YAJUAN LIN

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RESEARCH INTERESTS

Biological Oceanography, Environmental Microbiology, Biogeochemistry, Climate Change

A. PROFESSIONAL PREPARATION

Institution	Division	Degree	Year
Duke University	Marine Science and Conservation	Ph.D.	2013
Peking University	Geology/ Life Sciences	B.S.	2006

B. APPOINTMENTS

2022.8 – present	Assistant Professor, Marine Ecology, Texas A&M University – Corpus Christi
2020 – 2022.7	Assistant Professor, Environmental Sciences, Duke Kunshan University (DKU), China
2018 – 2020	Research Scientist, Earth and Ocean Sciences, Duke University
2016 – 2018	Postdoc, European Institute for Marine Studies (IUEM), Université de Bretagne Occidentale, France
2013 – 2015	Postdoc, Earth and Ocean Sciences, Duke University
2010 – 2013	Research Assistant/Teaching Assistant, Duke Marine Lab, Duke University
2007 – 2009	Research Assistant, Biological Oceanography, University of Hawaii at Manoa
2006 – 2007	Undergraduate Research Assistant, School of Life Sciences, Peking University, China

C. PUBLICATIONS

Lombard, F., *et al*. Open science resources from the Tara Pacific expedition across coral reef and surface ocean ecosystems. *Under review.*

Gu, S., **Lin, Y.**, Berthelot, H., Tang, W., Robidart, J., Eren., A. M., Ducklow, H., and Cassar, N. Sedimentary diazotroph contribution to measurable N_2 fixation in Antarctic waters. *Under review.*

Lin, Y., Moreno, C., Marchetti., A, Ducklow, H., Schofield, O., Delage., E., Meredith, M., Li, Z, Eveillard, D., Shaffron, S., and Cassar, N. (2021) Decline in plankton diversity and carbon flux with reduced sea ice extent along the Western Antarctic Peninsula. *Nature Communications,* 12 (1), 1-9.

Landwehr, S., *et al*. (2021). Biogeochemistry and physics of the Southern Ocean-atmosphere system explored with data science. *Earth System Dynamics*, 12 (4), 1295-1369.

Brown, M., Bowman, J., **Lin, Y**., Feehan, C., Cassar, N., Moreno, C., Marchetti, A., and Schofield, O. (2021) Low diversity of a key phytoplankton group along the West Antarctic Peninsula. *Limnology and Oceanography,* 66, 2470-2480.

Gorsky, G., *et al*. (2019). Expanding *Tara* Oceans protocols for underway, ecosystematic sampling of the ocean-atmosphere interface during *Tara* Pacific expeditions. *Frontiers in Marine Science. DOI: 10.3389/fmars.2019.00750*

Lin, Y., Gifford, S., Ducklow, H., Schofield, O., and Cassar, N. (2019). Towards quantitative microbiome community profiling using internal standards. *Applied and Environmental Microbiology*, 85.5: e02634-18.

Wang, S., **Lin, Y.**, Gifford, S., Eveleth, R., & Cassar, N. (2018). Linking patterns of net community production and marine microbial community structure in the western North Atlantic. *ISME J.*, 1.

Lin, Y., Cassar, N., Marchetti, C., Moreno, A., Ducklow, H., and Li, Z. (2017). Specific eukaryotic plankton are good predictors of net community production in the Western Antarctic Peninsula. *Scientific Reports,* 7, 14845.

Moreno, C. M., **Lin, Y.**, Davies, S., Monbureau, E., Cassar, N., & Marchetti, A. (2017). Examination of gene repertoires and physiological responses to iron and light limitation in Southern Ocean diatoms. *Polar Biology*, 1-18.

Eveleth, R., Cassar, N., Sherrell, R.M., Ducklow, H., Meredith, M.P., Venables, H.J., **Lin, Y.**, Li, Z. (2016). Ice melt influence on summertime net community production along the Western Antarctic Peninsula. *Deep Sea Research Part II: Topical Studies in Oceanography*, 139, 77-88.

