

BO YANG

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https://www.researchgate.net/profile/Bo_Yang101

EDUCATION

- **Ph.D. in Marine Science**, Aug 2015
College of Marine Science, University of South Florida, USA
Thesis: *Field Observations and Novel Methodologies for Carbon System Assessment in Coastal Waters*
Advisor: Dr. Robert Byrne
- **M.S. in Environmental Science**, June 2010
College of Oceanography and Environmental Science, Xiamen University, China
Thesis: *Development of a High Precision Seawater pH Measurement System*
- **B.S. in Marine Science**, June 2007
College of Oceanography and Environmental Science, Xiamen University, China
Thesis: *A Novel Method for Determination of Total Alkalinity in Seawater*

APPOINTMENT

- 2020 - Senior Research Associate I
Cooperative Institute for Marine and Atmospheric Studies, University of Miami
Argo Data Center, NOAA AOML
- 2018 - 2020 Postdoctoral Research Associate with Dr. Scott Doney
Department of Environmental Sciences, University of Virginia
- 2015 - 2018 Postdoctoral Research Associate with Dr. Steven Emerson
School of Oceanography, University of Washington

RESEARCH PROJECT

- **University of Miami/NOAA AOML 2020 -**
Development of BGC-Argo data processing system
- **University of Virginia 2018 - 2020**
(1) Study North Atlantic phytoplankton phenology and carbon production using Argo, satellite and model data (2) Study the carbon budget on the West Antarctic Peninsula shelf using long-term mooring data
- **University of Washington 2015-2018**
(1) Quantification of biological carbon pump with chemical tracer measurements from Argo, mooring, and research cruises (2) The role of bubbles in air-sea gas exchange
- **University of South Florida 2010-2015**
(1) Organic alkalinity in coastal waters, (2) Time series assessments of coastal ocean acidification, (3) Low-cost photometer for seawater pH measurement, (4) In Situ spectrophotometric sensor for

dissolved inorganic carbon measurements in seawater, (5) Remote sensing algorithm for surface water $p\text{CO}_2$

Xiamen University 2007-2010

(1) In-situ sensors for pH, total alkalinity, and nutrients, (2) Western Xiamen Bay marine environmental monitoring project (nutrients and organic pollutants)

TEACHING EXPERIENCE

TA for Chemical Oceanography (USF, 2014-2015), Environmental Analytical Chemistry (XMU, 2008-2010)

PEER-REVIEWED PUBLICATION

22. **Yang, B.**, Shadwick, S. E., Doney, S. C. (2021) Annual mixed layer carbon budget for the West Antarctic Peninsula continental shelf: insights from year-round mooring measurements. Submitted to *Journal of Geophysical Research: Oceans*, DOI: 10.1029/2020JC016920.
21. **Yang, B.**, Fox, J., Behrenfeld, M. J., Boss, E. S., Haëntjens, N., Halsey, K., Emerson, S. E., Doney, S. C. (2021). In-situ estimates of net primary production in the western North Atlantic Ocean with Argo profiling floats. *Journal of Geophysical Research: Biogeosciences*, DOI: 10.1029/2020JG006116
20. Cao, L., Qi, D., Li, Q., **Yang, B.**, Zhang, Y., Zhang, S., Qi, S., Zhang, Y. and Liu, Y. (2021). Spectrophotometric loop flow analyzer for high-precision measurement of seawater pH. *Talanta*, DOI: 10.1016/j.talanta.2020.121775.
19. Liang, J., D'Asaro, E., McNeil, C., Fan, Y., Harcourt, R., Emerson, S. E., **Yang, B.**, Sullivan, P. (2020). Suppression of CO_2 outgassing by gas bubbles under a hurricane. *Geophysical Research Letter*, DOI: 10.1029/2020GL090249.
18. **Yang, B.**, Boss, E. S., Haëntjens, N., Long, M. C., Behrenfeld, M. J., Eveleth, R., Doney, S. C. (2020). Phytoplankton Phenology in the North Atlantic: insights from profiling float measurements. *Frontiers in Marine Science*, DOI: 10.3389/fmars.2020.00139.
17. Ma, J., Shu, H., **Yang, B.**, Byrne, R. H., Yuan, D. (2019). Spectrophotometric determination of pH and carbonate ion concentrations in seawater: Choices, constraints and consequences. *Analytica Chimica Acta*, DOI: 10.1016/j.aca.2019.06.024.
16. **Yang, B.**, Emerson, S. R, Quay, P.D. (2019). The subtropical ocean's biological carbon pump determined from O_2 and DIC/ DI^{13}C tracers. *Geophysical Research Letter*, DOI: 10.1029/2018GL081239.
15. Emerson, S. R., **Yang, B.**, White, M., Cronin, M. (2019). Air-Sea Gas Transfer: Determining Bubble Fluxes with In Situ N_2 Observations. *Journal of Geophysical Research: Oceans*, DOI: 10.1029/2018JC014786.

