

Curriculum Vitae

Z. A. Wang

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Zhaohui Aleck Wang, PhD

Associate Scientist with Tenure
Department of Marine Chemistry & Geochemistry
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Education

1998-2003 Ph.D., Marine Science, University of Georgia, Athens, GA.
Advisor, Professor Weijun Cai.
1996-1998 M.Sc., Oceanography, University of New Hampshire, Durham, NH.
Advisor, Professor Theodore Loder.
1990-1994 Marine Chemistry, Xiamen University, Xiamen, China.

Professional Experience

2018-Present	Associate Scientist with Tenure	Woods Hole Oceanographic Institution
2013-2018	Associate Scientist	Woods Hole Oceanographic Institution
2009-2013	Assistant Scientist	Woods Hole Oceanographic Institution
2003-2009	Postdoc Research Associate	University of South Florida (Mentor, Professor Robert Byrne)
1994-1996	Project Manager	State Oceanic Administration of China

Selected Awards

2003: Dissertations Symposium on Chemical Oceanography (DISCO XVIII) Invited Participant
2003: Dissertation Completion Assistantships, University of Georgia
2002: Student Travel Grant Award, American Geophysical Union
1996-1998: Departmental Tuition Scholarship, Department of Earth Science, University of New Hampshire.

Professional Affiliations

Member, American Geophysical Union
Member, Association for the Sciences of Limnology and Oceanography
Member, American Chemical Society
Member, Geochemical Society

Research Interests

Marine/aquatic chemistry and biogeochemistry: CO₂ system (carbonate chemistry); Ocean Acidification and its impacts; Marine inorganic carbon cycle; Coastal carbon budget; Carbon exports from coastal wetlands; Blue carbon; Freshwater CO₂ system
Sensing technologies: Development of new methodology and in-situ sensors for measurements of CO₂ system parameters (pH, pCO₂/fCO₂, dissolved inorganic carbon, and total alkalinity), nutrients, and trace metals

Professional Activities and Service

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(a) At WHOI

WHOI Scientific Staff Executive Committee (SciSEC) 2021 – present
WHOI International Committee 2021 – present
MC&G scientific staff search committee 2020 – 2021
Committee for Diversity and Inclusion 2019-present
WHOI Summer Student Fellowship Selection Committee, 2016-2018
Chair, WHOI Sensor Workshop. 2017.

(b) Elsewhere

NSF Coastlines and People (CoPe) Workshop (invited). September 26-28, 2018. San Diego, CA.

Committee member of OCB Workshop ‘Lateral Carbon Fluxes in Tidal Wetlands.’ Aug 21-23, 2018. Woods Hole, MA.

Chair or co-chair of 9 program sessions in international conferences (last 5 years)

Co-chair, Plenary Session: Carbon fluxes in coastal wetlands: What is state-of-the-art?
Ocean Carbon Biogeochemistry program Summer Workshop. June 26-29, 2017. Woods Hole, MA.

Organizing Committee Member of the 4th Ocean Acidification PI Workshop (NSF), 2017-2018.

Co-chair, Plenary Session: Carbon fluxes in coastal wetlands: What is state-of-the-art?
Ocean Carbon Biogeochemistry program Summer Workshop. June 26-29, 2017. Woods Hole, MA.

2nd State of the Carbon Cycle Report (SOCCR-2) contributing writer, 2016-2019

NSF Graduate Research Fellowship Program review panelist, 2016

Member of Editorial Committee, Acta Oceanologica Sinica (Journal), China, 2016-present

Northeast Coastal Acidification Network (NECAN) Scientific Committee member. 2015-present

WHOI representative for the Northeastern Regional Association of Coastal Ocean Observing Systems (NERACOOS) Board, 2012-present.

Panelist for the Northeast Coastal Acidification Network (NECAN), 2013-2014

Group leader for East Coast CO₂ flux synthesis, U.S. East Coast Carbon Cycle Synthesis Workshop, Ocean Carbon Biogeochemistry (OCB) and North America Carbon Program (NACP). January 19-20, 2012.

Member for Ocean Observatories Initiative instrument selection board, Consortium for Ocean Leadership, 2011

Invited instructor, Ocean Acidification Short Course (Ocean Carbon Biogeochemistry program sponsored), Woods Hole, MA. November 2009.

Journal reviewer: *Nature Reviews Earth & Environment*; *Environmental Science and Technology*; *The ISME Journal*; *Marine Chemistry*; *Limnology and Oceanography*;

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Limnology and Oceanography: Methods; Deep Sea Research; Proceedings of the Royal Society B (Biological Sciences); Continental Shelf Research; Biogeosciences; Aquatic Geochemistry; Journal of Marine Systems; Nature Scientific Reports; Journal of Geophysical Research; Methods in Oceanography

Proposal reviewer: NSF, DOE, NOAA

Teaching

MIT-WHOI Joint Program: Geochemistry of Marine Sediments (12.743), Spring 2019. Co-teach with D. McCorkle and M. Long),

Invited lecturer, Seawater chemistry and ocean acidification, Sixth Intergovernmental Oceanographic Commission (IOC) Sub-Commission for the Western Pacific (WESTPAC) Summer School on Monsoon Onset Monitoring and its Social & Ecosystem Impacts (MOMSEI), Oct 2015. Phuket, Thailand.

Invited lecturer, Carbonate chemistry in natural waters (lecture for graduate students), College of Chemistry and Chemical Engineering Ocean University of China, Qingdao, China. 2011-2019

Invited lecturer, Training course on Basic Oceanography organized by IOC Sub-Commission for the Western Pacific (WESTPAC), Phuket Marine Biological Center (PMBC), Phuket, Thailand. May 2015.

Instructor, Ocean Acidification Short Course (Ocean Carbon Biogeochemistry program sponsored), Woods Hole, MA. November 2009.

Teaching Assistant, General Oceanography Lab (MARS1010L), Department of Marine Sciences, University of Georgia, Athens, GA. 1998-2000.

Teaching Assistant, Marine Biology Lab (MARS1020L), Department of Marine Sciences, University of Georgia, Athens, GA. 1998-2000.

Advising and Mentoring

WHOI Postdoctoral Scholar (WHOI fellowship):

Dr. Kristina Brown (co-advise with B. Peucker-Ehrenbrink and V. Galy), 2014-2017

Dr. Adam Subhas (co-advise with D. McCorkle and M. Long), 2017-2019

Dr. Maggie Johnson (co-advise with A. Tarrant), 2020-present

Postdoc Investigators:

Dr. Eyal Wurgaft, 2017-2019

De. Louise Cameron, 2020 – 2021

MIT-WHOI Joint Program Student:

Mallory Ringham, MIT-WHOI Joint Program student, 2016-present

Beckett Colson, MIT-WHOI Joint Program student, 2016-present (dissertation committee)

Sophie Chu, MIT-WHOI Joint Program student, 2011-2017

Visiting PhD student

Shuzhen Song, East China Normal University, 2016-2018

Haorui Liang, Ocean University of China, 2017-2019

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WHOI Summer Student Fellow:

Jonathan Pfeifer, Flathead Valley Community College, 2020
Maxwell Furigay, Trinity College, 2018
Stacey Felgate, University of the Highlands and Islands, 2016
Lloyd Anderson, Bowdoin College, 2015
Alterra Sanchez, San Diego State University, 2013
Jacinta Edebeli, University of Massachusetts Amherst, 2011

Undergraduate Intern Students:

Jonathan Pfeifer, Cornell University, 2020 – present
Mackenzie Fiss, North Carolina State University, 2018
Katie Carter, Bowdoin College, 2015
Dmitro Martynowych, Scranton University, 2014
Lenna Quackenbush, Worcester Polytechnic Institute, 2013
Yue Qiu, Oberlin College, 2013
Yujuan Zhou, Ocean University of China, 2012-2013
Robert "Nick" Tuttle, Drexel University, 2012
Kelly Knorr, University of Rhode Island, 2012
Mohammad M. Uddin, University of New Hampshire, 2011
Cris Luttazi, Kingston University, 2010, 2011
Charles Zhu, Yale University, 2010

