

# Lin Zhang, Ph.D.

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## Positions Held

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| 2016 – Present | Assistant Professor in Chemical Oceanography, Department of Physical and Environmental Sciences, Texas A&M University – Corpus Christi, Corpus Christi, TX, USA |
| 2013 – 2016    | Research Scientist, University of Massachusetts Lowell, Lowell, MA, USA   |
| 2012 – 2013    | Post-doctoral Investigator, Woods Hole Oceanographic Institution, Falmouth, MA, USA   |

## Education

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| 2012 | Ph.D., Graduate School of Oceanography, University of Rhode Island, Narragansett, RI, USA         |
| 2007 | M.Sc., School of Marine Science and Technology, University of Massachusetts, New Bedford, MA, USA |
| 2003 | B.Sc., School of Chemistry and Chemical Engineering, Ocean University of China, Qingdao, China    |

## Publications

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‡ - indicates graduate student author under my supervision

\* - indicates corresponding author

### *Peer Reviewed Journal Articles*

1. **Lin Zhang\***, Liu, Xiao‡, Khrys Duddleston, Hines, Mark. The effects of pH, temperature, and DOM on anaerobic carbon mineralization and methanogenic efficiency in ombrotrophic and minerotrophic Alaskan peatlands. **Aquatic Geochemistry**. In press.
2. Yali Li‡, Rainer Lohmann, Xinqing Zou, **Lin Zhang\***. Air-water exchange and distribution of organochlorine pesticides in the atmosphere and surface water of the open Pacific. **Environmental Pollution**. In revision.
3. Dingnan Lu, Xiaoqi Zhang, Onur G Apul, Xiao Liu‡, **Lin Zhang**, David Ryan. **2019**. Optimization of biomethane production from anaerobic Co-digestion of microalgae and septic tank sludge Biomass and Bioenergy. 127, 105266
4. Chengjun Wang, Lidong Cheng, **Lin Zhang**, Yuegang Zuo., **2019**. Graphene oxide-based molecularly imprinted polymers modified with  $\beta$ -cyclodextrin for selective extraction of di (2-ethylhexyl) phthalate in environmental waters. **Journal of Separation Science** **2019**;1–9.
5. Dingnan Lu, Jackie Zhang, Xiao Liu‡, **Lin Zhang**, Mark Hines., **2018**. Sustainable Microalgae Cultivation by using Anaerobic Centrate and Biogas from Anaerobic Digestion. **Algal Research**, 35, 115-124

6. **Lin Zhang.**, Thibodeaux, Louis., Jones, Lee., Lohmann, Rainer. **2015**. Simulation of Observed PCBs and Pesticides in the Water Column during the North Atlantic Bloom Experiment. **Environ. Sci. Technol.** 49, 13760–13767.
7. **Lin Zhang.**, Dickhut, Rebecca, DeMaster, Dave, Lohmann, Rainer. **2013**. PCBs and OCPs in the Western Antarctic Peninsula Sediments and Benthic Deposit Feeders. **Environ. Sci. Technol.** 47, 5643–5651.
8. **Lin Zhang.**, Bidleman, Terry, Perry, Mary Jane, Lohmann, Rainer. **2012**. The Fate of Chiral and Achiral Organochlorine Pesticides in the North Atlantic Bloom Experiment. **Environ. Sci. Technol.** 46, 8106-8114.
9. **Lin Zhang.** and Lohmann, Rainer. **2010**. Air-Water Exchange and Short-term Variations of PCBs and HCB over the Remote Pacific. **Environ. Sci. Technol.** 44, 3832-3838.
10. **Lin Zhang.** \* and Altabet, Mark. **2008** Amino Group-Specific Natural Abundance N Isotope Ratio Analysis in Amino Acids. **Rapid Commun. Mass Spectrom.** 22: 559–566.
11. **Lin Zhang.**, \* Altabet, M., WU, T., Hadas, O. **2007** Sensitive Measurement of  $\text{NH}_4^+$   $^{15}\text{N}/^{14}\text{N}$  ( $\delta^{15}\text{NH}_4^+$ ) at Natural Abundance Levels in Fresh and Saltwaters. **Analytical Chemistry.** 79, 5297-5303.