14. **Yang, B.**, Emerson, S. R., Peña, M. A. (2018). The Effect of the 2013-2016 High Temperature Anomaly in the Subarctic Northeast Pacific (The “Blob”) on Net Community Production. *Biogeosciences*, DOI: 10.5194/bg-15-6747-2018.
13. Bittig, H. C., Körtzinger, A., Neill, C., van Ooijen, E., Plant, J. N., Hahn, J., Johnson, K. S., **Yang, B.**, Emerson, S. R. (2018). Oxygen Optode Sensors: Principle, Characterization, Calibration and Application in the Ocean. *Frontiers in Marine Science*, DOI: 10.3389/fmars.2017.00429.
12. Huang, Y., **Yang, B.** (co-first author), Chen, B., Huang, B., Qiu, G., Wang, H. (2018). Net community production in the South China Sea Basin estimated from *in-situ* O₂ measurements on an Argo profiling float. *Deep-Sea Research Part I: Oceanographic Research Papers*, DOI: 10.1016/j.dsr.2017.11.002.
11. Chen, S., Hu, C., Cai, W.-J., **Yang, B.** (2017). Estimating surface pCO₂ in the northern Gulf of Mexico: which remote sensing model to use? *Continental Shelf Research*, 151, 94-110, DOI: 10.1016/j.csr.2017.10.013.
10. Zhang, M., Marandino, C., Chen, L., Sun, H., Gao, Z., Park, K., Kim, I., **Yang, B.**, Zhu, T., Yan, J., Wang, J. (2017). Characteristics of the surface water DMS and pCO₂ distributions and their relationships in the Southern Ocean, southeast Indian Ocean and northwest Pacific Ocean. *Global Biogeochemical Cycles*, 31, 1318–1331, DOI: 10.1002/2017GB005637.
9. **Yang, B.**, Emerson, S. R., Bushinsky, S. M. (2017). Annual net community production in the subtropical Pacific Ocean from *in-situ* measurements on profiling floats. *Global Biogeochemical Cycles*, 31, 728-744, DOI: 10.1002/2016GB005545.
8. Liang, J., Emerson, S. R., D’Asaro, E., McNeil, C., Harcourt, R., Sullivan, P., **Yang, B.**, Cronin, M. (2017). On the Role of Sea-state in Bubble-mediated Air-sea Gas Flux during a Winter Storm. *Journal of Geophysical Research: Oceans*, 122, 2671-2685, DOI: 10.1002/2016JC012408.
7. Chen, S., Hu, C., Byrne R.H., Robbins L.L., **Yang, B.** (2016). Remote estimation of surface pCO₂ on the West Florida Shelf. *Continental Shelf Research*, 128, 10-25, DOI: 10.1016/j.csr.2016.09.004.
6. **Yang, B.**, Byrne, R. H., & Lindemuth, M. (2015). Contributions of organic alkalinity to total alkalinity in coastal waters: A spectrophotometric approach. *Marine Chemistry*, 176, 199-207, DOI: 10.1016/j.marchem.2015.09.008.
5. **Yang, B.**, Byrne, R. H., & Wanninkhof, R. (2015). Subannual variability of total alkalinity distributions in the northeastern Gulf of Mexico. *Journal of Geophysical Research: Oceans*, 120(5), 3805-3816, DOI: 10.1002/2015JC010780.
4. Patsavas, M. C., Byrne, R. H., **Yang, B.**, Easley, R. A., Wanninkhof, R., & Liu, X. (2015). Procedures for direct spectrophotometric determination of carbonate ion concentrations: Measurements in US Gulf of Mexico and East Coast waters. *Marine Chemistry*, 168, 80-85, DOI: 10.1016/j.marchem.2014.10.015.

3. **Yang, B.**, Patsavas, M. C., Byrne, R. H., & Ma, J. (2014). Seawater pH measurements in the field: A DIY photometer with 0.01 unit pH accuracy. *Marine Chemistry*, 160, 75-81, DOI: 10.1016/j.marchem.2014.01.005.
2. Liu, X., Byrne, R. H., Adornato, L., Yates, K. K., Kaltenbacher, E., Ding, X., & **Yang, B.** (2013). In situ spectrophotometric measurement of dissolved inorganic carbon in seawater. *Environmental Science & Technology*, 47(19), 11106-11114, DOI: 10.1021/es4014807.
1. Ma, J., **Yang, B.**, & Byrne, R. H. (2012). Determination of nanomolar chromate in drinking water with solid phase extraction and a portable spectrophotometer. *Journal of Hazardous Materials*, 219, 247-252, DOI: 10.1016/j.jhazmat.2012.04.001.

MANUSCRIPT

1. **Yang, B.** (2021). Seasonal relationship between net primary and net community production in the subtropical gyres: insights from satellite and Argo profiling float measurements. Submitted to *Geophysical Research Letters*, under review.