High School Intern Student:

Juliette Parmenter, Meridian Academy, 2014

Visiting Scholars:

Dr. Quanlong Li, Xiamen University, China. 2011-2012
Dr. Minhan Dai, Xiamen University, China, 2014, 2015
Dr. Peisong Yu, The Second Institute of Oceanography, State Oceanic Administration of China. 2014 – 2015 and 2016 – 2017
Dr. Chunlin Ning, The First Institute of Oceanography, State Oceanic Administration of China. 2014 – 2015.
Dr. Enrique García Luque, Department of Physical Chemistry, University of Cadiz, Spain. 2016.
Mr. Yabin Men, Chief Senior Engineer, National Ocean Technology Center, State Oceanic Administration of China. 2016-2017.
Dr. Xuwei Xu, The Second Institute of Oceanography, State Oceanic Administration of China. 2017.
Dr. Boaz Lazar, the Fredy and Nadine Hermann Institute of Earth Sciences, the Hebrew University, Israel. 2017.
Mr. Xiaobo Ni, the 2nd Institute of Oceanography, State Oceanic Administration, China. 2018-2020

Patents

Wang, Z. A. and F. N. Sonnichsen. System and Method to Measure Dissolved Gases in Liquid. 2015. US Patent No: 10,067,111.

Papers in Refereed Journals

(* Advised students, postdocs, visiting scholars; # Corresponding author)

40. Siedlecki, S., J. Salisbury, D. Gledhill, C. Bastidas, S. Meseck, K. McGarry, C. Hunt, M. Alexander, D. Lavoie, Z. Wang, J. Scott, D. Brady, I. Mlsna, K. Azetsu-Scott, C. Liberti, D. Melrose, M. White, A. Pershing, D. Vandemark, D. Townsend, C. Chen, W. Mook, and R. Morrison. 2021. Projecting ocean acidification impacts for the Gulf of Maine to 2050: New tools and expectations. *Elementa: Science of the Anthropocene* 9. doi: 10.1525/elementa.2020.00062.
39. Wurgaft, E.*, **Z. A. Wang**, J. H. Churchill, T. Dellapenna, S. Song, J. Du, M. C. Ringham, T. Rivlin, and B. Lazar. 2021. Particle Triggered Reactions as an Important Mechanism of Alkalinity and Inorganic Carbon Removal in River Plumes. *Geophys. Res. Lett.* 48. doi: 10.1029/2021GL093178.
38. Tamborski, J. J., M. Eagle, B. L. Kurylyk, K. D. Kroeger, **Z. A. Wang**, P. Henderson, and M. A. Charette. 2021. Pore water exchange-driven inorganic carbon export from intertidal salt marshes. *Limnol. Oceanogr.* doi: <https://doi.org/10.1002/lno.11721>.
37. Yu, P.*#, **Z. A. Wang**#, J. Churchill, M. Zheng, J. Pan, Y. Bai, and C. Liang. 2020. Effects of Typhoons on Surface Seawater $p\text{CO}_2$ and Air-Sea CO_2 Fluxes in the Northern South China Sea. *Journal of Geophysical Research: Oceans* 125: e2020JC016258. doi: 10.1029/2020jc016258.
36. Kipp, L. E., P. B. Henderson, **Z. A. Wang**, and M. A. Charette. 2020. Deltaic and Estuarine Controls on Mackenzie River Solute Fluxes to the Arctic Ocean. *Estuaries Coasts*. doi: 10.1007/s12237-020-00739-8.
35. Maas, A. E., G. L. Lawson, A. J. Bergan, **Z. A. Wang**, and A. M. Tarrant. 2020. Seasonal variation in physiology and shell condition of the pteropod *Limacina retroversa* in the Gulf of Maine relative to life cycle and carbonate chemistry. *Prog. Oceanogr.* 186: 102371.
34. Song, S., **Z. A. Wang**#, M. E. Gonneea, K. D. Kroeger, S. N. Chu, D. Li, and H. Liang. 2020. An important biogeochemical link between organic and inorganic carbon cycling: Effects of organic alkalinity on carbonate chemistry in coastal waters influenced by intertidal salt marshes. *Geochim. Cosmochim. Acta* 275. 123-139. Doi: 10.1016/j.gca.2020.02.013.
33. Turk, D., H. Wang, X. Hu, D. K. Gledhill, **Z. A. Wang**, L. Jiang, and W.-J. Cai. 2019. Time of Emergence of Surface Ocean Carbon Dioxide Trends in the North American Coastal Margins in Support of Ocean Acidification Observing System Design. *Frontiers in Marine Science* 6. doi: 10.3389/fmars.2019.00091.
32. **Wang Z.A.**#, Moustahfid H, Mueller AV, Michel APM, Mowlem M, Glazer BT, Mooney TA, Michaels W, McQuillan JS, Robidart JC, Churchill J, Sourisseau M, Daniel A, Schaap A, Monk S, Friedman K and Brehmer P (2019) Advancing Observation of Ocean Biogeochemistry, Biology, and Ecosystems With Cost-Effective in situ Sensing Technologies. *Front. Mar. Sci.* 6:519.doi: 10.3389/fmars.2019.00519
31. Fennel, K., S. Alin, L. Barbero, W. Evans, T. Bourgeois, S. Cooley, J. Dunne, R. A. Feely, J. M. Hernandez-Ayon, X. Hu, S. Lohrenz, F. Muller-Karger, R. Najjar, L. Robbins, E. Shadwick, S. Siedlecki, N. Steiner, A. Sutton, D. Turk, P. Vlahos, and **Z. A. Wang**. 2019.