### *Peer Reviewed Journal Articles - In Preparation*

1. **Zhang, L.**, Charlotte Lee., Chongxiao Ji., Rupsa Roy, Mark Altabet., High-precision measurement of compound specific amino acids  $\delta^{15}\text{N}$  values: A new approach coupling high-performance ion-exchange chromatography purification and purge-trap isotope ratio mass spectrometry. In preparation.
2. **Zhang, L.**, Hines, Mark., Mitchell, Edward A.D., Relationships among Testate Amoebae, Surface Vegetation, Methanogenic Biogeochemistry along the Fen-Bog Gradient in Alps. In preparation.
3. **Zhang, L.**, Chanton, Jeff., Hines, Mark. Link among Surface Vegetation, Underlying Microbial Communities, and Methanogenic Pathways in Arctic and Temperate wetlands. In preparation.
4. **Zhang, L.**, Barkay, Tamar., Krabbenhoft, Dave, Hines, Mark. Microbial Mercury Methylation Pathways in Northern Wetlands. In preparation.

### **Grants, Honours and Awards**

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#### *External Grants Awarded – (Zhang share in brackets for multi-institution grants)*

\$99,560	PI, <b>Texas General Land Office</b> . Assess nonpoint source Nitrogen contribution to the Texas Coastal Zone from septic systems. 2019-2021.
\$539,774 (\$375,085)	PI, <b>National Science Foundation</b> . Collaborative research: Using individual amino acids N isotopes in sinking particles and surficial sediments to reconstruct euphotic zone N sources and trophic structure. 2018 – 2021.
\$98,877	PI, <b>Texas General Land Office</b> . Assessment and Economic Valuation of Nitrogen Mitigation in Texas Coastal Bend Restored Marsh. 2018 – 2020.
\$ 220,000	Co-PI, <b>National Science Foundation</b> . MRI: Acquisition of a GC triple quadrupole mass spectrometer for Environmental and Biogeochemical research. 2018.

#### *Internal Grants Awarded*

\$4,986	PI, <b>Texas Research and Development Fund – Research Enhancement Grant.</b> Develop new and robust methods to measure the compound and position specific stable carbon isotopes of the organic precursors of methane. 2017 – 2018.
\$27,896.50	PI, <b>Texas A&amp;M University-Corpus Christi Division of Research and Innovation-Research Equipment and Infrastructure Grant.</b> Acquisition of a discrete analyzer for nutrient analysis. 2018-2019

### *Fellowships, Honors and Awards*

2012	EPA ORISE post-doctoral fellow (declined).
2012	Full travel support and acceptance to NCAR Community Earth System Model Tutorial \$2000
2012	Travel Grant from NSF Office of Polar Programs. \$2000
2012	Travel Grant from NSF EPSCoR. \$1000
2012	Registration fund award from XXXII Scientific Committee on Antarctic Research Conference. \$1000
2011	Student Training Exchange Opportunity Award from North American SETAC. \$1000
2010	Travel Grant from NSF EPSCoR. \$1000
2010	Travel grant award and acceptance to NSF workshop “Preparing for an Academic Career in the Geosciences” \$1000
2010	Registration fund awards Gordon Research Conference Environ. Sciences: Water. \$800
2010	Grant award. Student Mobility Support Program, Government of Canada. \$4000
2009	University of Rhode Island Enhancement of Graduate Research & Scholarship Grant. \$1000
2009	Travel grant award from SETAC. \$1000
2008	Registration fund awards Gordon Research Conference Environ. Sciences: Water. \$800
2006	Registration fund awards from AGU fall meeting “BASIN” session. \$500
2001	Outstanding Student award, Ocean University of China

### **Student Mentorship**

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Wing-Man (Charlotte) Lee, Ph.D. student 2018-2023  
 Lydia Hayes, M.S. student 2018-2020  
 Alex Berner, M.S. student (Committee Member)  
 Christian Cunningham M.S. student (Committee Member)  
 Xiao Liu, Ph.D. student at UMass Lowell. Expected at Graduate 2020. Visiting TAMUCC in 2018.  
 Chongxiao Ji, visiting Ph.D. student from Ocean University of China. 2018-2019.  
 Yali Li, visiting Ph.D. student from Nanjing University. 2018-2019.  
 Fuqiang Wang, visiting Ph.D. student from East China Normal University. 2017-2018.  
 Yuling Wu, visiting Ph.D. student from Xiamen University. 2017-2018.  
 Wangwang Ye, visiting Ph.D. student from Ocean University of China. 2016-2017.

