**CURRICULUM VITAE**

Lee Karp-Boss

Associate Professor

School of Marine Sciences

University of Maine

Email:lee.karp-boss@maine.edu

**Professional Experience**

Associate Professor, University of Maine 2013 - present

Research Associate Professor, University of Maine 2010 - 2013

Research Assistant Professor, University of Maine 2002 - 2010

Post-Doctoral Associate, Oregon state university 2000 - 2002

Post-Doctoral Associate, University of Washington 1998- 1999

**Education**

Hebrew University, Jerusalem, Israel. Biology B.Sc. 1989.

Hebrew University, Jerusalem, Israel Ecology & M.Sc. 1991

Oceanography

University of Washington Oceanography Ph.D. 1998

**Research interests:** plankton ecology: biophysical interactions, community composition and structure, functional traits of plankton.

**Publications**

# Boss E., N. Haentjens, T. K. Westberry, L. Karp-Boss and W. Slade. 2018. Validation of the particle size distribution obtained with the laser in-situ scattering and transmission(LISST) meter in flow-through mode. Optics Express, 26(9):11125-11136.

# Niazi Ardekani, M., [G. Sardina](https://arxiv.org/find/physics/1/au%3A%2BSardina_G/0/1/0/all/0/1), [L. Brandt](https://arxiv.org/find/physics/1/au%3A%2BBrandt_L/0/1/0/all/0/1), L. Karp-Boss, R. N. Bearon, E. A. Variano. 2017. Sedimentation of elongated non-motile prolate spheroids in homogenous isotropic turbulence. Journal of Fluid Mechanics, in press.

Matsoka, A. E. Boss, M. Babin, **L. Karp-Boss**, M. Hefetz, A. Chekalyuk, C. W. Proctoe, P. J. Werdell and A. Bricaud. 2017. Pan-Arctic optical characteristics of colored dissolved organic matter: tracing dissolved organic carbon in changing Arctic waters using satellite ocean color data. Remote Sensing of Environment. 200,89-101.

**Karp-Boss, L**. and E. Boss. 2016. The round, the elongated and the stout: selective pressure for phytoplankton shape. In: ***Aquatic Microbial Ecology and Biogeochemistry: A Dual Perspective***, Gilbert and Kana (eds.). Springer, p. 25-34.

 Cornejo D’Ottone, M., L. Bravo, M. Ramos, O. Pizarro, J. Karstensen, M. Correa-Ramirez, N. Silva, L. Farias and **L. Karp-Boss**. 2016. Biogeochemical characteristics of a Long- lived anticyclonic eddy in the eastern South Pacific Ocean. ***Biogeosciences***, 13, 2971-2979, doi:10.5194/bg-13-2971-2016. [Journal impact factor 3.7]

[Guidi](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-1) L., [S. Chaffron](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-2), [L. Bittner](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-3), [D. Eveillard](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-4), [A. Larhlimi](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-5), [S. Roux](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-6), [Y. Darzi](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-7), [S. Audic](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-8), [L. Berline](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-9), [J. R. Brum](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-10), [L. P. Coelho](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-11), [J. C. Ignacio Espinoza](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-12), [S. Malviya](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-13), [S. Sunagawa](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-14), [C. Dimier](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-15), [S. Kandels-Lewis](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-16), [M. Picheral](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-17), [J. Poulain](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-18), [S. Searson](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-19), [Tara Oceans Consortium Coordinators](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-20), [L. Stemmann](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-21), [F. Not](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-22), [P. Hingamp](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-23), [S. Speich](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-24), [M. Follows](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-25), [**L. Karp-Boss**](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-26), [E. Boss](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-27), [H. Ogata](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-28), [S. Pesant](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-29), [J. Weissenbach](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-30), [P. Wincker](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-31), [S. G. Acinas](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-32), [P. Bork](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-33), [C. de Vargas](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-34), [D. Iudicone](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-35), [M. B. Sullivan](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-36), [J. Raes](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-37), [E. Karsenti](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-38), [C. Bowler](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-39) and [G. Gorsky](http://www.nature.com/nature/journal/vaop/ncurrent/fig_tab/nature16942_F1.html#auth-40). 2016. Plankton networks driving carbon export in the oligotrophic ocean. ***Nature*** 532: 465-470. doi:10.1038/nature16942 [Journal impact factor 38.14]