- Carbon cycling in the North American coastal ocean: a synthesis. *Biogeosciences* 16: 1281-1304.
30. Chu, S. N.*, **Z. A. Wang**[#], K. D. Kroeger, M. E. Gonneea, and N. K. Ganju. 2018. Deciphering the dynamics of inorganic carbon export from intertidal salt marshes using high-frequency measurements. *Marine Chemistry*. <https://doi.org/10.1016/j.marchem.2018.08.005>
 29. Liu, Q., Y. Wu, L. Liao, D. Zhang, Y. Yuan, **Z.A. Wang**, X. Xu. 2018. Shift of bacterial community structures in sediments from the Changjiang (Yangtze River) estuary to the East China Sea linked to environmental gradients. *Geomicrobiology Journal*. DOI: 10.1080/01490451.2018.1489914
 28. Najjar, R.G, M. Herrmann, R. Alexander, E. W. Boyer, D. Burdige, D. Butman, W.-J. Cai, E. A. Canuel, R. F. Chen, M. A. M. Friedrichs, R. A. Feagin, P. Griffith, A. L. Hinson, J. R. Holmquist, X. Hu, W. M. Kemp, K. D. Kroeger, A. Mannino, S. L. McCallister, W. R. McGillis, M. R. Mulholland, C. Pilskaln, J. Salisbury, S. Signorini, P. St-Laurent, H. Tian, M. Tzortziou, P. Vlahos, **Z. A. Wang**, and R. C. Zimmerman. 2018. Carbon budget of tidal wetlands, estuaries, and shelf waters of eastern North America. *Global Biogeochemical Cycles*, 32. <https://doi.org/10.1002/2017GB005790>.
 27. Fassbender, A.J. et al. Perspectives on Chemical Oceanography in the 21st century: Participants of the COME ABOARD Meeting examine aspects of the field in the context of 40 years of DISCO. *Marine Chemistry*, 196: 181-190. <http://dx.doi.org/10.1016/j.marchem.2017.09.002>
 26. Bergan, A. J., G. L. Lawson, A. E. Maas, and **Z. A. Wang**. 2017. The effect of elevated carbon dioxide on the sinking and swimming of the shelled pteropod *Limacina retroversa*. *ICES Journal of Marine Science*. doi:10.1093/icesjms/fsx008.
 25. **Wang, Z. A.**, G. L. Lawson, C. H. Pilskaln, and A. E. Maas. 2017. Seasonal controls of aragonite saturation states in the Gulf of Maine. *Journal of Geophysical Research: Oceans* 122. doi: 10.1002/2016jc012373.
 24. Maas, A. E., G. L. Lawson, and **Z. A. Wang**. 2016. The metabolic response of thecosome pteropods from the North Atlantic and North Pacific oceans to high CO₂ and low O₂. *Biogeosciences* 13 (22): 6191-6210. doi: 10.5194/bg-13-6191-2016.
 23. Chu, S. N.*, **Z. A. Wang**, S. C. Doney, G. L. Lawson, and K. A. Hoering. 2016. Changes in anthropogenic carbon storage in the Northeast Pacific in the last decade, *Journal of Geophysical Research: Oceans*, 121(7): 4618-4632, doi: 10.1002/2016jc011775.
 22. **Wang, Z. A.**, K. D. Kroeger, N. K. Ganju, M. E. Gonneea, and S. N. Chu. 2016. Intertidal salt marshes as an important source of inorganic carbon to the coastal ocean. *Limnol. Oceanogr.* 61: 1916-1931. doi: 10.1002/lno.10347.
 21. **Wang, Z. A.**, F. N. Sonnichsen, A. M. Bradley, K. A. Hoering, T. M. Lanagan, S. N. Chu, T. R. Hammar, and R. Camilli. 2015. In situ sensor technology for simultaneous spectrophotometric measurements of seawater total dissolved inorganic carbon and pH. *Environ. Sci. Technol.* 49: 4441-4449. doi: 10.1021/es504893n
 20. Gledhill, D. K., M. M. White, J. Salisbury, H. Thomas, I. Mlsna, M. Liebman, B. Mook, J. Gear, A. C. Candelmo, R. C. Chambers, C. J. Gobler, C. W. Hunt, A. L. King, N. N. Price,

- S. R. Signorini, E. Standoff, C. Stymiest, R. A. Wahle, J. D. Waller, N. D. Rebuck, **Z. A. Wang**, T. L. Capson, J. R. Morrison, S. R. Cooley, and S. C. Doney. 2015. Ocean and Coastal Acidification off New England and Nova Scotia. *Oceanography* 28: 182-197.
19. McGillis, W. R., D. Y. Hsueh, Y. Zheng, M. Markowitz, R. Gibson, G. Bolduc, F. J. Fevrin, J. E. Thys, W. Noel, J. Paine, **Z. A. Wang**, K. Hoering, R. Hakimdavar, and P. J. Culligan. 2015. Carbon transport in rivers of southwest Haiti. *Appl. Geochem.* 63: 563-572. doi: 10.1016/j.apgeochem.2015.09.004.
18. Mann, P. J., R. G. M. Spencer, B. J. Dinga, J. R. Poulsen, P. J. Hernes, G. Fiske, M. E. Salter, **Z. A. Wang**, K. A. Hoering, J. Six, and R. M. Holmes. 2014. The biogeochemistry of carbon across a gradient of streams and rivers within the Congo Basin. *J. Geophys. Res. – Biogeosciences*. 119: 687-702. doi:10.1002/2013JG002442.
17. Voss, B. M., B. Peucker-Ehrenbrink, T. I. Eglinton, G. Fiske, **Z. A. Wang**, K. A. Hoering, D. B. Montluçon, C. Lecroy, S. Pal, S. Marsh, S. L. Gillies, A. Janmaat, M. Bennett, B. Downey, J. Fanslau, H. Fraser, G. Macklam-Harron, M. Martinec, and B. Wiebe. 2014. Tracing river chemistry in space and time: Dissolved inorganic constituents of the Fraser River, Canada. *Geochimica et Cosmochimica Acta*, 124: 283–308. doi: 10.1016/j.gca.2013.09.006.
16. Signorini, S. R., A. Mannino, R. G. Najjar, M. a. M. Friedrichs, W. J. Cai, J. Salisbury, **Z. A. Wang**, H. Thomas, and E. Shadwick. 2013. Surface ocean $p\text{CO}_2$ seasonality and sea-air CO_2 flux estimates for the North American east coast. *J. Geophys. Res. – Oceans* 118: 1–22. doi:10.1002/jgrc.20369.
15. Li, Q.*, Wang, F., **Wang, Z. A.**, Yuan, D., Dai, M., Chen, J., Dai, J., and Hoering, K. A. 2013. Automated spectrophotometric analyzer for rapid single-point titration of seawater total alkalinity. *Environ. Sci. Technol.* 47: 11139-11146. doi: 10.1021/es402421a.
14. **Wang, Z. A.**, Chu, S. N. and Hoering, H. A. 2013c. High-frequency spectrophotometric measurements of total dissolved inorganic carbon in seawater. *Environ. Sci. Technol.* 47: 7840-7847. doi: DOI: 10.1021/es400567k.
13. **Wang, Z. A.**, D. J. Bienvenu, P. J. Mann, H.A. Hoering, J. R. Poulsen, R. G. M. Spencer, and R. M. Holmes. 2013b. Inorganic carbon speciation and fluxes in the Congo River. *Geophys. Res. Lett.* 40: 511-516. doi: 10.1002/grl.50160.
12. **Wang, Z. A.**, R. Wanninkhof, W. J. Cai, R. H. Byrne, X. P. Hu, T. H. Peng, and W. J. Huang. 2013a. The marine inorganic carbon system along the Gulf of Mexico and Atlantic coasts of the United States: Insights from a transregional coastal carbon study. *Limnol. Oceanogr.* 58: 325-342. doi: 10.4319/lo.2013.58.1.0325.
11. **Wang, Z.A.** and Byrne, R.H. 2010. Summer-time CO_2 fluxes and carbonate system behavior in the Mississippi River and Orinoco River Plumes in *Proceedings of OceanObs'09: Sustained Ocean Observations and Information for Society (Annex)*, Venice, Italy, 21-25 September 2009, Hall, J., Harrison, D.E. & Stammer, D., Eds., ESA Publication WPP-306, doi:10.5270/OceanObs09.

