

CURRICULUM VITAE

PATRICIA M. GLIBERT

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I. Education

1974 BA Skidmore College, Saratoga Springs, NY, Biology [*Phi Beta Kappa*]
1976 MS University of New Hampshire, Earth Sciences
1982 PhD Harvard University, Organismal and Evolutionary Biology

II. Professional Background

1981 - 1982 Postdoctoral Scholar, Woods Hole Oceanographic Institution
1982 - 1986 Assistant Scientist, Woods Hole Oceanographic Institution
1986 - 1989 Assistant Research Scientist, University of Maryland
Center for Environmental Science, Horn Point Laboratory
1989 - 1993 Associate Professor, University of Maryland
Center for Environmental Science, Horn Point Laboratory
1993 - present Professor, University of Maryland
Center for Environmental Science, Horn Point Laboratory

III. Significant Honors and Awards

2001. Environment Expert Award bestowed by the Minister of Health, Kuwait.
2006. University of Maryland Board of Regents Award for Excellence in Research, Scholarship and Creative Activity.
2011. HPL Director's award for outstanding productivity.
2011. Honorary Doctorate, conferred by Linnaeus University, Sweden.
2012. Distinguished Service Award, Kuwait University
2012. Elected Fellow, AAAS
2013. Named one of the top 25 women professors in the State of Maryland (www.statestat.org)
2014. Named one of China's 1000 Talents and Visiting Professor, Zhejiang University
2016. Named Sustaining Fellow, Association for the Sciences of Limnology and Oceanography

IV. Research

A. Research Interests

Transformations and fate of inorganic and organic nitrogen in marine and estuarine systems; global changes in the nitrogen cycle by anthropogenic activities; ecology of phytoplankton in estuarine and oceanic environments; primary productivity and its regulation by environmental factors; stable isotope techniques; eutrophication, its effects and global changes therein; growth, physiology and mixotrophy of marine cyanobacteria and harmful algal bloom species; effects of harmful algae on early stages of shellfish growth; ecological stoichiometry and its effects on aquatic food web structure and invasive species; "top-down" control of nitrogen cycling; effects of ocean fertilization for carbon sequestration.

B. Publications (2012-2016)

2012

Papers

- Li, J., **P.M. Glibert**, J.A. Alexander, and M.E. Molina. 2012. Growth and competition of several harmful dinoflagellates under different nutrient and light conditions. *Harmful Algae* 13: 112-120.
- Glibert, P.M.**, J.M. Burkholder, and T.M. Kana, 2012. Recent advances in understanding of relationships between nutrient availability, forms and stoichiometry and the biogeographical distribution, ecophysiology, and food web effects of pelagic and benthic *Prorocentrum* spp. *Harmful Algae* 14: 231-259.
- Xu, J., **P.M. Glibert**, H. Liu, K. Yin, X. Yuan, M. Chen, and P.J. Harrison. 2012. Nitrogen sources and rates of phytoplankton uptake in different regions of Hong Kong waters in summer. *Estuaries and Coasts*. 35: 559-571.
- Glibert, P.M.** 2012. Ecological stoichiometry and its implications for aquatic ecosystem sustainability. *Current Opinion Envir. Sustainability*. 4:272-277.

Book chapters

- Kelble, C., C. Heil and **P.M. Glibert**. 2012. Water quality is monitored to assess environmental conditions. In: W.L. Kruczynski and P.J. Fletcher, eds. *Tropical Connections: South Florida's Marine Environment*. IAN press, University of Maryland Center for Environmental Science, Cambridge MD, pp. 108-109.
- Glibert, P.M.** and C. Heil 2012. Nutrients are important water quality parameters. In: W.L. Kruczynski and P.J. Fletcher, eds. *Tropical Connections: South Florida's Marine Environment*. IAN press, University of Maryland Center for Environmental Science, Cambridge MD, p. 111.
- Glibert, P.M.** and C. Heil. 2012. Nutrients cycle through the environment. In: W.L. Kruczynski and P.J. Fletcher, eds. *Tropical Connections: South Florida's Marine Environment*. IAN press, University of Maryland Center for Environmental Science, Cambridge MD, pp. 112-113.
- Glibert, P.M.** and C. Heil. 2012. Too many nutrients result in eutrophication. In: W.L. Kruczynski and P.J. Fletcher, eds. *Tropical Connections: South Florida's Marine Environment*. IAN press, University of Maryland Center for Environmental Science, Cambridge MD, pp. 114.
- Glibert, P.M.** and C. Heil. 2012. There is a gradient of nutrient limitation across Florida Bay. In: W.L. Kruczynski and P.J. Fletcher, eds. *Tropical Connections: South Florida's Marine Environment*. IAN press, University of Maryland Center for Environmental Science, Cambridge MD, p. 124.
- Glibert, P.M.** 2012. Eutrophication. In R. Kundis Craig, B. Pardy, J. C. Nagle, O. Schmitz, & W. Smith (Eds.), *The Berkshire Encyclopedia of Sustainability: Vol. 5. Ecosystem Management and Sustainability* Great Barrington, MA: Berkshire Publishing, pp. 124-127.