Larkin, A., Blinebry, S., Howes, C., **Lin, Y.**, Loftus, S., Schmaus, C., Zinser, E., and Johnson, Z. (2016). Niche partitioning and biogeography of high light adapted *Prochlorococcus* across taxonomic ranks in the North Pacific. *ISME J.*, 10(7), 1555-1567.

Chandler, J., **Lin, Y.**, Gainer, P., Post, A., Johnson, Z., and Erik, Z. (2016). Variable but persistent coexistence of *Prochlorococcus* ecotypes along temperature gradients in the ocean's surface mixed layer. *Environmental Microbiology Reports, 8(2),* 272-284.

Ribalet, F., Swalwell, J., Clayton, S., Jiménez, V., Sudek, S., **Lin, Y.**, Johnson, Z., Worden, A., and Armbrust, E. V. (2015). Light-driven synchrony of *Prochlorococcus* growth and mortality in the subtropical Pacific gyre. *PNAS*, 112(26), 8008-8012.

Jiao, N., Luo, T., Zhang, R., Yan, W., **Lin, Y.**, Johnson, Z. I., Tian, J., Yuan, D., Yang, Q., Sun, J., Hu, D., and Wang, P. (2014). Presence of *Prochlorococcus* in the aphotic waters of the western Pacific Ocean. *Biogeosciences,* 11, 2391-2400.

Lin Y., Gazsi K., Lance V. P., Larkin A., Chandler, J., Zinser E. R., and Johnson Z. I. (2013). *In situ* activity of a dominant *Prochlorococcus* ecotype (eHL-II) from rRNA content and cell size. *Environmental Microbiology.* 15(10), 2736-2747.

Hunt, D. E.*, **Lin, Y.***, Church, M. J., Karl, D. M., Tringe, S. G., Izzo, L. K., & Johnson, Z. I. (2013). Relationship between Abundance and Specific Activity of Bacterioplankton in Open Ocean Surface Waters. *Applied and Environmental Microbiology*, *79*(1), 177-184. * co-first authors

Bittar, T. B., **Lin, Y.**, Sassano, L. R., Wheeler, B. J., Brown, S. L., Cochlan, W. P., and Johnson, Z. I. (2013). Carbon Allocation under Light and Nitrogen Resource Gradients in Two Model Marine Phytoplankton. *Journal of Phycology. 49*(3), 523-535.

Johnson, Z. I., and **Lin, Y.** (2009). *Prochlorococcus*: Approved for export. *PNAS, 106(26)*, 10400-10401.

Wang, D., and **Lin, Y.** (2007). A new species of Metacladophyton from the Late Devonian of China. *International Journal of Plant Sciences, 168(7)*, 1067-1084.

D. SYNERGISTIC ACTIVITIES

- *Teaching and mentoring:*

  Teaching: BIOL 212 Microbiology (Duke Kunshan University, lecture & lab, undergraduate level), BIOL/ENV 311 Biogeochemistry (DKU, undergraduate level), ENV 307 Water Pollution (DKU, undergraduate level)

  Guest lecturer: EOS385 Aquatic Pollution (Duke, graduate level), EOS 365 Changing Oceans (Duke, graduate level).

  PhD committee: Alex Niebergall (Duke), Shuai Gu (Duke).

  Undergraduate signature work advisor: Wendy Wen (DKU), Merlin Miao (DKU), Chutong Fang (DKU), Lihan Huang (DKU), Yunyi Ru (DKU), Yiyang Weng (DKU).

  Mentor for NSF Research Experiences for Undergraduates: Elise Keister and Lisa Izzo.

- *Investigator:*
  Antarctic Circumnavigation Expedition (2016 - 2018), $67,464. Co-PI (Lead PI: Nicolas Cassar). Project "The Biogeochemical Compass: Navigating the Flows of Energy and Matter within the Southern Ocean". Joint funding between EPFL (Switzerland) and the partnering Swiss Polar Institute.