10. **Wang, Z. A.**, X. W. Liu, R. H. Byrne, R. Wanninkhof, R. E. Bernstein, E. A. Kaltenbacher, and J. Patten. 2007. Simultaneous spectrophotometric flow-through measurements of pH, carbon dioxide fugacity, and total inorganic carbon in seawater. *Anal. Chim. Acta* 596: 23-36. doi: 10.1016/j.aca.2007.05.048.
9. John, D. E., **Z. A. Wang**, X. W. Liu, R. H. Byrne, J. E. Corredor, J. M. Lopez, A. Cabrera, D. A. Bronk, F. R. Tabita, and J. H. Paul. 2007. Phytoplankton carbon fixation gene (RuBisCO) transcripts and air-sea CO₂ flux in the Mississippi River plume. *ISME J.* 1: 517-531. doi: 10.1038/ismej.2007.70.
8. Liu, X. W., **Z. A. Wang**, R. H. Byrne, E. A. Kaltenbacher, and R. E. Bernstein. 2006. Spectrophotometric measurements of pH in-situ: Laboratory and field evaluations of instrumental performance. *Environ. Sci. Technol.* 40: 5036-5044. doi: 10.1021/es0601843.
7. **Wang, Z. A.**, W. J. Cai, Y. C. Wang, and H. W. Ji. 2005. The southeastern continental shelf of the United States as an atmospheric CO₂ source and an exporter of inorganic carbon to the ocean. *Cont. Shelf Res.* 25: 1917-1941.
6. Zhai, W. D., M. H. Dai, W. J. Cai, Y. C. Wang, and **Z. A. Wang**. 2005. High partial pressure of CO₂ and its maintaining mechanism in a subtropical estuary: the Pearl River estuary, China. *Mar. Chem.* 93: 21-32.
5. **Wang, Z. A.**, and W. J. Cai. 2004. Carbon dioxide degassing and inorganic carbon export from a marsh-dominated estuary (the Duplin River): A marsh CO₂ pump. *Limnol. Oceanogr.* 49: 341-354.
4. Cai, W. J., M. H. Dai, Y. C. Wang, W. D. Zhai, T. Huang, S. T. Chen, F. Zhang, Z. Z. Chen, and **Z. A. Wang**. 2004. The biogeochemistry of inorganic carbon and nutrients in the Pearl River estuary and the adjacent Northern South China Sea. *Cont. Shelf Res.* 24: 1301-1319.
3. Cai, W. J., **Z. A. Wang**, and Y. C. Wang. 2003. The role of marsh-dominated heterotrophic continental margins in transport of CO₂ between the atmosphere, the land-sea interface and the ocean. *Geophys. Res. Lett.* 30(16), 1849. doi: 10.1029/2003GL017633.
2. **Wang, Z. A.**, W. J. Cai, Y. C. Wang, and B. L. Upchurch. 2003. A long pathlength liquid-core waveguide sensor for real-time pCO₂ measurements at sea. *Mar. Chem.* 84: 73-84.
1. **Wang, Z. A.**, Y. H. Wang, W. J. Cai, and S. Y. Liu. 2002. A long pathlength spectrophotometric pCO₂ sensor using a gas-permeable liquid-core waveguide. *Talanta* 57: 69-80.

Other Publications

- i. Wang, Z. A., A. P. M. Michel, and T. A. Mooney. 2021. Accelerating Global Ocean Observing: Monitoring the Coastal Ocean Through Broadly Accessible, Low-Cost Sensor Networks. *Mar. Technol. Soc. J.* 55: 82-83.
- ii. Windham-Myers, L., W.-J. Cai, S. R. Alin, A. Andersson, J. Crosswell, K. H. Dunton, J. M. Hernandez-Ayon, M. Herrmann, A. L. Hinson, C. S. Hopkinson, J. Howard, X. Hu, S. H. Knox, K. Kroeger, D. Lagomasino, P. Megonigal, R. G. Najjar, M.-L.

- Paulsen, D. Peteet, E. Pidgeon, K. V. R. Schäfer, M. Tzortziou, **Z. A. Wang**, and E. B. Watson, 2018: Chapter 15: Tidal wetlands and estuaries. In Second State of the Carbon Cycle Report (SOCCR2): A Sustained Assessment Report [Cavallaro, N., G. Shrestha, R. Birdsey, M. A. Mayes, R. G. Najjar, S. C. Reed, P. Romero-Lankao, and Z. Zhu (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, pp. 596-648, <https://doi.org/10.7930/SOCCR2.2018.Ch15>.
- iii. Fennel, K., S. R. Alin, L. Barbero, W. Evans, T. Bourgeois, S. R. Cooley, J. Dunne, R. A. Feely, J. M. Hernandez-Ayon, C. Hu, X. Hu, S. E. Lohrenz, F. Muller-Karger, R. G. Najjar, L. Robbins, J. Russell, E. H. Shadwick, S. Siedlecki, N. Steiner, D. Turk, P. Vlahos, and **Z. A. Wang**, 2018: Chapter 16: Coastal ocean and continental shelves. In Second State of the Carbon Cycle Report (SOCCR2): A Sustained Assessment Report [Cavallaro, N., G. Shrestha, R. Birdsey, M. A. Mayes, R. G. Najjar, S. C. Reed, P. Romero-Lankao, and Z. Zhu (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, pp. 649-688, <https://doi.org/10.7930/SOCCR2.2018.Ch16>.
- iv. **Wang, Z. A.**, Cahill, B., Cai, W.-J., Fennel, K., Friedrichs, M., McGillis, W., Salisbury, J., Schaaf, C., and S. Signorini, S. 2012. Air-sea exchange. In: Najjar, R.G., Friedrichs, M., Cai, W.-J. (Editors), Report of the U.S. East Coast Carbon Cycle Synthesis Workshop, January 19-20, 2012, Ocean Carbon and Biogeochemistry Program and North American Carbon Program, pp. 11-12.
- v. **Wang, Z. A.** Biogeochemical changes of chemical signals in the Georgia “land-to-ocean continuum”. 2003. University of Georgia, Athens, GA. Ph.D. Thesis. doi: 10.13140/RG.2.1.1131.4809.
- vi. **Wang, Z. A.** The annual and seasonal variations of nitrogen in Massachusetts Bay. 1998. University of New Hampshire, Durham, NH. M.S. Thesis.

Invited Lectures

The Role of Inorganic Carbon Exports from Intertidal Salt Marshes in the Coastal Carbon Cycle: New Insights from Recent Measurements (virtual). April 2021. University of Georgia.

Advancing ocean carbon biogeochemistry research using in-situ sensing technologies. Inter-university Institute of Marine Sciences. June 2019. Eilat, Israel.

Shipboard Underway Measurements of Partial Pressure of CO₂. INMARTECH 2018 Symposium. October 16-18, 2018. North Falmouth, MA.

Advancing coastal carbon science with in-situ sensors: the role of lateral exports by tidal marshes in the coastal carbon cycle. September 2018. Texas A&M University, Galveston, TX.

Biogeochemistry and fluxes of lateral inorganic carbon exports by tidal salt marshes. Nov. 2018. Xiamen University, Xiamen, China.

Advancing coastal carbon science with in-situ sensors: the role of tidal marshes in the coastal carbon cycle. June 2018. Second Institute of Oceanography, State Oceanic Administration of China, Hangzhou, China.

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- The role of tidal salt marshes in the coastal carbon cycle. June 2018. Ocean University of China, Qingdao, China.
- Advancing ocean carbon and acidification research with in-situ sensing technologies. June 2018. First Institute of Oceanography, State Oceanic Administration of China, Qingdao, China.
- Carbonate Chemistry in Northeastern U.S. Shelf Waters: Sensitivity, Control and Linkage to Pteropods. Workshop: Coastal ocean acidification in the North Atlantic region, from science to outreach, A Sea Grant - NART regional integration project. UConn Avery Point, Groton, CT. April 10-12, 2018.
- Resolving the Intricacies of Lateral Exports of Inorganic Carbon and Alkalinity from Coastal Salt Marshes (Invited). February 2018. Scripps Institute of Oceanography, La Jolla, CA.
- Carbonate Chemistry in Northeastern U.S. Shelf Waters: Sensitivity, Control and Linkage to Pteropods. Workshop: Coastal ocean acidification in the North Atlantic region, from science to outreach, A Sea Grant - NART regional integration project. UConn Avery Point, Groton, CT. April 10-12, 2018.
- How much did we miss? – Intertidal Salt Marshes as an Important Source of Inorganic Carbon to the Coastal Ocean. August 2016. College of Environmental Science & Engineering, Ocean University of China. Qingdao, China.
- The Marine CO₂ system and Ocean Acidification. Sixth IOC Sub-Commission for the Western Pacific (WESTPAC) Summer School on Monsoon Onset Monitoring and its Social & Ecosystem Impacts (MOMSEI). October 26-30, 2015. Phuket, Thailand.
- Simultaneous, in-situ measurements of seawater carbon dioxide system parameters – The development and potential application. The 3rd Ocean Acidification PI Workshop. June 2015. Woods Hole, MA.
- Carbonate Chemistry in Seawater and Its Role in Climate Change. May 2015. Phuket Marine Biological Center (PMBC), Thailand.
- The U.S. Northeast Coast: A Coastal Ocean Acidification Sensitive Region. Workshop “Latitude 41 under Siege: Impact of Nutrient Pollution & OA on Coastal Waters, Estuaries and Marine Life”. February 12, 2015. University of Connecticut Avery Point, CT.
- The Paradox of Salt Marshes as a Source of Alkalinity and Low pH, High Carbon Dioxide Water to the Ocean. The 2nd Xiamen Symposium on Marine Environmental Sciences. January 07 – 09, 2015. Xiamen, China.
- High-frequency spectrophotometric measurements of seawater CO₂ system parameters – The need, development, and potential application. The 2nd Seafloor Observation Symposium of China. November 08 – 10, 2014. Xiamen, China.
- Thousands of Miles of Carbonate Chemistry. September 2014. Ocean University of China, Qingdao, China.
- The marine CO₂ system in the Northeast Coast of the United States: Ocean Acidification and Controlling Processes. April 2014. University of Massachusetts Boston. Boston, MA.