2013

Papers

- Flynn, K.J., D.K. Stoecker, A. Mitra, J.A. Raven, **P.M. Glibert**, P.J. Hansen, E. Granéli, and J.M. Burkholder. 2013. Misuse of the phytoplankton-zooplankton dichotomy: the need to assign organisms as mixotrophs within plankton functional types. *J. Plank. Res.* 35: 3-11
- Glibert, P.M.**, T. M. Kana, and K. Brown. 2013. From limitation to excess: consequences of substrate excess and stoichiometry for phytoplankton physiology, trophodynamics and biogeochemistry, and implications for modeling. *J. Mar. Systems*. 125: 14-28. Doi:10.1016/j.jmarsys.2012.10.004.

- Bouwman, A.F., A.H.W., Beusen, C.C. Overbeek, D.P. Bureau, M. Pawlowski, and **P.M. Glibert**. 2013. Hindcasts and future projects of global inland and coastal nitrogen and phosphorus loads due to finfish aquaculture. *Rev. in Fish. Sci.*, 21: 112-156.
- Bouwman, L., A. Beusen, **P.M. Glibert**, C. Overbeck, M. Pawlowski, J. Herrera, S. Mulsow, R. Yu, and M.J. Zhou. 2013. Mariculture: Significant and expanding cause of coastal nutrient enrichment. *Environmental Research Letters* 8: 044026 (5 pp)¹
- Glibert, P.M.** 2013. Harmful algal blooms in Asia: an insidious and escalating water pollution phenomenon with effects on ecological and human health. *Asia Network. Exchange*. 21:1-17.
- Mitra, A., K.J., Flynn, J.M., Burkholder, T. Berge, A. Calbet, J.A. Raven, E. Granéli, **P.M. Glibert**, P.J. Hansen, D.K. Stoecker, F. Thingstad, U. Tillmann, S. Våge, S. Wilken, M. Zubkov. 2014. The role of mixotrophic protists in the biological carbon pump. *Biogeosciences* 11: 995-1005.

Book chapters

- Burkholder, J.M. and **P.M. Glibert**. 2013. Eutrophication and oligotrophication. *Encyclopedia of Biodiversity*, Elsevier. Vol. 3, 347-371.

2014

Papers

- Glibert, P.M.**, D. Hinkle, B. Sturgis and R. Jesien. 2014. Eutrophication of a Maryland/Virginia coastal lagoon: A tipping point, ecosystem changes, and potential causes. *Estuaries and Coasts* 37: S128-S146. doi:10.1007/s12237-013-9630-3.
- Al-Azri, A., S.A. Piontkovski, K. A. Al-Hashmi, J.I. Goes, H. do. R. Gomes, and **P.M. Glibert**. 2014. Mesoscale and nutrient conditions associated with the massive 2008 *Cochlodinium polykrikoides* bloom in the Sea of Oman/Arabian Gulf. *Estuaries and Coasts*. 37: 325-338.²
- Cornwell, J.C., **P.M. Glibert**, and M. Owens. 2014. Nutrient fluxes from sediments in the San Francisco Bay Delta. *Estuaries and Coasts*. doi:10.1007/s12237-013-9755-4.
- Glibert, P.M.**, R.C. Dugdale, F. Wilkerson, A.E. Parker, J. Alexander, E. Antell, S. Blaser, A. Johnson, J. Lee, T. Lee, S. Murasko and S. Strong. 2014. Major-but rare- spring blooms in San Francisco Bay Delta, California, a result of the long-term drought, increased residence times, and altered nutrient loads and forms. *Journal Experimental Marine Biology and Ecology*. 460: 8-18. doi:10.1016/j.jembe.2014.06.001
- Glibert, P.M.**, F. Wilkerson, R.C. Dugdale, A.E. Parker, J.A. Alexander, S. Blaser and S. Murasko. 2014. Microbial communities from San Francisco Bay Delta respond differently to oxidized and reduced nitrogen substrates – even under conditions that would otherwise suggest nitrogen sufficiency. *Frontiers in Marine Science* 1:article 17. doi: 10.3389/fmars.2014.00017.
- Glibert, P.M.**, J.I. Allen, Y. Artioli, A. Beusen, L. Bouwman, J. Harle, R. Holmes, and J. Holt. 2014. Vulnerability of coastal ecosystems to changes in harmful algal bloom distribution in response to climate change: projections based on model analysis. *Global Change Biology*. 20: 3845-3858. doi: 10.1111/gcb.12662.
- Glibert, P.M.**, R. Manager, D.J. Sobota, and L. Bouwman. 2014. The Haber-Bosch- Harmful algal bloom (HB-HAB) link. *Environmental Research Letters* 9: 105001 (13 pp).