ABSTRACT AND PRESENTATION

- **Yang, B.**, Boss, E., Haëntjens, N., Behrenfel, M. J., Long, M.C., Emerson, S. R., Eveleth, R., Doney, S. C. In-situ observations of phytoplankton phenology, net primary production (NPP), net community production (NCP), and NCP to NPP ratio in the North Atlantic Ocean with Argo profiling floats. *Ocean Sciences 2020*, San Diego, California, USA, Feb. 2020.
- Emerson, S. R., **Yang, B.**, Riser, S. C. The Ocean's Biological Pump Determined from In Situ Oxygen Measurements on Profiling Floats. *Ocean Sciences 2020*, San Diego, California, USA, Feb. 2020.
- **Yang, B.**, Emerson, S. R., Riser, S. C. Measuring the biological carbon pump in the ocean using in-situ oxygen measurements on profiling floats (oral presentation). *Ocean Sciences 2018*, Portland, Oregon, USA, Feb. 2018.
- **Yang, B.**, Byrne, R. H., Lindemuth, M. Contributions of organic alkalinity to total alkalinity in coastal waters: A spectrophotometric approach (invited poster). *Ocean Sciences 2018*, Portland, Oregon, USA, Feb. 2018.
- Emerson, S. R., **Yang, B.**, White, M., Cronin, M. The role of bubble processes in air-sea gas exchange: verification of bubble models with time-series measurements of N₂. *Ocean Sciences 2018*, Portland, Oregon, USA, Feb. 2018.
- **Yang, B.**, Emerson, S. R., Riser, S. C. Measuring the biological carbon pump in the ocean using in-situ oxygen measurements on profiling floats (poster). *Gordon Research Conference on Chemical Oceanography*, New London, NH, USA, July 2017.
- **Yang, B.**, Emerson S.R. Did the "Blob" affect Net Community Production? Observations at Ocean Station Papa from 2013 to 2015 (poster). *Station Papa/Line P 60th anniversary symposium*, Sidney, British Columbia, Canada, Nov. 2016.

- **Yang, B.** Field Observations and Novel Methodologies for Carbon System Assessment in Coastal Waters (oral presentation). *Dissertations Symposium in Chemical Oceanography (DISCO) XXV*, Honolulu, Hawaii, USA, Oct. 2016.
- **Yang, B.**, Emerson S.R., Bushinsky S.M. Annual net community production in the western subtropical North Pacific determined from Argo-O₂ measurements (oral presentation, abstract ID: 93072). *Ocean Sciences 2016*, New Orleans, Louisiana, USA, Feb. 2016.

PATENT

- Fries, D., **Yang, B.**, Abbott, W. Systems and methods for bubble based ion sources. US patent NO. 9812312.
- Li, Q., Yuan, D., Dai, M., **Yang, B.**, Chen, J., Dai, J. Total Alkalinity analyzer. CN patent Public No. CN101221131
- Li, Q., **Yang, B.** A crisscross flow cell. CN patent Public No. CN201488941U

HONOR

- Renate E. Bernstein Outstanding Authorship Award (2014), C.W. Bill Young Endowed Fellowship (2012, 2014), Gulf Oceanographic Trust Fellowship (2013), Von Rosenstiel Endowed Fellowship (2010), University of South Florida.

FUNDING

- Commonwealth Scientific and Industrial Research Organization (CSIRO) research fellowship, 2018 (Declined).
- Invited Participant, Interdisciplinary Workshop for Early Career Scientists, Ocean Observatories Initiative (OOI), 2018.
- Support for the Cornell Satellite Remote Sensing course, The Ocean Carbon and Biogeochemistry (OCB) program, 2017.
- Invited Participant, Dissertations Symposium in Chemical Oceanography (DISCO) XXV, 2016.
- Blue Ocean Grants and Challenges – Development Award, Sponsored by Ocean Optics, Inc., Oct. 2011.

FIELD WORK

- Line P Cruise **15 days**, June 2016, *CCGS John P. Tully*.
- Time series assessments of ocean acidification and carbon system properties in coastal waters **46 days**, 2012-14 (6 cruises), *R/V Weatherbird II*.
- Hydrographic & Water Chemistry measurements for the yearly assessment of the western Arctic Boundary Current **21 days**, Oct. 2012, *USCGC Healy*.
- Gulf of Mexico and East Coast Carbon Cruise (GOMECC-2) **24 days**, Aug. 2012, *R/V Ron Brown*.
- West Coast Ocean Acidification Cruise **24 days**, Aug. 2011, *R/V Wecoma*.

- WB1109 Oil spill response cruise **5 days**, Nov. 2010, R/V Weatherbird II.
- Carbon Cycle in China Seas – budget, controls and ocean acidification **40 days**, 2008-09 (2 cruises), R/V Dongfanghong II.