- *Reviewer:*

  Academic Journals: *The ISME Journal, Microbiome, Limnology and Oceanography, Frontiers Microbiology, Aquatic Microbial Ecology, Scientific Reports, Journal of Geophysical Research, Deep Sea Research Part II, etc*.

  Grants: US National Science Foundation (OPP's Antarctic Sciences Section), the North Pacific Research Board (NPRB).

- *Outreach and scientific communications:*

  TARA Pacific Expedition "meet a scientist on board" to allow students and teachers to explore the scientific instruments used aboard the schooner TARA, in Lorient, France (2016) and Boston, USA (2018).

  Durham Museum of Life and Science Ocean's Lab events for kids (2015).

  Mentoring Hispanic female high school students Patricia Quinones and Shekinah Eugenio for Science Fair 2009.

- *Research cruises:*

  Antarctic Circumnavigation Expedition, R/V Akademik Treshnikov, Nov 2016 – Mar 2017

  TARA Pacific Expeditions, the schooner TARA, May 2016

  Antarctica Palmer Long Term Ecological Program, R/V Laurence M. Gould, Jan-Feb 2014

  N_2 fixation method testing in the Sargasso Sea, R/V Atlantic Explorer, Aug 2017 and Aug 2015

  POWOW2 in North Pacific Ocean, R/V Kilo Moana, Jan-Feb 2013

CH0510 Sargasso Sea, R/V Cape Hatteras, May 2010

Hawaii Ocean Time-series (HOT) 215 cruise, R/V Kilo Moana, Sep 2009

DCMII in Eastern Pacific Ocean, R/V New Horizon, Jun-Jul 2008 and Jul-Aug 2007

E. SELECTED PRESENTATIONS

Ocean Sciences Meeting, online, USA. March 2022. Decline in plankton diversity and carbon flux with reduced sea ice extent along the Western Antarctic Peninsula.

Invited talk at Nanjing University, Nanjing, China. Apr 2021. Mapping the 'invisible forest' and its role in carbon cycling in the Southern Ocean.

TARA Pacific Meeting, in Genoscope (Evry), France. May 2019. Net community production variability in the open ocean and around the Pacific Islands.

Antarctic Circumnavigation Expedition (ACE) Meeting, Plymouth, UK. Sep 2018. Links between microbial community structure and net community production in the Southern Ocean.

TARA Pacific Meeting, Nice, France. June 2018. Taking the pulse of the ocean – insight into the metabolic balance of the open ocean and coral reefs.

Ocean Sciences Meeting, Oregon, USA. Feb 2018. From microbial community structure to biological pump: community composition and interactions are good predictors of net community production at the Western Antarctica Peninsula.

Invited talk at Emerging Bioinformatics Approaches in Microbial Ecogenomics (EBAME) workshop, Plouzane, France. Oct 2016. Linking community structure to ecosystem functioning – Specific microbes are good predictors of carbon export in the Southern Ocean.

Invited talk at University of North Carolina at Chapel Hill, Chapel Hill, USA. Sep 2015. Mapping the 'invisible forest' and its role in carbon cycling in the Southern Ocean.

New Generation of Polar Researchers (NPGR) Leadership Symposium, Catalina Island, USA. May 2015. Mapping the 'invisible forest' and its role in carbon cycling in the Southern Ocean.

Funded by DKU and China Initiatives to visit and present research at Peking University, Shanghai Jiao Tong University, and Xiamen University in China. Nov 2014. Carbon fluxes and plankton community structure at the Western Antarctic Peninsula.

Ocean Sciences Meeting, Salt Lake City, USA. Feb 2012. Estimating the growth rate and biogeochemistry of genetically diverse *Prochlorococcus* using rRNA/rDNA ratios.

North Carolina ASM Branch Meeting, Asheville, USA. Oct 2011. Estimating the growth rate and biomass production of genetically diverse *Prochlorococcus* using rRNA/rDNA ratios.