## Teaching

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### *Lecturer*

**CHEM 1411-004, 005, 009 General Chemistry I (Fall 2019)** - Texas A&M University – Corpus Christi

**CMSS6307 Coastal and Marine Systems (Spring 2019)** - Texas A&M University – Corpus Christi

**CHEM 1411-004, 005 General Chemistry I (Fall 2018)** - Texas A&M University – Corpus Christi

**CMSS6307 Coastal and Marine Systems (Spring 2018)** - Texas A&M University – Corpus Christi

**CHEM 1412-001, 002 General Chemistry II (Fall 2017)** - Texas A&M University – Corpus Christi

**CHEM 1411-001 General Chemistry I Lab (Spring 2017)** - Texas A&M University – Corpus Christi

**81.423/81.523, Biology of Global Change (Fall 2015)**- University of Massachusetts-Lowell

### *Guest Lecturer*

**OCG 523 Organic Geochemistry of Natural Waters** – University of Rhode Island

### *Graduate Teaching Assistantships*

**Weather for Daily Living** - University of Rhode Island

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## Presentations

### *Invited Presentations*

**Zhang, L.** 2016. Microbial Diversity Seminar. **Olin College**, Massachusetts. Examining the relationship between trophic status and methane production pathways in Alaskan peatlands using stable isotopes and molecular techniques

**Zhang, L.** 2010. Hazard Pollutants Seminar. **Environment Canada, Toronto**. Cycling of PCBs and Organochlorine Pesticides in the Remote Ocean.

### *Contributed Papers*

#### **Underscore indicates student under my supervision**

1. Lydia Hayes, Rosario Martinez, Rae Mooney, Katie Swanson, Lauren Williams, and **Lin Zhang**. **2019**. Seasonal Patterns of Nitrogen Removal in Restored and Natural Wetlands Influenced by Wastewater Along the Texas Coast. In **AGU Fall Meeting Abstracts**.
2. **Lin Zhang**, Wingman (Charlotte) Lee, Chongxiao Ji, Rupsa Roy, Mark Altabet. **2019**. A new approach coupling ion-exchange chromatography purification and off-line conversion of individual amino acids to N<sub>2</sub>O for robust δ<sup>15</sup>N analysis. In **AGU Fall Meeting Abstracts**.
3. Lydia Hayes, Rosario Martinez, Rae Mooney, Katie Swanson, Lauren Williams, and **Lin Zhang**. **2019**. Assessment of Seasonal Patterns on Nitrogen Mitigation in Wastewater Influenced Restored and Natural Wetlands Along the Texas Coast. **Soil Science Society of America Annual Meetings**.
4. Lydia Hayes, Lauren Williams, **Lin Zhang**. **2019**. Assessment and economic valuation of nitrogen mitigation ecosystem services in restored wetlands of the Texas coastal bend. **Coastal Bend Bays and Estuaries Issue Forum**.