★S. Sunagawa *et al*. 2015. Structure and function of the global ocean microbiome. ***Science*** 348 (6237). [Journal impact factor for *Science* 34.66]

★E. Villar *et al*. 2015. Environmental characteristics of Agulhas rings affect interocean plankton transport. **Science** 348 (6237). [Journal impact factor for *Science* 34.66]

★J. R. Brum *et al*. 2015. Patterns and ecological drivers of ocean viral communities. ***Science*** 348 (6237). [Journal impact factor for *Science* 34.66]

★C. de Vargas *et al*. 2015. Eukaryotic plankton diversity in the sunlit ocean. ***Science*** 348 (6237). [Journal impact factor for *Science* 34.66]

★G. Lima-Mendez *et al*. 2015. Determinants of community structure in the global plankton interactome. ***Science*** 348 (6237).

 [Journal impact factor for *Science* 34.66]

*★*Tara Oceans Consortium publications on which I am listed as a co-author under program coordinator (the full list of coauthors is too long to provide).

**Karp-Boss L**., R. Guetta and I. Rousso. 2014. Judging diatoms by their cover: variability in local elasticity of *Lithodesmium undulatum* undergoing cell division. ***PLoS ONE***. DOI: 10.1371/journal.pone.0109089 [Journal impact factor 3.23]

Lyczkowski, E. R. and **L.** **Karp-Boss**. 2014. Allelopathic effects of *Alexandrium fundyense* (Dinophyceae) on *Thalassiosira cf. gravida*: a matter of size. ***J. Phycol***. 50:376- 387. [Journal impact factor 2.54]

Gettings, R.M., D.W. Townsend, M.A. Thomas, **L. Karp-Boss**. 2014. Dynamics of late spring and summer phytoplankton communities on Georges Bank, with emphasis on diatoms, *Alexandrium* spp., and other dinoflagellates. ***Deep Sea Research II***. 103: 120-138. [Journal impact factor 2.14]

Young A. M., **L. Karp-Boss**, P.A. Jumars and E.A. Landis. 2012. Quantifying diatom aspirations: mechanical properties of chain-forming species. ***Limnology and Oceanography****,* 57(6): 1789-1801. [ Journal impact factor 4.22]

★Karsenti, E., S. G. Acinas, P. Bork, C. Bowler, C. De Vargas et al. and the TARA Consortium.  2011 A Holistic Approach to Marine Ecosystems Biology.  ***PLoS Biol*** 9(10):  e1001177. Doi:  10.1371/journal.pbio.1001177 [Journal impact factor 9.34]

Nguyen H. V., L. Karp-Boss, P. A. Jumars, and L. Fauci, 2011. Hydrodynamic effects of spines: a different spin. *Limnology and Oceanography: Fluids and Environments* 1:110-119.

Whitmire A. L., W.S. Pegau,L. Karp-Boss, E. Boss,and T. J. Cowles. 2010. Spectral backscattering properties of marine phytoplankton cultures. *Optics Express,* 18( 14): 15073-15093.

Townsend D. W., N. D. Rebuck, M. A. Thomas, **L. Karp-Boss** and R. M. Gettings. 2010. A changing nutrient regime in the Gulf of Maine. *Continental Shelf Research* 30: 820-832*.*

**Karp-Boss L**, E. Boss, H. Weller, J. Loftin and J. Albright. 2009. Teaching physical concepts in oceanography. *Oceanography* 22(3) supplement: 1-52 (also available online <http://www.tos.org/hands-on/teaching_phys.html>; translated to French, Spanish and Catalan).

### Musielak M. M., L. Karp-Boss, P. A. Jumars and L. J. Fauci. 2009. Nutrient transport and acquisition by diatoms in a moving fluid. *Journal of Fluid Mechanics* 638:401-421.

### Jumars, P.A., E. Boss, J.H. Trowbridge and L. Karp-Boss. 2009. Turbulence-plankton interactions: A new cartoon. *Marine Ecology: an Evolutionary Perspective* 30:133-150.