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Ocean Acidification of the Shelf Waters of NECAN: The marine inorganic carbon system along the Atlantic and Gulf of Mexico coasts of the United States. November 2013. Northeastern Regional Association of Coastal and Ocean Observing Systems (NARACOOS) Webinar Series.

Towards a Better Understanding of Changes and Drivers of the CO₂ System in Aquatic Environments. June 2013. College of Chemistry and Chemical Engineering, Ocean University of China. Qingdao, China.

Real-time Measurements of the Marine CO₂ System. June 2013. Shandong Institute of Marine Instruments. Qingdao, China.

The Marine Inorganic Carbon System along the Gulf of Mexico and Atlantic Coasts of the United States. December 2011. School of Marine Science, University of Maine. Orono, ME.

Coastal CO₂ System: From Sensor Development to Observational Studies. December 2010. The Second Institute of Oceanography, State Oceanic Administration of China. Hangzhou, China.

Distributions of the CO₂ System along the US Atlantic and Gulf of Mexico Coast. December, 2010. State Key Laboratory of Estuarine and Coastal Research, East China Normal University. Shanghai, China.

Inorganic carbon fluxes in rivers and coastal oceans. December, 2010. College of Chemistry and Chemical Engineering, Ocean University of China. Qingdao, China.

Coastal CO₂ System: From Sensor Development to Observational Studies. April 2010. Department of Oceanography, Dalhousie University, Canada.

Coastal CO₂ System: From Instrumentation to Observation. March 2010. Department of Earth, Atmospheric and Planetary Sciences, MIT. Boston, MA.

Major Expeditions and Cruises

October 11-18, 2019. St. Petersburg, FL. R/V Point Sur. Exploration and Characterization of Fine-scale Physical-biogeochemical Environment over Deep Coral Reefs on the West Florida Slope using Integrated ROV-lander-sensor Systems. Co-chief Scientist and lead PI.

June 15 – July 4, 2019. In situ mesocosm experiments on particle-triggered CaCO₃ precipitation, Inter-university Institute of Marine Sciences. Eilat, Israel.

Sept 9 – 16, 2017. LUMCON, Chauvin, LA. R/V Pelican. The Role and Mechanisms of Nuclei-induced Calcium Carbonate Precipitation (NICP) in the Coastal Carbon Cycle: A First In-depth Study. Chief Scientist and PI.

Jun 17 – 23, 2016. Woods Hole, MA. R/V Armstrong Science Verification Cruise, South New England Shelf Break. Shelf break processes. Co-PI.

Apr 18 – May 07, 2015. Phuket, Thailand. R/V Chakratong Tongyai, Andaman Sea. Effects of internal waves on water column physics, chemistry and coral reef biology in Andaman Sea. Co-PI.

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- Jan, 2014 – Jul, 2015. Woods Hole, MA. R/V Tioga. Five seasonal cruises in the Gulf of Maine. Ocean Acidification Susceptibility of New Hampshire Coastal Waters. Co-PI.
- May – Oct, 2013. Woods Hole, MA. R/V Tioga. Three seasonal cruises in the Gulf of Maine. Ocean acidification: Are Deep Waters of the Gulf of Maine Already Corrosive to Pteropods? PI and Chief Scientist.
- Aug 09 – Sept 18, 2012. Newport, OR – Los Angeles, CA. R/V New Horizon, North Pacific. Ocean acidification: Horizontal and Vertical Distribution of Thecosome Pteropods in Relation to Carbonate Chemistry in the Northwest Atlantic and Northeast Pacific. Co-PI, Chemistry team leader.
- Aug 07 – Sept 01, 2011. Woods Hole, MA – Woods Hole, MA; R/V Oceanus, North Atlantic. Ocean acidification: Horizontal and Vertical Distribution of Thecosome Pteropods in Relation to Carbonate Chemistry in the Northwest Atlantic and Northeast Pacific. Co-PI, Chemistry team leader.
- Sept 2011. Sampling in the Mackenzie River Delta. Arctic Research Initiative: Towards Long-term Monitoring of the CO₂ System in Arctic Rivers. PI.
- Jun 2010. Sampling in the Mackenzie River Delta. Arctic Research Initiative: Towards Long-term Monitoring of the CO₂ System in Arctic Rivers. PI.
- July 10 – August 04, 2007. Galveston, TX – Boston, MA. R/V Ronald H. Brown. Gulf of Mexico and East Coast Carbon (GOMECC) cruise.
- March 10 – 30, 2006. Honolulu, HI – Kodiak, AK, USA. R/V Thomas G. Thompson. NOAA CLIVAR/CO₂ Repeat Hydrography P16N Cruise in the North Pacific Ocean.
- January 11 – February 24, 2005. Punta Arenas, Chile - Fortaleza, Brazil. R/V Ronald H. Brown. NOAA CLIVAR/CO₂ Repeat Hydrography A16S Cruise in the South Atlantic Ocean.

Conference Papers and Abstracts

(* Supervised students, postdocs, visiting scholars)

- Ringham, M.C.*, **Z.A. Wang**, S. Brook, and M. Jiang. Exploration of fine-scale physical-biogeochemical environment over deep coral reefs on the West Florida slope using integrated ROV-lander-sensor systems. 16th Deep Sea Biology Symposium (Virtual). September 2021
- Ringham, M.C.*, **Z.A. Wang**, F.N. Sonnichsen, S. Lerner, G. McDonald, S. Brook, M. Jiang. A first look at high-resolution, in-situ seawater carbonate chemistry across deep coral reefs using CHANOS II. 2021 OCB Summer Workshop. Virtual. June, 2021.
- Wang, Z.A.**, J. Rheuban, L. Cameron, and J. Grabowski. Assessing the vulnerability of Atlantic sea scallop stocks under future ocean acidification and warming. Scallop Research Share Day, New England Fishery Management Council. Virtual. May 12, 2021.
- Wang, Z.A.**, A.P.M. Michel, T.A. Mooney. Accelerating coastal ocean observing through broadly accessible, low-cost sensor networks. Ocean Visions Summit 2021. Virtual via the Scripps Institution of Oceanography. May 18-21, 2021.

