

## **Tianyin Ouyang**

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### **EDUCATION**

*University of Delaware* September 2020 – Present  
Ph.D. of Marine Science/Chemical Oceanography GPA 3.96  
Dr. Andrew S. Wozniak, advisor

*University of Maryland, College Park* May 2020  
Bachelor of Science, Chemistry GPA 3.7  
Bachelor of Education, Secondary Science Education

### **APPOINTMENTS/ WORK EXPERIENCES**

Fall 2023 Teaching Assistant, MAST407 Class, School of Marine Science and Policy, University of Delaware

2020 – present Research Assistant, Wozniak Marine Organic Geochemistry Laboratory, School of Marine Science and Policy, University of Delaware

Winter & Spring 2020 Student Teacher Internship, Honors Chemistry, Eleanor Roosevelt High School, Greenbelt, Maryland

Fall 2019 Student Teacher Internship, Environmental Sciences, Buck Lodge Middle School, Adelphi, Maryland

2019 – 2020 Undergraduate Research Internship, Agroecology Laboratory, Department of Plant Science and Landscape Architecture, University of Maryland

Fall 2019 Teaching Assistant, CHEM272 Class, Department of Chemistry and Biochemistry, University of Maryland

2018 – 2019 Research Assistant, Department of Civil and Environmental Engineering, University of Maryland

2017 – 2019 Student Project Assistant, Maryland Neuroimaging Center, University of Maryland

2018 – 2019 Terrapin Teacher Internship, College of Education, University of Maryland

2016 – 2017 First-Year Undergraduate Student Researcher, First-Year Innovation and Research Experience Program, University of Maryland

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### **PEER-REVIEWED PUBLICATIONS**

1. Czarnecki, J.I., D.F. Levia, J.R. Scudlark, **T. Ouyang** & A.S. Wozniak (2023) Regional Sources and Seasonal Variability of Rainwater Dissolved Organic and Inorganic Nitrogen at a Mid-Atlantic, USA Coastal Site. *JGR Biogeosciences* 128(2), e2022JG007056, <https://doi.org/10.1029/2022JG007056>.
2. Weissman, D.T., **T. Ouyang** & K.L. Tully (2021) Saltwater intrusion effects nitrogen, phosphorus, and iron transformations under oxic and anoxic conditions: an incubation experiment. *Biogeochemistry* 154, 451-469, <https://doi.org/10.1007/s10533-021-00796-6>.
3. **Ouyang, T.**, D.S. Weissman & K.L. Tully (2020) Saltwater Intrusion Iron and Phosphorus from Agricultural Soils. *DRUM*, <https://doi.org/10.13016/0r8m-855d>.

In-reviewing Process:

1. **Ouyang, T.**, A.S. Wozniak & A.M. McKenna [in preparation] Comparison of dissolved organic matter characteristics using negative and positive mode Fourier-transform ionization cyclotron resonance mass spectrometry, Murderkill River Estuary
2. **Ouyang, T.**, A.S. Wozniak & A.M. McKenna (2023) Dissolved organic matter dynamics in the Murderkill River Estuary: The integrated role of discharge, season, and land use/land cover, *Frontiers in Environmental Science* [manuscript submission Fall 2023]

**LEADERSHIP & ORGANIZATIONS**

2023 – Present	<b>Mentorship Program Chair</b> , Steering Committee Member, Society of Woman in Marine Science (SWMS), Massachusetts, USA
2023 – Present	<b>Working Group #1 Leader</b> , Citizen Advisor Committee Member, Center for the Inland Bays, Delaware, USA
2023 – Present	<b>Academic Council Student Representative</b> , College of Earth, Ocean, and Environment (CEOE), University of Delaware
2021 – Present	<b>SWMS UD Chapter Co-Chair</b> , School of Marine Science and Policy, University of Delaware
2021 – 2022	<b>Student Senator*</b> , Graduate Student Government, University of Delaware [*only can serve up to two semesters per each selected graduate student]
2019	<b>Student Representative</b> , College of Education, University of Maryland

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Other professional societies:

2022 – Present	Student Member, American Geophysical Union
2021 – Present	Student Member, Association for the Sciences of Limnology and Oceanography
2021 – Present	Student Member, Asian Americans and Pacific Islanders in Geosciences
2017 – Present	Student Member, American Chemical Society

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Community services/ teachings:

2023 – Present	<b>Cat Enrichment and Adoption Volunteer</b> , Brandywine Valley SPCA, Georgetown, Delaware
2020 – Present	<b>Undergraduate Research Mentor</b> , Wozniak Marine Organic Geochemistry Laboratory, University of Delaware, Lewes, Delaware
2018	<b>Student Participant*</b> , Work for Change Program, Leadership & Community Service-Learning Program, College Park, Maryland [*only selected outstanding students invited to participate]
2017 – 2018	<b>Volunteer Curriculum System Director</b> , I.L.E.A.D Success Program, Student UMD Chapter, College Park, Maryland

Ad-hoc Outreach Activities:

*Since admitted to University of Delaware*

- Volunteer, 2023 Coast Day, Lewes, Delaware, demonstration on salt marsh biogeochemistry
- Volunteer instructor, for microbial demonstration and saltmarsh walk for high students involved in Biden Government Summer 2023 on University of Delaware – Lewes campus
- Volunteer, event set-up at Water Family Fest and Native Plant Sale 2023

- Volunteer judges for 2022 k-5 STEM fair held by Sussex County STEM Alliance, Lewes Public Library
- Volunteer essay contest judge for 2021 & 2022 Delaware Coastal Day (online)
- Volunteer for 2021 Chesapeake Bay Bowl (online) as a room runner
- Served as a monthly volunteer for Food Bank of Delaware in Milford, DE

### **AWARDS & SCHOLARSHIP**

1. Student Travel Award (\$400) for ACS spring 2024 conference, School of Marine Science and Policy, University of Delaware
2. First Place Poster Presentation (\$20), 2022 CEOE Symposium, University of Delaware
3. Third Place Poster Presentation (\$25), 2021 Delaware Environmental Institute Symposium, University of Delaware
4. Maryland Summer Scholarship (\$5,000), Maryland Undergraduate Research Program
5. University of Maryland Dean's List of 2018 – 2019
6. Work for Change Scholarship (\$500+), University of Maryland

### **PRESENTATIONS AT CONFERENCES, SYMPOSIA, WORKSHOPS**

*Since admitted to the University of Delaware*

1. **Ouyang, T.**, H. Michael, E.S. Bacmeister & A.S. Wozniak (2024) Submarine groundwater dissolved organic matter characteristics along salinity gradients in a shallow, mid-Atlantic, USA coastal embayment [Poster Presentation]. American Chemistry Society Spring 2024 Meetings, New Orleans, Louisiana
2. **Ouyang, T.** (2023) Spotlight: How does groundwater impact the water quality behind scenes? [Oral Presentation in Pitch Format], Pitch 90, DENIN, University of Delaware – Newark Campus
3. **Ouyang, T.** (2023) Dissolved organic matter dynamics in riverine and estuarine systems [Oral Presentation], 2023 Research Experience for Undergraduate Student Seminar, University of Delaware
4. **Ouyang, T.**, A.M. Mckenna & A.S. Wozniak (2023) The Integrated Roles of River Discharge, Seasonality, and Land Use/Land Cover on Dissolved Organic Matter Dynamics in the Murderkill River Estuary, DE [Oral Presentation], 4<sup>th</sup> Annual Earth System Observations & Modeling Graduate Symposium, George Mason University, Fairfax MD, USA.
5. **Ouyang, T.**, A.M. Mckenna & A.S. Wozniak (2023) The Integrated Roles of River Discharge, Seasonality, and Land Use/Land Cover on Dissolved Organic Matter Variations in the Murderkill River Estuary, DE [Poster Presentation], DENIN Research Symposium, University of Delaware – Newark Campus.
6. Ukropec, J. & **T. Ouyang** (2023) Characteristics of Horizontal and Vertical DOM in Wharton's Bluff [Oral Presentation], 2023 Marine Sciences Summer Intern Presentations, University of Delaware
7. Gutkowski, N.M., **T. Ouyang** & A.S. Wozniak (2023) Spatial and Tidal Dynamics of Dissolved Organic Matter in the Indian River and Rehoboth Bays [Poster Presentation], 2023 DENIN Symposium, University of Delaware
8. **Ouyang, T.**, A.M. Ebling, A.M. Mckenna & A.S. Wozniak (2022) The Integrated Roles of River Discharge, Seasonality, and Land Use/Land Cover on Dissolved Organic Matter

Variations in the Murderkill River Estuary, DE [Poster Presentation], AGU 2022 Meeting, Chicago IL, USA.