**Karp-Boss, L.**, L. Azevedo and E. Boss, 2007. Measurements of phytoplankton size distribution: applications and limitations of the LISST-100X. *Limnology and Oceanography, Methods 5: 396-406.*

### Clavano, W. R., E. Boss and L. Karp-Boss. 2007. Inherent optical properties of non-spherical marine-like particles – from theory to observation. *Oceanography and Marine Biology an Annual Review*, 45:1-38.

Koester, J. A., Brawley S. H., **Karp-Boss L**. and Mann D. G. 2007. Sexual reproduction in the marine centric diatom *Ditylum brightwellii* (Bacillariophyta). *European Journal of Phycology*, *42(4):351-366.*

**Karp-Boss L.**, E. Boss and J. Loftin. 2007. Diffusion at work: an interactive simulation. *Oceanography*, 20(3):127-131

Hales B., **L. Karp-Boss**, A. Perlin and P. A. Wheeler. 2006. Oxygen production and carbon sequestration in an upwelling coastal margin setting. *Global Biogeochemical Cycles* 20, *GB3001, doi10.1029/2005GB002517*

Boss, E., **L. Karp-Boss**, and P.A. Jumars, 2006. Settling of particles in aquatic environments. *Oceanography*, Vol. 19, No. 2, pp. 151-154.

**Karp-Boss L.**, P. A. Wheeler, B. Hales and P. Covert. 2004. Distributions and variability of POM in a coastal upwelling system. *Journal of Geophysical Research,* 109 (C9): 9010-9022*.*

Koehl M. A. R., P. A. Jumars and **L. Karp-Boss**. 2003. Algal biophysics. In: *Out of the Past*, T.A. Norton (ed), *The British Phycological Society*, p. 115-130.

**Karp-Boss L.**, E. Boss and P. A. Jumars. 2000. Motion of dinoflagellates in a simple shear flow. *Limnology and Oceanography*, 45(7): 1594-1602.

**Karp-Boss L**. and P.A. Jumars, 1998. Motion of diatom chains in a steady shear flow. *Limnology and Oceanography*, 43:1767-1773.

**Karp-Boss L**., E. Boss and P.A. Jumars, 1996. Nutrient fluxes to planktonic osmotrophs in the presence of fluid motion. *Oceanography and Marine Biology, an Annual Review*, 34:71-107.

P.A. Jumars, J. W. Deming, P.H. Hill, **L. Karp-Boss**, P. L. Yager and W. B. Dade, 1993. Physical constraints on marine osmotrophy in an optimal foraging context. *Marine Microbial Food Webs*, 7(2):121-159.

Genin, L. **Karp** and A. Miroz, 1994. Effects of flow on competitive superiority in Scleractenian corals. *Limnology and Oceanography*, 39(4):913-924.

Sagi A., L. **Karp**, Y. Milner, D. Cohen. A. M. Kuris and E. S. Chang, 1991. Testicular thymidine incorporation in the prawn Macrobracium rosenbergii: molt cycle variation and ecdysteroid effects in vitro. *Journal of Experimental Zoology*, 259:229- 237

**Presentations**

Chase, A. E. Boss, **L. Karp-Boss**, N. Haentjens, M. Behrenfeld and J. Graff. Spectral absorption based estimates of phytoplankton community composition in the North Atlantic Ocean. Ocean Optics XXIV meeting. Dubrovnik Croetia 2018.

Haentjens, N. E. Boss, **L. Karp-Boss**, A. Chase, J. Graff and M. Behrenfeld. Contributions of phytoplankton to the inherent optical properties of case I waters. Ocean Optics XXIV meeting. Dubrovnik Croetia 2018.

**Karp-Boss, L.,** C. Bowlerand the Tara Oceans Consortium. A pan Arctic view on plankton diversity and community structure: from genes to ecosystem. Polar 2018 meeting. Davos, Switzerland. 2018.

**Karp-Boss-L**., Selective pressures on phytoplankton shape. 3rd International Workshop on Trait-Based Approaches to Ocean Life. 2017, Norway.

Ayres, S**, L. Karp-Boss** and P.A. Jumars. Measurements of cell density of the diatoms Coscinodiscus radiates and Coscinodiscus Weilesii in relationship to cell size and growth. ASLO 2017. Hawaii.