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- Wang, Z. A.** and M.C. Ringham, Channelized Optical System (CHANOS): An In-situ Sensor Technology for High-resolution Measurements of Seawater CO₂ Parameters. Smart Ocean 2020. Virtual via MIT and WHOI, October 2020.
- Hoelscher, C.E., T. Dellapenna, J.H. Churchill, **Z.A. Wang**, and E. Wurgaft. Mapping the Migration Pattern of the Hurricane Harvey Flood Deposit on the Brazos Subaqueous Delta (Poster). Ocean Sciences Meeting, San Diego, CA. Feb 16-21, 2020.
- Wang, Z.A.**, E. Wurgaft, M.C. Ringham, S. Song, T. Dellapenna, J. H. Churchill, T. Rivlin and B. Lazar. The role of particle-triggered calcium carbonate precipitation in the coastal ocean: A significant factor to seawater carbonate chemistry? (Talk). Ocean Sciences Meeting, San Diego, CA. Feb 16-21, 2020.
- Sugar, J.T., M. Omand, A. Adams, K. Katija, **Z.A. Wang**, K. Buesseler, D. Yoerger, I. Cetinic, and H.T. Rossby (Poster). MINIONS: Small, cheap, Lagrangian floats for measurement of the biological carbon pump. Ocean Sciences Meeting, San Diego, CA. Feb 16-21, 2020.
- Ringham, M.C.*, **Z.A. Wang**, F.N. Sonnichsen, S. Lerner, G. McDonald and K. Morkeski. Developing an In-situ Sensor for High-frequency Measurements of Dissolved Inorganic Carbon, *f*CO₂, and pH to Enable Fine-scale Studies of Seawater Carbonate Chemistry (Talk). Ocean Sciences Meeting, San Diego, CA. Feb 16-21, 2020.
- Chen, S., C.P. Ward, **Z.A. Wang** and M.H. Long. PhRePhOx — an in-situ approach to quantifying carbon cycling processes (Poster). Ocean Sciences Meeting, San Diego, CA. Feb 16-21, 2020.
- Cones, S., K. Katija, K.A. Shorter, F. Jensen, D. Mann, P. Afonso, J. Fontes, **Z.A. Wang** and T.A. Mooney. Diel Vertical Migrations and Climb-and-Glide Ascents in Veined Squid (*Loligo forbesi*) (Talk). Ocean Sciences Meeting, San Diego, CA. Feb 16-21, 2020.
- Melrose, C. and **Z.A. Wang**. Climatology of spatial and seasonal patterns of carbonate chemistry parameters on the Northeast U.S. Continental Shelf (Poster). Ocean Sciences Meeting, San Diego, CA. Feb 16-21, 2020.
- Wang, Z. A.**, H. Moustahfid, A. V. Mueller, A. P. M. Michel, M. Mowlem, B. T. Glazer, T. A. Mooney, W. Michaels, J. S. McQuillan, J. C. Robidart, J. Churchill, M. Sourisseau, A. Daniel, A. Schaap, S. Monk, K. Friedman, and P. Brehmer. Advancing Observation of Ocean Biogeochemistry, Biology, and Ecosystems With Cost-Effective in situ Sensing Technologies (Poster). OceanObs'19 Conference. Honolulu, HI. September 16-20, 2019.
- Wang, Z.A.**, M. Ringham, F. Sonnichsen, K. Morkeski, S. Lerner, G. McDonald, and E. Wurgaft. Developing An In-Situ Sensor Technology for High-frequency Measurements of Dissolved Inorganic Carbon, pH, and *p*CO₂ on Mobile Platforms. 4th Global Ocean Acidification Observing Network (GOA-ON) International Workshop. April 14-17 2019. Hongzhou, China.
- Song, S.*, **Z.A. Wang**, M.E. Gonneea, K.D. Kroeger, S.N. Chu, and D. Li. The effects of organic alkalinity on pH and carbonate speciation in coastal waters influenced by intertidal salt marshes. The 4th Global Ocean Acidification Observing Network (GOA-ON) International Workshop. April 14-17, 2019. Hongzhou, China.

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- Tamborski, J., M. Charette, B. Kurylyk, P. Henderson, M. E. Gonneea, K. Kroeger, **Z. A. Wang**. Spatial variability of inorganic carbon export from intertidal salt marshes. Goldschmidt Conference. Aug. 18 – 23, 2019. Barcelona, Spain.
- Wang, Z.A.**, Song, S., M.E. Gonneea, K.D. Kroeger, S.N. Chu, D. Li, and H. Liang. An Ignored Biogeochemical Link between Organic and Inorganic Carbon: Effects of Organic Alkalinity. Gordon Research Conference. July 14-18, 2019. Holderness School, Holderness, NH.
- Kroeger, K.D., Gonneea, M., **Wang, Z.A.**, Ganju, N.K., Pohlman, J.W., Abdul-Aziz, O., Tang, J., Spivak, A., Moseman-Valtierra, S. Salt Marsh Net Ecosystem Carbon Balance: Comprehensive Measurements of the Lateral Flux. CERF Meeting. 2019.
- Wang, Z.A.** Lateral exports of inorganic carbon and alkalinity from tidal salt marshes. PIE-LTER Annual Science Meeting. Woods Hole, MA. Mar. 6-8, 2018.
- Wang, Z.A.**, R. Ji, W. Yu, S. Khokiattiwong, C. Davis, W.G. Zhang, and A. Cohen. Multi-scale effects of internal waves on carbonate chemistry, planktons, and coral reefs in the Andaman Sea. Ocean Sciences Meeting 2018. Portland, OR. Feb 11-16, 2018.
- Wurgaft, E.*, **Z.A. Wang**, M. Ringham, S. Song, T. Dellapenna, J. Churchill and B. Lazar. Nuclei induced CaCO_3 precipitation in the northern Gulf of Mexico. Ocean Sciences Meeting 2018. Portland, OR. Feb 11-16, 2018.
- Ringham, M.*, **Z.A. Wang**, F.N. Sonnichsen, K. Morkeski, S. Lerner, G. McDonald, and E. Wurgaft. Developing an In-situ Sensor for Continuous Measurements of Total CO_2 on Mobile Platforms. Ocean Sciences Meeting 2018. Portland, OR. Feb 11-16, 2018.
- Song, S.*, **Z.A. Wang**, K.D. Kroeger, M.E. Gonneea, D. Li. Contribution and composition of organic alkalinity in export of alkalinity from intertidal salt marshes. Ocean Sciences Meeting 2018. Portland, OR. Feb. 11-16, 2018.
- Najjar, R. et al. Carbon Budget of Tidal Wetlands, Estuaries, and Shelf Waters of Eastern North America. Ocean Sciences Meeting 2018. Portland, OR. Feb 11-16, 2018.
- Wang, Z. A.**, S. Chu, K.D. Kroeger, M.E. Gonneea, and N.K. Ganju. Resolving the Intricacies of Lateral Exports of Inorganic Carbon and Alkalinity from Coastal Salt Marshes (Invited). AGU Fall Meeting 2017. New Orleans, LA. Dec. 11-15, 2017.
- Song, S.*, **Z.A. Wang**, K.D. Kroeger, M.E. Gonneea, D. Li. Alkalinity export from intertidal salt marshes: evaluating the contribution and composition of organic alkalinity. Coastal & Estuarine Research Federation 2017. Providence, RI. Nov. 5-9, 2017.
- Wang, Z. A.**, G. L. Lawson, C. H. Pilskaln, and A. E. Maas. Seasonal Controls of Aragonite Saturation States in an Ocean Acidification Vulnerable Shelf Region – the Gulf of Maine, USA. Gordon Research Conferences, Chemical Oceanography. Colby-Sawyer College, New London, NH. Jul 23 – 28, 2017.
- Wang, Z. A.**, Chu, S. N, Kroeger, K. D., Gonneea, M.E., and Ganju, N. K. Intertidal Salt Marshes as an Important Source of Inorganic Carbon to the Coastal Ocean. OCB Summer Workshop. Woods Hole, MA. Jun 26-29, 2017.