5. Chongxiao Ji, Mark Altabet, Wingman Lee, Rupsa Roy, and **Lin Zhang**. 2019. Intramolecular nitrogen isotope analysis of poly-nitrogenous and heterocyclic amino acids. **Gordon Research Conference-Chemical Oceanography**.
6. Wingman Lee, Mark Altabet, Chongxiao Ji, Rupsa Roy, and **Lin Zhang**. 2019. Sensitive measurements of Nitrogen Isotope Ratios in Glutamic Acid and Phenylalanine from various sample matrices. **Gordon Research Conference-Chemical Oceanography**.
7. **Lin Zhang**, Wingman Lee, Chongxiao Ji, Rupsa Roy, and Mark Altabet. 2019. Compound Specific N Isotope Analysis of Hydrolyzed Amino Acids in Surface Sediment Samples. **ASLO 2019**
8. Rachel E. Weisend, Susan McGuire, Brooke Denney, **Lin Zhang**, Brandi Kiel Reese. 2019 Seasonal and diurnal variation of methane flux in mangrove ecosystems. **ASLO 2019**
9. Xiao Liu, Mark E Hines, **Lin Zhang**. 2018 The effects of pH, temperature, and DOM on anaerobic carbon mineralization and methanogenic efficiency in ombrotrophic and minerotrophic Alaskan peatlands. In **AGU Fall Meeting Abstracts**.
10. **Lin Zhang**, Mark Altabet, James McClelland, Ryan Hladyniuk, and Ben Walther. 2018 Investigate the effects of hypoxia on trophic positions of croakers in the northern Gulf of Mexico using  $\delta^{15}\text{N}$  in individual amino acids. **Ocean Sciences Meeting**.
11. **Lin Zhang**, Xiao Liu, Lauren Langford, Jeff Chanton, Spencer Roth, Jeffra Schaefer, Tamar Barkay, and Mark Hines 2017. Methanogenic pathways in Alaskan peatlands at different trophic levels with evidence from stable isotope ratios and metagenomics. In **AGU Fall Meeting Abstracts**
12. **Lin Zhang**, Xiao Liu, Jeff Chanton, Tamar Barkay, and Mark Hines 2017. Methanogenic pathways in Alaskan peatlands at different trophic levels with evidence from stable isotope ratios and metagenomics. **11th International Workshop on Methane Hydrate Research and Development**.
13. **Lin Zhang**, Wangwang Ye, and Mark Altabet. 2017. Applying Compound Specific Nitrogen Isotope Analysis of Amino Acids in Studying Aquatic Food Web Structures and Diagenesis of Sedimentary Organic Nitrogen. **Gordon Research Conference-Chemical Oceanography**.
14. Mark E. Hines, **Lin Zhang**, Xiao Liu, Tamar Barkay, Jeffra K. Schaefer, David P. Krabbenhoft, Brett A. Poulaine, George R. Aiken. 2017. Changing Pathways of Mercury Methylation Along Trophic Gradients in Northern Wetlands. 13<sup>th</sup> International Conference on Mercury as a Global Pollutant.
15. **Lin Zhang**, Wangwang Ye, and Mark Altabet. 2017. Compound Specific Nitrogen Isotope Analysis of Amino Acids in Studying Diagenesis of Sedimentary Organic Nitrogen and Trophic Ecology. Humboldt Colloquium.
16. **Lin Zhang**, Wangwang Ye, and Mark Altabet. 2017. Compound/Position Specific N Isotope Analysis in Amino Acids and its Application in Paleoceanography. 2017. Xiamen\_XMAS III.
17. Mark E. Hines, **Lin Zhang**, Xiao Liu, Tamar Barkay, Jeffra K. Schaefer, David P. Krabbenhoft, Brett A. Poulaine, George R. Aiken. 2016. Effects of vegetation composition, microbial populations on mercury methylation pathways in Alaskan peatlands. In **AGU Fall Meeting Abstracts**
18. **Zhang, L.**, Liu X., Langford L, Chanton J, Hines ME. 2016. The dynamics of methane emissions in Alaskan peatlands at different trophic levels. In **AGU Fall Meeting Abstracts**
19. **Zhang, L.**, Sidelinger, W., Liu, X., Varner, R., Hines, M., 2015 Relationship between surface vegetation species pattern, trophic level, and methanogenic pathways in Alaskan peatlands. American Geophysical Union Annual Conference.
20. Hines, M., **Zhang, L.**, Barkay, T., Schaefer, J., Krabbenhoft, D., Aiken, G. 2015. Mercury Trophic Status Controls Mercury Methylation Pathways in Northern Peats. American Geophysical Union Annual Conference.
21. Krabbenhoft, D., Hines, M., **Zhang, L.**, Barkay, T., Schaefer, J., Aiken, G. 2015. Mercury Methylation in Alaskan Peatlands Spanning a Large Range of Trophic Structure. American Geophysical Union Annual Conference.
22. **Zhang, L.**, Liu, X., Sampath, S., Sidelinger, W., Wang, Y., Krabbenhoft, D., Barkay, T., Schaefer, J., Hines, M., 2015. Mercury methylation by syntrophs and methanogens in peatlands. 250th ACS National Meeting.