**Karp-Boss.**  Interactions of diatoms with turbulent flows. University of Nice, Fluid mechanics colloquium “"Rencontres Niçoises de Mécanique des Fluides", Nice, France March 2016. (**Invited)**

**Karp-Boss**, L. Diatoms sinking in turbulent flows. Workshop on microorganisms in turbulent flows, Leiden, Holland. February 2016. (**Invited**)

**Karp-Boss, L.** C. de Vargas, L. Stemann, J. B. Romagnan, P-L. Grondin, *et al*., The Tara Oceans polar circle expedition:macroecology of planktonic communities on Arctic shelves. Ocean Sciences meeting, New Orleans, February 2016.

Variano, E.A., L. Brandt, G. Sardina, M. Ardekani, N. Pujara, S. Ayers, K. Du Clos, **L. Karp-Boss** and P. Jumars. 3D tracking of diatom motion in turbulent flows. Ocean Sciences meeting, New Orleans, February 2016.

Grondin, P-L, J. Ferland, **L. Karp-Boss** and Marcel Babin. High frequency observations of spring bloom phytoplankton dynamics in Baffin Bay using imaging flow cytometry. Ocean Sciences meeting, New Orleans, February 2016.

**Karp-Boss, L**. Integrating research with education and outreach. November 2015. Laboratire d’océanographie de Villefranche, culture ocean seminar series: broadening your impact (**Invited**)

**Karp-Boss, L.** Teaching science by ocean inquiry. SCoNY (Science Council of New York City) teacher conference, March 2015. (**Invited**)

Chase A., **L. Karp-Boss**, E. Boss, A. Chekalyuk and T. Leeuw. 2014. Optical proxies for phytoplankton size in the Arctic. Ocean Optics Meeting XXII. Portland, Maine. [Extended abstract]

E. Boss, C. Proctor, P. J. Werdell, A. Chase, T. Leeuw, **L., Karp-Boss**, A. Matsuoka, M. Babin, A. Bricaud, M. Picheral, C. Marek, and G. Becu. 2014. Remote sensing of IOPs in the Arctic Ocean using the GIOP framework. Ocean Optics Meeting XXII. Portland, Maine.

**Karp-Boss, L**. L. Stemmann, L. Guidi, M. Picheral and G. Gorsky. 2014. Coupling of biomass and size spectra in the plankton; preliminary results from a global expedition. Ocean Sciences Meeting, Honolulu, HI.

**Karp-Boss L**., M. R. Thomas, E. R. Lyczkowski and D. W. Townsend. 2013. Bloom dynamics of *Alexandrium* in the Gulf of Maine: insights from laboratory experiments on nitrate utilization and allelopathic interactions. ASLO meeting, New Orleans.

**Karp-Boss L**. 2013. Microscale interactions of planktonic organisms with ambient flows. Microscale interactions symposium. Les Houches, France (**Invited)**

Lyczkowski, E. R. and **L. K. Boss**. Allelopathic effect of *Alexandrium* on *Thalassiosira*: does cell size matter? ASLO meeting, Japan 2012.

**Karp-Boss L**. 2012. Oceanography under sail: what can be learned from the Tara Oceans expedition? University National Oceanographic Laboratory System (UNOLS): greening the fleet workshop (**Invited**)

**Karp-Boss, L**. R. Gueta, A. Young, P.A. Jumars and I. Rousso. Judging diatoms by their cover: frustule mechanics. ASLO meeting, Puerto Rico, 2011.

**Karp-Boss, L**. A. M. Young, H. Nguyen, R. Gueta, I. Rousso, L. Fauci and P.A. Jumars. Form and function in phytoplankton: coupling mechanical properties with flow. Microenvironments Modulating Biological Interactions Symposium, Aspen Center of Physics, 2011.

Young, A.M., **L.Karp-Boss** and P.A. Jumars. Measuring the flexibility of diatom chains- ecological implications for life in a turbulent ocean. ASLO meeting, Puerto Rico, 2011.