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- Chu, S. N.*, **Z. A. Wang**, K. D. Kroeger, M. E. Gonneea, and N. K. Ganju. Revealing the intricacies of lateral inorganic carbon fluxes from intertidal salt marshes using high-frequency measurements. OCB Summer Workshop. Woods Hole, MA. Jun 26-29, 2017.
- Wang, Z. A.**, Ji, R., Yu, W., Khokiattiwong, S., Davis, C., Zhang, W.G., Barkley, H., Middleton, J., Cohen, A. Multi-scale effects of internal waves on carbonate chemistry and biology in the Andaman Sea. 10th IOC Sub-Commission for the Western Pacific (WESTPAC) International Scientific Conference. Qingdao, China. Apr 17-20, 2017.
- Zhang, W.G., Cohen, A., Davis, C., Ji, R., Khokiattiwong, S., **Wang, Z. A.**, and Yu, W. Internal Waves in the Andaman Sea – Connecting the Open Ocean to Shelf Processes and Coral Reef Biogeochemistry. 10th IOC Sub-Commission for the Western Pacific (WESTPAC) International Scientific Conference. Qingdao, China. Apr 17-20, 2017.
- Wang, Z. A.**, Chu, S. N., Kroeger, K. D., Gonneea, M.E., and Ganju, N. K. How much did we miss? – Intertidal Salt Marshes as an Important Source of Inorganic Carbon to the Coastal Ocean. 2017 ASLO Aquatic Sciences Meeting, Honolulu, HI. Feb 26- Mar 03, 2017.
- Brown, K. A., Peucker-Ehrenbrink, B., Blusztajn, J., Francois, R., Fiske, G., Williams, W., Carmack, E., McLennan, D., Schimnowski, A., Galy, V. and **Wang, Z.A.** 87Sr/86Sr Traces Riverine Inputs to the Canadian Arctic Archipelago. 2017 ASLO Aquatic Sciences Meeting, Honolulu, HI. Feb 26- Mar 03, 2017.
- Wang, Z. A.**, Kroeger, K. D., Ganju, N. K., Gonneea, M.E., and Chu, S. N. Intertidal Salt Marshes as an Important Source of Inorganic Carbon to the Coastal Ocean. 2016 OCB Summer Workshop. Woods Hole, MA. July 25-28, 2016.
- Brown, K. A.*, Williams, W., Carmack, E., McLennan, D., Fiske, G., Francois, R., Galy, V., **Wang, Z.A.**, and Peucker-Ehrenbrink, B. Permafrost Draining Rivers in the Canadian Arctic Archipelago: Biogeochemical Properties and Carbon Export Potential. 11th International Conference on Permafrost. Potsdam, Germany. June 20-24, 2016.
- Jiang, M., Dalglish, F., **Wang, Z.A.**, Elvander, J., and Reed, J. Measurements of Underwater Carbonate Chemistry using a Prototype Hybrid AUV/ROV and Automatic Sensors: A demonstration project. 13th International Coral Reef Symposium. Honolulu, HI. June 19-24, 2016.
- Maas, A.E., Tarrant, A.M., Bergan, A.J., **Wang, Z.A.**, and Lawson, G.L. The Response of the Thecosomatous Pteropod *Limacina retroversa* to CO₂ in the Gulf of Maine: Seasonality and Sensitivity. ICES/PICES 6th Zooplankton Production Symposium. Bergen, Norway. May 9-13, 2016.
- Lawson, G.L., Lavery, A.C., Wiebe, P.H., Bergan, A.J., **Wang, Z.A.**, Maas, A.E., and Copley, N. J. Application of Acoustic, Optical, and Net Sampling Techniques to Understand the Ecology of Thecosomatous Pteropods. ICES/PICES 6th Zooplankton Production Symposium. Bergen, Norway. May 9-13, 2016.
- Wang, Z.A.**, Lawson, G.L., Pilskaln, C.H., and Maas, A.E. Water-column Controls on the Carbonate Cycle and Potential Ocean Acidification Impacts in the Gulf of Maine. 4th International Symposium on the Ocean in a High-CO₂ World. Hobart, Australia. May 03-06, 2016

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- Wang, Z.A.**, Sonnichsen, F.N., Chu, S.N., Bradley, A.M., and Hoering, K.A. Development of Fast Response In-situ Sensors for Simultaneous Measurements of Seawater Carbon Dioxide Parameters. 2016 Ocean Sciences Meeting. New Orleans, LA, US. Feb. 21-26, 2016.
- Wang, Z. A.**, K. D. Kroeger, N. K. Ganju and S. N. Chu. Evaluating the Roles of Intertidal Salt Marshes to the Coastal CO₂ System and Coastal Carbon Budget. 2016 Ocean Sciences Meeting. New Orleans, LA, US. Feb. 21-26, 2016.
- Chu, S.N.*, **Wang, Z.A.**, Kroeger, K.D., and Gonneea, M.E. Alkalinity and inorganic carbon export from intertidal salt marshes. 2016 Ocean Sciences Meeting. New Orleans, LA, US. Feb. 21-26, 2016.
- Pilskaln, C.H., **Wang, Z.A.**, Lawson, G.L., Hayashi, K., and Salisbury, J. Drivers of Water Column Calcium Carbonate Fluxes and Dissolution in the Gulf of Maine: Impacts on the Carbon Cycle. 2016 Ocean Sciences Meeting. New Orleans, LA, US. Feb. 21-26, 2016.
- Anderson L.B.*, Gonneea M.E., **Wang, Z.A.**, and Chu, S.N. Alkalinity export from intertidal salt marshes: evaluating the contribution of non-carbonate species to coastal buffering capacity. 2016 Ocean Sciences Meeting. New Orleans, LA, US. Feb. 21-26, 2016.
- Lawson, G.L., Maas, A.E., **Wang, Z.A.**, Bergan, A.J., Wiebe, P.H., Blanco-Bercial, L., Lavery, A.C., and Copley, N.J. Pteropod ecology and physiology in relation to natural variability in carbonate chemistry. 2016 Ocean Sciences Meeting. New Orleans, LA, US. Feb. 21-26, 2016.
- Maas, A.E., Tarrant, A.M., Bergan, A.J., **Wang, Z.A.**, and Lawson, G. Seasonality and the response of the thecosome pteropod *Limacina retroversa* to CO₂ in the Gulf of Maine. 2016 Ocean Sciences Meeting. New Orleans, LA, US. Feb. 21-26, 2016.
- Reimer, J., Cai, W.J., Noakes, S., Hu, X., Chen, B., **Wang, Z.A.**, Jiang, L., Salisbury, J., Wanninkhof, R.H., Barbero, L., Feely, R.A., Sutton, A., Mathis, J.T., and Sabine, C.L. pCO₂ time series ground truthing and internal consistency at the Gray's Reef mooring (NDBC-41008) in the South Atlantic Bight. 2016 Ocean Sciences Meeting. New Orleans, LA, US. Feb. 21-26, 2016.
- Najjar, R. et al. The carbon budget for coastal waters of Eastern North America. AGU Fall Meeting. San Francisco, CA. Dec 12-16, 2015.
- Brown, K.A.*, Williams, W., Carmack, E., McLennan, D., Pedersen, A., Schimnowski, A., Fiske, G., Galy, V., **Wang, Z.A.**, and Peucker-Ehrenbrink, B. Geochemical Fingerprints Characteristics of Permafrost Draining Rivers in the Canadian Arctic Archipelago. ArcticNet Annual Scientific Meeting. Vancouver, BC, Canada. Dec 7 – 11, 2015.
- Wang, Z.A.**, Gonneea, M.E., Kroeger, K.D., Ganju N.K, and Chu, S. Intertidal Salt Marshes: A Diminishing Source of Buffering Capacity to the Coastal Ocean. Goldschmidt Meeting. Prague, Czech Republic. Aug 16-21, 2015.
- Wang, Z.A.**, Gonneea, M.E., Kroeger, K.D., Ganju N.K, Chu, S., and Hoering, K.H. Intertidal Salt Marshes as an Important Source of Inorganic Carbon and Buffering Capacity to the Coastal Ocean. Chemical Oceanography, Gordon Research Conference. Holderness, NH. Jul 27-31, 2015.