¹ This paper was highlighted as one of the journal's exceptional 25 papers of 2013.

² This paper was recognized as one of the 7 most interesting papers from the first half of 2014 by NASA Giovanni (Earth Science Data and Analysis Tool) system

2015

Papers

- Li, J., **P. M. Glibert** and Y. Gao. 2015. Temporal and spatial changes in Chesapeake Bay water quality and relationships to *Prorocentrum minimum*, *Karlodinium veneficum*, and CyanoHAB events, 1991-2008. *Harmful Algae* 42: 1-14.
- Flynn, K.A., D.R. Clark, A. Mitra, H. Fabian, P.J. Hansen, **P.M. Glibert**, G.L. Wheeler, D. Stoecker, J.C. Blackford, and C. Brownlee. 2015. Ocean acidification with (de)eutrophication will alter future phytoplankton growth and succession. *Phil Trans. Roy. Soc. B.* 282: 20142604
- Glibert, P.M.** 2015. More than propagule pressure: Successful invading algae have physiological adaptations suitable to anthropogenically changing nutrient environments. *Aquatic Ecosystem Health & Management.* 18: 334-341.
- Accoroni, S., **P.M. Glibert**, S. Pichierri, T. Romagnoli, M. Marini, and C. Totti. 2015. A conceptual model of annual *Ostreopsis cf. ovata* blooms in the northern Adriatic Sea based on the synergistic effects of hydrodynamics, temperature, and the N:P ratio of the water column. *Harmful Algae.* 45:14-25.

Book chapters

- Glibert, P.M.** 2015. Ecological stoichiometry. In M. Kennish, *Encyclopedia of Estuaries.* Springer.
- Glibert, P.M.** 2015. Algal blooms. In M. Kennish, *Encyclopedia of Estuaries.* Springer.

2016

Papers

- Mitra, A., K. Flynn, U. Tillman, J. Raven, D. Caron, D. Stoecker, F. Not, P.J. Hansen, G. Hallegraeff, R. Sanders, S. Wilken, G. McManus, M. Johnson, P. Pitta, S. Vage, T. Berge, A. Calbet, F. Thingstad, H. J. Jeong, J. Burkholder, **P. M. Glibert**, E. Granéli and V. Lundgren. 2016. Redefining planktonic protist functional groups based on energy acquisition: incorporating diverse mixotrophic strategies *Protist* 167: 106-120.
- Glibert, P.M.**, F.P. Wilkerson, R.C. Dugdale, J.A. Raven, C. Dupont, P.R. Leavitt, A.E. Parker, J.M. Burkholder and T.M. Kana. 2016. Pluses and minuses of ammonium and nitrate uptake and assimilation by phytoplankton and implications for productivity and community composition, with emphasis on nitrogen-enriched conditions. *Limnol. Oceanogr.* 61: 165-197.³
- Lundgren, V., **P.M. Glibert**, E. Granéli, N.K. Vidyarthna, E. Fiori, L. Ou, K.J. Flynn, A. Mitra, D.K. Stoecker, and P.J. Hansen. 2016. Metabolic and physiological changes in *Prymnesium parvum* when grown under, and grazing on, prey of variable nitrogen:phosphorus stoichiometry. *Harmful Algae.* 55: 1-12
- Glibert, P.M.** 2016. Margalef revisited: A new phytoplankton mandala incorporating twelve dimensions including nutritional physiology. *Harmful Algae.* 55: 25-30.

Book chapters

- Glibert, P.M.** and T.M. Kana. 2016. Preface to *Aquatic Microbial Ecology and Biogeochemistry: A Dual Perspective*, pp. v-viii. In: P.M. Glibert and T.M. Kana (eds.), *Aquatic Microbial Ecology and Biogeochemistry: A Dual Perspective*, Springer International Publishing, Switzerland.