Musielak M. M, **L. Karp-Boss**, P. Jumars and L. J. Fauci. A computational model of nutrient transport and acquisition by diatom chains in a moving fluid. ASLO, Aquatic Sciences Meeting (January 2009), Nice, France.

**Karp-Boss, L**., H. Weller, E. Boss, J. Albright and A. deCharon. Teaching physical concepts by ocean inquiry: reaching pre- and in-service teachers. Ocean Sciences meeting (February 2008), Orlando, FL.

Jumars P. A, **L. Karp-Boss**, L. Fauci, E. Boss and J. A. Trowbridge. Turbulence effects on plankton: a new cartoon. Ocean Sciences meeting (February 2008), Orlando, FL.

Townsend, D.W., **L. Karp-Boss** and M. A. Thomas. Bloom dynamics of *Alexandrium* *fundyense*: the role of competitive interactions. Ocean Sciences meeting (February 2008), Orlando, FL.

Sills, N., **L. Karp-Boss**, H. Weller and E. Boss. Teaching Science by ocean inquiry: bringing the ocean to the classroom. Ocean Sciences meeting (February 2008), Orlando, FL.

Gopalan, B. ., Malkiel, E. ., **Karp-Boss, L.**, Sheng, J. and Katz, J. Diffusion of particles in isotropic turbulence using high speed digital holographic cinematography. Ocean Sciences meeting (February 2008), Orlando, FL.

Cetinic I., **L. Karp-Boss**, E. Boss, m. Ragan and B. Jones. Red tide optical index: in situ optics and remote sensing models. AGU, Joint Assembly Meeting. May 2007.Mexico.

deCharon A., **L. Karp-Boss**, E. Boss, S. Graham, A. Manahan and H. Weller. Investigating the Ocean-Climate System, Concept by Concept. AGU Fall meeting, December 2006.

**Karp-Boss, L.**, L. Azevedo and E. Boss. Optical measurements of phytoplankton size and volume concentration (LISST-100): applications and limitations. Ocean Optics XVIII, Montreal. October 2006.

Levandoski D., P. A. Jumars and **L. Karp-Boss**. Partnership between oceanographic researchers and high school teachers. Ocean Science meeting, February 2006. Hawaii.

**Karp-Boss L.**, E. Boss, B. Hales and P.Wheeler. The use of in-situ light transmissometers in studies of POC dynamics. Ocean Carbon and Climate Change workshop. August 2005, Woods Hole.

Hales B., J. Moum and **L. Karp-Boss**. Turbulent supply of pelagic nutrients to the coastal surface ocean and their subsequent sequestration in the deep sea. ASLO International summer meeting. June, 2005. Spain

**Karp-Boss, L**, E. Boss and P.A. Jumars. The role of cell shape in phytoplankton ecology. ASLO International summer meeting. June, 2005. Spain.

**Karp-Boss L.**, Jumars, P. A., Grant P., Wereley, S. and Klingler E. H. Motion of diatoms in steady and unsteady shear flows. ASLO Aquatic Sciences meeting, Salt Lake City. February 2005.

Koester, J.A., **Karp-Boss, L.** and Brawley, S.H. Induction of sexual reproduction and the mating system of the planktonic diatom *Ditylum brightwellii*. ASLO Aquatic Sciences meeting, Salt Lake City. February 2005.

Briggs-Whitmire, A.L., W. Scott Pegau, **L. Karp-Boss**, L. Azevedo, Backscattering Characteristics of Marine Phytoplankton Taxa, Ocean Optics XVII, Fremantle, AU, October 2004. (Extended abstract)

Hales, B., **L. Karp-Boss**, J. Moum, P. A. Wheeler, P. Covert and Bandstra L. Off-shelf export of POC from the Oregon Coast: implications for uptake of Atmospheric CO2. Ocean Sciences Meeting (AGU), Portland OR, January 2004

Jumars, P. A., **Karp Boss, L**. and Boss E. Solute flux in steady and unsteady flows around phytoplankton cells. ASLO –TOS Ocean Research Conference. Honolulu. February 2004.