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- Chu, S.N.*, **Wang, Z.A.**, Sonnichsen, F.N., Bradley, A.M., Hoering, K.A., Lanagan, T.M., Hammar, T.R., and Camilli, R. A new in-situ sensor for characterizing full carbonate chemistry in aquatic environments: Development and Application. Chemical Oceanography, Gordon Research Conference. Holderness, NH. Jul 27-31, 2015.
- Wang, Z.A.**, Chu, S., Gonneea, M.E., Kroeger, K.D., and Hoering, K.A. Intertidal Salt Marshes as a Carbon Dioxide and Alkalinity Pump to the Coastal Ocean. 2015 Society of Wetland Scientists Annual Meeting. Providence, RI. May 31 - Jun 4, 2015.
- Kroeger, K.D. Ganju, N.K. **Wang, Z.A.**, Pohlman, J.W. Gonneea, and M.E. Building a Salt Marsh Greenhouse Gas Budget: Lateral Fluxes. 2015 Society of Wetland Scientists Annual Meeting. Providence, RI. May 31 - Jun 4, 2015.
- Wang, Z.A.**, Chu, S.N., Kroeger, K.D, Hoering, K.A., and Gonneea, M.E. 2015. The Paradox of Salt Marshes as a Source of Alkalinity and Low pH, High Carbon Dioxide Water to the Ocean. ASLO Aquatic Sciences Meeting. Granada, Spain. February 22 – 27, 2015.
- Chu, S.N.*, **Wang, Z.A.**, Sonnichsen, F.N., Bradley, A.M., Hoering, K.A., Lanagan, T.M., Hammar, T.R., and Camilli, R. 2015. A high resolution, in situ sensor to simultaneously measure total dissolved inorganic carbon and pH in aquatic environments. ASLO Aquatic Sciences Meeting. Granada, Spain. February 22 – 27, 2015.
- Wang, Z.A.**, Hoering, K.A., and Chu, S.N. Riverine CO₂ and dissolved inorganic carbon fluxes: Organic carbon titration effects and estimate uncertainties. The 5th North America Carbon Program PI Meeting. Washington D.C. Jan. 26 – 29, 2015.
- Wang, Z.A.**, Kroeger, K.D., Green, A., Hoering, K.A., Pohlman, J.W., Ganju, N., Moseman-Valtierra, S., and Tang, J. 2014. Salt Marsh Carbon Budgets: Biogeochemistry of the CO₂ System and Tidal Exchanges of Inorganic Carbon. Joint Aquatic Sciences Meeting. Portland, OR. May 18-23, 2014.
- Kroeger, K.D., Pohlman, J.W., Ganju, N., Spivak, A., **Wang, Z.A.**, Green, A., Brooks, T.W., Baldwin, S., Moseman-Valtierra, S., and Tang, J. 2014. Salt Marsh Carbon Budgets: The Role of Tidal Exchanges of Dissolved and Particulate Organic Carbon. Joint Aquatic Sciences Meeting. Portland, OR. May 18-23, 2014.
- Wang, Z.A.**, Sonnichsen, F.N., Hoering, K.A., and Chu, S.N. 2014. A Buoy-based Sensor Technology for Simultaneous, In-situ Measurements of Seawater pH and Total Dissolved Inorganic Carbon. 2014 Ocean Sciences Meeting. Honolulu, HI. Feb. 23-28, 2014.
- Chu, S.N.*, **Wang, Z.A.**, and Hoering, K.A., and Lawson, G.L. 2014. Anthropogenic Carbon Increase in the Northeast Pacific Over the Past Decade. 2014 Ocean Sciences Meeting. Honolulu, HI. Feb. 23-28, 2014.
- Sanchez, A.*, Signell, J., **Wang, Z.A.**, and Kroeger, K.D. 2014. Calibration of a CO₂ and pH Sensor: Enabling the Measurement of Blue Carbon Flux. 2014 Ocean Sciences Meeting. Honolulu, HI. Feb. 23-28, 2014.
- Wang, Z. A.**, Pilskaln, C. H., Maas, A., Hayashi, K., and Lawson, G. L. 2013. Coastal Ocean Acidification in the Gulf of Maine: Potential Drivers and Impacts. Ocean Acidification PI Workshop. Sept 18 - 20, 2013. Washington DC.

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- Lawson, G.L., **Wang, Z. A.**, Wiebe, P. E., Lavery, A. C., Copley, N. J., Chu, S., and Hoering, K. A. 2013. Ocean Acidification and Pteropods in the Northwest Atlantic and Northeast Pacific. Ocean Acidification PI Workshop. Washington DC. Sept 18 - 20, 2013.
- Maas, A. E. *, Lawson, G. L., **Wang, Z. A.**, and Tarrant, A. M. 2013. ‘RNA-seq’ing the Effects of CO₂ on Sea Butterflies: Physiology and Gene-expression Studies of Thecosome Pteropods. Ocean Acidification PI Workshop. Washington DC. Sept 18 - 20, 2013.
- Wang, Z. A.**, Wanninkhof, R., Cai, W. J., Byrne, R. H., Hu, X. P., Peng, T. H. and Huang, W. J. (2013). The Marine Inorganic Carbon System along the Gulf of Mexico and Atlantic Coasts of the United States: Insights from a Transregional Coastal Carbon Study. 9th International Carbon Dioxide Conference. Beijing, China. June 3-7, 2013.
- Chu, S. *, **Wang, Z. A.**, and Hoering, K. Ocean Acidification in the Northeast Pacific Oxygen Minimum Zone. ASLO 2013 Aquatic Sciences Meeting. New Orleans, LA, USA. February 17 – 22.
- Wang, Z.A.**, Hoering, H., and Lawson, G. 2012. Ocean Acidification in the Northwest Atlantic between 2003 and 2011. Third International Symposium on the Ocean in a High CO₂ World. Monterey Bay, CA, USA. September 24-27, 2012.
- Maas, A.E. *, **Wang, Z.A.**, and Lawson, G.L. 2012. Impact of Ocean Basin on Pteropod Exposure and Response to High CO₂ and Low O₂. Third International Symposium on the Ocean in a High CO₂ World. Monterey Bay, CA, USA. September 24-27, 2012.
- Almeida, J.L. Ward, B., Shutler, J., Gentemann, C., **Wang, Z.A.**, and Bresnahan, P.J. 2012. On the Inclusion of the Ocean’s Diurnal Warming Effect for the Global Air-sea Net Budget Estimation. 2012 SOLAS Open Science Conference. Cle Elum, WA, USA., May 07 – 10, 2012.
- Wang, Z.A.** and Hoering, K. 2012. Temporal and Spatial Variabilities of the Riverine Inorganic Carbon System in the Mackenzie River and Beyond. 2012 Ocean Science Meeting. Salt Lake City, UT, USA. February 19 – 24, 2012.
- Hoering, K. *, **Wang, Z.A.**, Luttazi, C., and Lawson, G. 2012. Direct Observation of Ocean Acidification in the Northwest Atlantic between 2003 and 2011. 2012 Ocean Science Meeting. Salt Lake City, UT, USA. February 19 – 24, 2012.
- Edebeli, J. * and **Wang, Z.A.** 2012. Simplified Spectrophotometric Method for Measuring Sea Water Alkalinity. 2012 Ocean Science Meeting. Salt Lake City, UT, USA. February 19 – 24, 2012.
- Wang, Z. A.**, Wanninkhof, R., Peng, T.-H., Cai, W.-J., Hu, X., and Byrne, R.H. 2011. The Marine Inorganic Carbon System along the Gulf of Mexico and Atlantic Coast of the United States: Shelf-ocean exchange and Ocean Acidification Status. 2011 AGU Fall Meeting. San Francisco, CA, USA. December 5 – 9, 2011.
- Wang, Z. A.**, Wanninkhof, R., Cai, W.-J., Hu, X., Peng, T.-H., and Byrne, R.H. 2010. Distributions of the CO₂ System along the US Atlantic and Gulf of Mexico Coast. 2010 Ocean Science Meeting. Portland, OR, USA. February 22 – 26, 2012.

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