23. Hines, M., **Zhang, L.**, Sampath, S., Hu, R., Barkay, T., **2014**. Effects of Trophic Status on Mercury Methylation Pathways in Peatlands. American Geophysical Union Annual Conference.
24. **Zhang, L.**, Sidelinger, W., Shu, H., Varner, R., Hines, M., **2014**. Linkage among Vegetation, Microbes and Methanogenic Pathways in Alaskan Peatlands. American Geophysical Union Annual Conference.
25. Knapp, A., van der Heyde, R., Sheets, M., **Zhang, L.**, Wang, Y., Liu, X., Slikas, B., Amaral-Zettler, L., Huang, J. 2014 Timecourse Analysis of Photosynthetic Microbial Communities that Degrade Cellulose and Fix Nitrogen. American Geophysical Union Annual Conference.
26. **Zhang, L.**, Varner, R., Barkay, T., Hines, M., **2014**. Microbial Mercury Methylation and Methane Production Pathways in Temperate and Arctic Wetlands. Gordon Research Conference, Environmental Sciences: Water.
27. McCalley, Carmody., **Zhang, L.**, Varner, R., Hines, M. **2014**. Investigating Northern Peatland Methane Dynamics by Synthesizing Measurements, Remote Sensing and Modeling from Local to Regional to Continental Scales. NSF Macrosystem Biology PI Meeting
28. **Zhang, L.**, Lohmann, R., Bidleman, Terry., Thibodeaux, Louis., and Perry, Mary Jane. **2012**. The Fate of Chiral and Achiral Organochlorine Pesticides in the North Atlantic Bloom Experiment. Gordon Research Conference, Environmental Sciences: Water.
29. **Zhang, L.**, Lohmann, R., and Dickhut, Rebecca. **2011**. Partitioning of Persistent Organic Pollutants between Sediments and Benthic Deposit Feeders in Western Antarctic Peninsula. SETAC North America 32nd annual meeting.
30. **Zhang, L.**, Lohmann, R., and Thibodeaux, Louis. **2011**. Persistent Organic Pollutants in the North Atlantic Bloom Experiment. SETAC North America 32nd annual meeting.
31. **Zhang, L.** and Lohmann, R. **2010**. Persistent Organic Pollutants in the Antarctic Sediments and Benthic Macrofauna. SETAC North America 31st annual meeting.
32. **Zhang, L.** and Lohmann, R. **2010**. Organochlorine Pesticides in the Surface Ocean - Lower Atmosphere of the Remote Pacific. SETAC North America 31st annual meeting.
33. **Zhang, L.** and Lohmann, R. **2009** Air-water Exchange and Short-term Variations of PCBs and HCB over the Remote Pacific. SETAC North America 30th annual meeting. Platform presentation
34. Lohmann, R.; **Zhang, L.**; Nizzetto, L.; Gioia, R.; Jones, K.C.; Dachs, J.; Temme, C. **2008** Global Transport and Rate of POPs – an Oceanic Perspective. SETAC North America 29th annual meeting.
35. **Zhang, L.** and Lohmann, R. **2008**. Atmospheric Chemistry and Air-Water Exchange of Polychlorinated Biphenyls in the Pacific. Gordon Research Conference, Environmental Sciences: Water.
36. **Zhang, L.** and Altabet, M. **2007**. A New Method for Evaluating and Correcting for Diagenetic Influence on Sediment  $\delta^{15}\text{N}$  Paleo-records. 9th International Conference on Paleoceanography.
37. **Zhang, L.** and Altabet, M. **2007**. Intramolecular Natural Abundance N Isotope Analysis in Amino Acids. 234th ACS National Meeting & Exposition.
38. **Zhang, L.**, Altabet, M., Wu, T., Hadas, O. **2006**. A robust method for ammonium nitrogen isotopic analysis in freshwater and seawater at natural abundance levels. AGU Fall Meeting.

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## Professional Service

### *Peer-Reviewer*

**Funding agencies:** National Science Foundation, Israel Science Foundation

**Journals:** Environmental Science and Technology, Analytical Chemistry, Environmental Pollution Trends in Analytical Chemistry, Environmental Toxicology and Chemistry, Atmospheric Environment, Science of the Total Environment, Rapid Communication in Mass Spectrometry

Environmental Science: Processes & Impacts, Jacobs Journal of Environmental Science, American Journal of Analytical Chemistry, Continental Shelf Research, Journal of Oceanography and Marine Research, Jacobs Journal of Environmental Science, Jacobs Journal of Civil Engineering, Environmental Science and Pollution Research, Environmental Risk Assessment and Remediation Chemosphere, Journal of Chromatography A, Journal of Climatology & Weather Forecasting, Journal of Fertilizers & Pesticides, Journal of Marine Science & Research Development, GCA

## **Professional Societies**

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Society of Environmental Toxicology and Chemistry (SETAC)  
American Chemical Society (ACS)  
American Geophysical Union (AGU)  
Association for the Science of Limnology (ASLO)

## **Cruise Experience**

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05/01/2008-05/21/2008 R/V Knorr, North Atlantic Bloom Experiments  
11/08/2006-11/09/2006 R/V Patricia Lynn, to Long Island Sound,  $\delta^{15}\text{N-NO}_2^-$  measurement  
08/08/2005-08/09/2005 R/V John Dempsey, to Long Island Sound  
03/31/2003-04/16/2003 R/V HaiJian11, to Yellow Sea, China