**Teaching**

**Offered each year**

* SMS501: Biological oceanography (graduate)
* SMS354: The Arctic Ocean in a changing climate (undergraduate)
* SMS204: Integrative Marine Science: chemistry unit (undergraduate)

**Other classes taught:**

* SMS691: Habits of Mind and Responsible Conduct of Research (graduate)

* SMS491: Speaking of science (undergraduate/graduate)
* SMS 693: Topics in oceanography: bloom dynamics (graduate)
* SMS 697:A mechanistic approach to plankton ecology (after Thomas Kiørboe’s book; graduate).
* SMS 491/ EDW472: Teaching Sciences by Ocean Inquiry (undergraduate).
* SMS 302: Oceanography (undergraduate).

**Advising/co-advising**

 *Graduate students*

* Alison Chase (PhD candidate, current)
* Drajad Seto (MS candidate, current)
* Pierre Luc Grondin (MSc candidate, Université Lavel)
* Stephanie Ayres (MS 2017)
* Emily Lyczkowski (M.S. 2013)
* Ashley Young (M.S. 2012)
* Julie Koester (M.S., 2005)

*CEHD- Graduate students*

* Jennifer Albright- received M.Ed in 2009. I mentored her as a TA for SMS 491/EDW472 and summer workshop for science teachers.

*Undergraduate Students*

Gretchen Spencer (research assistant 2014- present), Faith Hoyle (research Assistant, 2017-present), Grace Weise (research assistant 2013-2017), Makaila Kowlski (research assistant, summer 2014), Samantha Bond (research assistant 2009-2011;Honors Thesis/Capstone (chair)- 2010-2011), Marina Vandereb (research assistant, summer 2011), Sara Hue (Capstone 2008-2009), Jenny Couture (research assistant 2006-2008; Honors Thesis/Capstone 2007-2008 (*Chair*) , Kathryn Jensen (Capstone 2006-2007), Erica Stoloff (Capstone 2006-2007), Leann Prichard (Capstone 2004-2005), Michelle Bunker (Capstone 2004-2005), Elisa Klingler (REU, Darling Center summer 2004; Capstone 2004-2005), Laura Azevedo (research assistant 2003-2005)

*Committee member*

Nils Haentjens Heera (Ph.D. candidate), Rechel Presely (Ph. D. candidate) Malik (Ph.D. 2016), Charlotte Royer (SMS, MSc 2017), Kristina Cordero (Marine Science Institute, University of the Philippines; external reader), Karen Stamieszkin (SMS Ph.D. 2016), Ruleo Camacho (SMS, MSc, 2016), Thomas Leeuw (SMS, MSc 2014), Sheri Floge (SMS, Ph.D. candidate 2014), Søren Hansen (SMS, Ph.D. 2014), Rachel Gettings (SMS, M.S. 2010), Mei Sato (SMS, M.S. 2006)

**Funding**

NASA(co-PI)” Linking remotely-detectable optical signals, photic layer plankton properties and export flux”. 08/22/17-08/21/2020

NASA (Co-PI) “North Atlantic Aerosol and Marine Ecosystem Study (NAAMES). 12/01/14 – 11/30/19, $1,430,253

NSF (PI) “collaborative research: the rise and fall of diatoms-trajectories and spatial distributions at dissipation scales of turbulence” 9/13 – 8/17, $409,036

NASA (PI) “Microscale ocean biophysics meeting” 01/01/2014- 12/31/2015 $9,828

NASA (PI) “Tara Arctic: optical properties and phytoplankton functional types in the Arctic Ocean”. 12/01/12 – 11/30/14, $149,714

NOAA (PI) “Bloom dynamics of *Alexandrium*: the roles of resource competition and allelopathy” 09/1/09-08/31/13, $593,101

NSF (Co-PI) ”GMC collaborative research: Interactions of phytoplankton with dissipative vortices” 09/21/07-08/31/12, $521,423.

Maine Department of Education (Co-PI) “Connecting climate to curriculum (C’s to shining C)” 07/01/08- 8/31/10, $70,875.