³ This paper is one of the most downloaded papers for 2016.

Kana, T.M. and **P.M. Glibert**. 2016. On saturating response curves from the dual perspectives of photosynthesis and nitrogen acquisition, pp. 93-104. In: P.M. Glibert and T.M. Kana (eds.), *Aquatic Microbial Ecology and Biogeochemistry: A Dual Perspective*, Springer International Publishing, Switzerland.

C. Books edited

Glibert, P.M. and T.M. Kana. 2016. *Aquatic Microbial Ecology and Biogeochemistry: A Dual Perspective*. Springer.

Glibert, P.M., E. Berdalet, M. Burford, G. Pitcher and M. Zhou (eds.), *Global Ecology and Oceanography of Harmful Algal Blooms (GEOHAB)*. Springer. Expected submission early 2017.

D. Invited seminars (2014-2016)

Glibert, P.M. 2014. Ecological stoichiometry, biogeochemistry and aquatic food webs. Université de Montpellier. January 2014. **Invited seminar.**

Glibert, P.M. 2014. Ecological stoichiometry, biogeochemistry and aquatic food webs. Institute of Marine and Environmental Technology (IMET). February 2014. **Invited seminar.**

Glibert, P.M. 2014. Ecosystem consequences of changing nutrient loads- the view beyond eutrophication. Zhejiang University, Hangzhou, China, April 2014. **Invited seminar.**

Glibert, P.M. 2014. Temperate region expansion of harmful algal blooms (HABs) projected with increased nutrient pollution, aquaculture expansion and climate change. The Second Institute of Oceanography, Hangzhou, China. April 2014. **Invited seminar.**

Glibert, P.M. 2014. Brown tides in the coastal lagoons of the US mid-Atlantic coast: Why the retreat? Invited seminar. Institute of Oceanology, Chinese Academy of Sciences, Qingdao. September 2014. **Invited seminar.**

Glibert, P.M. 2014.. Effects of changing nutrient regimes and climate on HABs: a global modeling perspective. Institute of Oceanology, Chinese Academy of Sciences, Qingdao September 2014. **Invited seminar.**

Glibert, P.M. 2014. Effects of changing nutrient regimes and climate on HABs: a global modeling perspective. Ocean University of Qingdao, China. September 2014. **Invited seminar.**

Glibert, P.M. 2014. Changing nutrient loads and phytoplankton communities- from a global to a cellular perspective. Zhejiang University, Hangzhou, China, November 2014 **Invited seminar.**

Glibert, P.M. 2014. Changing nutrient loads and phytoplankton communities- from a global to a cellular perspective. The Second Institute of Oceanography, Hangzhou, China. November 2014. **Invited seminar.**

Glibert, P.M. 2014. Changing nutrient loads and phytoplankton communities- from a global to a cellular perspective. University of Nanjing, China. November 2014. **Invited seminar.**

Glibert, P.M. 2014. Changing nutrient loads and phytoplankton communities- from a global to a cellular perspective. University of Texas, Galveston. November 2014. **Invited seminar.**

Glibert, P.M. 2015. Changing nutrient loads and phytoplankton communities- from a global to a cellular perspective. Horn Point Laboratory. February 2015. **Invited seminar.**

Glibert, P.M. 2015. Importance of nutrient loads, ratios and forms in plankton dynamics. Second Institute of Oceanography, Hangzhou, China, March 2015. **Invited seminar.**

Glibert, P.M. 2015. Changing nutrient loads and phytoplankton communities- from a global to a cellular perspective. University of Technology, Sydney, Australia. June 2015. **Invited seminar.**

- Glibert, P.M. 2015. Changing nutrient loads and phytoplankton communities- from a global to a cellular perspective. Griffith University, Brisbane, Australia. June 2015. **Invited seminar.**
- Glibert, P.M. 2016. Changing nutrients and freshwater flow: How are they affecting phytoplankton abundance and community composition in estuaries? Institute of Oceanology, Chinese Academy of Sciences, Qingdao, China, April 2016. **Invited seminar.**
- Glibert, P.M. 2016. Changing nutrients and freshwater flow: How are they affecting phytoplankton abundance and community composition in estuaries? Ocean University.of Qingdao, China. April 2016. **Invited seminar.**
- Glibert, P.M. 2016. Changing nutrients and freshwater flow: How are they affecting phytoplankton abundance and community composition in estuaries? **Yantai** Institute of Coastal Zone Research, Chinese Academy of Sciences, Yantai, China, April 2016. **Invited seminar.**
- Glibert, P.M. 2016. Why nutrient loads and ratios matter: Global and regional changes and consequences for phytoplankton community composition. Nanjing Institute of Geography and Limnology, Chinese Academy of Sciences, Nanjing, China, November 2016. **Invited seminar.**
- Glibert, P.M. 2016 Why nutrient loads and ratios matter: Global and regional changes and consequences for phytoplankton community composition. East China Normal University, Shanghai, China, November 2016. **Invited seminar.**

