J.R. Nelson, M.J. Perry, D.G. Redalje, J.H. Sharp and M.M. Sinclair. 1990. Richard W. Eppley’s contributions to phytoplankton physiology and biological oceanography. *Oceanogr. Mag.* 3 (2): 42–46.
- Cullen, J.J. and M.P. Lesser. 1991. Inhibition of photosynthesis by ultraviolet radiation as a function of dose and dosage rate: Results for a marine diatom. *Mar. Biol.* 111: 183–190.
- Kiefer, D.A. and J.J. Cullen. 1991. Phytoplankton growth and light absorption as regulated by light, temperature, and nutrients. *Polar Research* 10: 163–172.
- Lewis, M.R. and J.J. Cullen. 1991. From cells to the ocean: Satellite ocean color. In, “Individual cell and particle analysis in oceanography”. S. Demers, ed., *NATO ASI Series G27*: 325–337.
- Cullen, J.J. 1991. Hypotheses to explain high-nutrient conditions in the open sea. *Limnol. Oceanogr.* 36: 1578–1599.
- Cullen, J.J., M.R. Lewis, C.O. Davis and R.T. Barber. 1992. Photosynthetic characteristics and estimated growth rates indicate grazing is the proximate control of primary production in the equatorial Pacific. *J. Geophys. Res.* 97: 639–654.

- Stegmann, P.M., M.R. Lewis, C.O. Davis and J.J. Cullen. 1992. Primary production estimates from recordings of solar-stimulated fluorescence in the equatorial Pacific at 150° W. *J. Geophys. Res.* 97: 627-638.
- Cullen, J.J., X. Yang, and H.L. MacIntyre 1992. Nutrient limitation of marine photosynthesis. In: "Primary Productivity and Biogeochemical Cycles in the Sea." P.G. Falkowski and A. Woodhead (eds.), Plenum, New York 69-88.
- Cullen, J.J., P.J. Neale, and M.P. Lesser. 1992. Biological weighting function for the inhibition of phytoplankton photosynthesis by ultraviolet radiation. *Science* 258: 646-650.
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