NSF (co-PI/ PI) ”Collaborative Research: Centers for Ocean science Education Excellence: oceans in the earth-sun system” 09/05/05-08/31/10, $568,981

NSF (Co-PI)“Form and function of phytoplankton in unsteady, low *Re* flows” 09/01/02-08/31/06 $405,072

NASA (PI) “Scattering characteristics of phytoplankton taxonomic groups and their affect on reflectance” 08/01/02-07/31/05 $115,409. Source: NASA

**Services**

*At the University of Maine*

* NSFA Research Council (2018-2019)
* Faculty Research Fund Committee (2017-present)
* SMS peer committee (2017-present)
* Program coordinator (School of Marine Science: Oceanography program) 2013-2015
* SMS Graduate curriculum committee (2013-2015, 2018-present)
* SMS Policy Advisory committee (2013-2015)
* SMS academic review board (2014-2015)
* SMS Graduate admission committee (2012-2013)
* CUGR showcase, organizing committee (2010-2012, 2014)

*Service to professional community*

* OCB- phytoplankton taxonomy working group (2017-present)
* The Oceanography Society: council member (2015-present).
* Ocean Sciences meeting: session co-chair (New Orleans 2016)
* Professional developments workshop for early career scientists (June 2015; NSF funded)
* Conference co-organizer (January 2015): Microscale biophysical interactions (Aspen, CO 2015)
* NSF: Review panel (2010, 2013)
* Reviewer: *NSF, NASA, NOAA, Limnology and Oceanography, Limnology and Oceanography-Methods, Journal of Phycology, Marine Ecology Progress Series, Journal of Plankton Ecology, Journal of Geophysical Research, Biogeosciences, Harmful Algae, Journal of Marine System, Oceanography, Proceedings of the National Academy of Science and otherss*

**Other professional activities**

* Chief Scientist: Tara Oceans (2010, 2012, 2013)
* Program coordinator: Tara Oceans

**A sample of outreach activities***:*

* Speaker at the EPA Tribal Leaders conference (Moose River, Maine, Oct 2018)
* Speaker and panelist in a public session on the future of planktonic ecosystems in the Arctic Ocean, as part of the “Because of the Ocean” event during the COP21 summit (Paris, December 2015).
* Public presentation: Gulf of Maine Research Institute, public lecture series. Portland, Maine. May 2015; The Tara Oceans expedition- exploring the oceans’ invisible life.
* Public presentation: New York microscopical society, March 2015; Small is big: understanding the invisible world of phytoplankton (how the different branches of microscopy and new advances in high throughput imagery are applied to reveal the secretes of plankton)
* Aspen Science Center: physics café, January 2015; an open public discussion on oceans and climate (http://aspensciencecenter.org/programs/physics-cafes/)
* Science Council of New York City, teacher conference (March 2015): Invited keynote speaker (teaching science by ocean inquiry) and workshop organizer.
* Guided school visits (and other members of the Public) on board the research vessel TARA (2010, 2012, 2013).
* Represented Tara expeditions and the Tara Oceans consortium during a visit of Ban Ki-moon (Secretary General of the United Nations) onboard the research vessel ‘Tara’ (<http://bangordailynews.com/2012/02/19/news/bangor/umaine-researchers-help-lead-81000-nautical-mile-scientific-ocean-expedition/>)
* Professional development program for middle and high-school teachers (2010 - 2013): ‘Connecting Climate to Curriculum’. Collaboration between the Challenger Learning Center of Maine, University of Maine and local schools. The goal of the program was to work with middle school and high school teachers on developing curricula that incorporate climate change. This 3 year program included bi-monthly meetings + a summer workshop.
* Professional development program for middle and high-school teachers (2006 - 2008): ‘Teaching Physics by Ocean Inquiry’. I led the design and delivery of 4 weeklong, summer workshops for middle school and high-school teachers (in collaboration with E. Boss and H. Weller). A total of 56 teachers from public schools in *16 different states* (ME, NH, MA, NY, VA, NC, SC, GA, FL, TN, KY, OH, ID, MO, AZ, NM) participated in these workshops.
* Professional development program for high-school teachers (2004 - 2005): ‘Low Reynolds number phenomena’. Two summer workshops, 3 weeks each, where teachers reside at the Darling Marine Center and participated in our research activities (Collaborationwith P. Jumars*).*

**Professional Memberships**

Association for the Sciences of Limnology and oceanography (ASLO)

The oceanography Society (TOS)

Phycological Society of America (PSA)