E. Membership in Professional Societies

American Association for the Advancement of Science
 American Society for Limnology and Oceanography
 American Geophysical Union
 The Oceanography Society
 Estuarine Research Federation
 International Society for the Study of Harmful Algae

V. Teaching and Training

1986- present Member, UMCES Graduate Faculty
 1986- present Member, USM Graduate Faculty

A. Courses Taught at UMCES since 2012

Course No	Title	Institution	Semester	Enrollment	Credit Hrs.	Co-Instructor(s)	No. lectures
MEES 698	Ecological Stoichiometry	UMCP	Spring 2012	6	1	Sole instructor	12
MEES 698P	Phytoplankton Ecological Physiology	UMCP	Winter 2013	12	3	T. Kana D. Stoecker	10
MEES 698P	Phytoplankton Ecological Physiology	UMCP	Winter 2015	7	3	T. Kana	10

B. Courses taught at Zhejiang University:

Marine Ecology (fall 2014, spring 2015, fall 2015, spring 2016)

VI. Outreach and Service

A. Editorships and Journal Reviewing

Member of Editorial Board, *Harmful Algae*, 2001-present
Member of the Editorial Board, *Limnology and Oceanography Letters* 2015-present
Subject Editor, *Aquatic Microbial Ecology*, 1995-2001, 2007-2013
Member of Editorial board of *Estuaries and Coasts*, 2004- 2013

Guest Editor, special issue of *Harmful Algae* on *Prorocentrum minimum*, 2005
Guest Editor, special ½ issue of *Oceanography* on *HABs*, 2005
Guest Editor, special issue of *Harmful Algae* on the *Ecology of Pfiesteria*, 2006
Guest Editor, special issue of *Harmful Algae* on *HABs and Eutrophication*, 2008
Guest Editor, special issue of *Harmful Algae* on *Strain Differences in Harmful Algae*, 2009
Guest Editor, special issue of *Contributions in Marine Science* on *Florida Bay*, 2009
Guest Editor, special issue of *Chinese Journal of Oceanology and Limnology* on Eutrophication, 2011

Reviewer of at least 4 additional papers/month for other journals including *Limnology and Oceanography*, *Marine Ecology Progress Series*, *Aquatic Microbial Ecology*, *Toxicon*, *J. Experimental Marine Biology and Ecology*, *Science of the total Environment*, *Continental Shelf Research*, *J. Marine Systems*, *Marine Pollution Bulletin*, *J. Plankton Research*, etc.

Reviewer of proposals for NSF, NOAA, European Union, Sea Grant.
NSF Panel reviewer, 2012, 2013, 2014

B. Meetings and symposia organized since 2011

Steering Committee member, 15th International HAB Conference, Korea, 2012
Steering Committee Member, US National HAB Symposium, 2017

C. Federal, State, Local Government

Co-Chair, US National HAB Committee, 2006-2012
Member, Maryland Harmful Algal Technical Advisory Committee, 1999- present
Member, Scientific and Technical Advisory Committee, Coastal Bays, 2006-present
Consultant on nutrient issues, California State Water Contractors and Bay Delta Conservation Plan, 2009-2015

D. International

GEOHAB Scientific Steering Committee and/or chair of the core research project on Eutrophication, 1999-present
Co-chair, SCOR/LOICZ Working Group 132, Land based nutrient pollution and HABs, 2008-2013
Consultant to the Ministry of Oman on harmful algal blooms, 2010, 2015
Member, GEOHAB Working Group on HABs and Ocean Colour, 2010-present
Member, working group on developing models for mixotrophy, Leverhulme Foundation, 2011-present

E. Service to the Laboratory

Member of the Education Committee 2012-2014
Member of the Curriculum Committee, 2012-2013
Member and chair of promotion review committee 2012, 2016

Member Analytical Services Committee, 2012-present
Member of the Library Committee, 2016-present
Member, search committees (2), 2017

F. Other

Member and Secretary, Estuarine Research Federation Governing Board, 2007-2009;
Representative CERF Policy Committee 2012-2015
Representative, Council of Aquatic Science Societies (CASS), 2011-2014