9. **Ouyang, T.**, S. Gonski, & A.S. Wozniak (2022) Temporal and Spatial Variations of Dissolved Organic Matter in the Indian River Bay Region [Poster Presentation], College of Earth, Ocean, and Environment Research Symposium, online. (*\*First Place*)
10. **Ouyang, T.**, S. Gonski, & A.S. Wozniak (2022) Temporal and Spatial Variations of Dissolved Organic Matter in the Indian River Bay Region, Delaware Environmental Institute Research Symposium [Poster Presentation], University of Delaware – Newark Campus.
11. **Ouyang, T.**, A.M. Ebling, & A.S. Wozniak (2022) Dissolved organic matter dynamics in freshwater of Murderkill River Estuary: integrated role of river discharge, land use/land cover, and seasonality [Poster Presentation], Ocean Science Meeting 2022, online.
12. Gutkowski, N.M., **T. Ouyang** & A.S. Wozniak (2022) Spatial and Temporal Dynamics of Dissolved Organic Matter in the Indian River and Rehoboth Bays [Poster Presentation], Undergraduate Summer Scholar Symposium, University of Delaware
13. **Ouyang, T.**, A.M. Ebling, & A.S. Wozniak (2021) Dissolved organic matter dynamics in Murderkill River Estuary: Integrating land cover/land use to pulse-shunt concept [Poster Presentation], Coastal and Estuarine Research Federation 2021 Biennial Conference, online.
14. **Ouyang, T.**, A.M. Ebling, & A.S. Wozniak (2021) The Influence of Discharge on Dissolved Organic Matter Dynamics in Murderkill River Estuary [Poster Presentation], College of Earth, Ocean and Environment Research Symposium, online.
15. **Ouyang, T.**, A.M. Ebling, & A.S. Wozniak (2021) Dissolved Organic Matter Dynamics in the Murderkill River Estuary [Poster Presentation], DENIN Research Symposium, online. (*\*Third Place*)
16. Bass, J., A.S. Wozniak, **T. Ouyang** & A. Ebling (2021) Dissolved Organic Phosphorus Dynamics in the Murderkill River Estuary [Poster Presentation], Undergraduate Summer Scholar Symposium, University of Delaware

*Prior to the University of Delaware (Funded Presentations)*

17. **Ouyang, T.**, D.S. Weissman & K.L. Tully (2020) Saltwater Intrusion Releases Iron and Phosphorus from Agricultural Soils [Poster Presentation], Undergraduate Research Day 2020, University of Maryland, online.
18. **Ouyang, T.**, D. Xiang, D.J. Bolger & J. Dien (2019) A Chinese Language Study of the N450 Rhyming Effect [Poster Presentation], Society for Psychophysiological Research 2019 Annual Conference, Washington DC, USA.

## **RESEARCH PROJECTS & COLLABORATORS**

*Since admitted to the University of Delaware*

2023 – Present      ***Submarine Groundwater Biogeochemistry Project*** [pending funding]  
PI: Andrew S. Wozniak (University of Delaware)

- 2021 – Present      *Collaborators:* Holly Michael (UD, Earth Sciences), Tom Hanson (UD, SMSP), Yael Kiro (Weizmann Institute of Science, Israel), Keren Yanuka-Golub (The Galilee Society Institute of Applied Research, Israel)  
***Carbon Cycling in the Indian River and Rehoboth Bays*** [funded by NSF EPSCOR award top UD, “Project WICCED”]  
*PI:* Andrew S. Wozniak (University of Delaware)  
*Collaborators:* Wei-Jun Cai (University of Delaware), Stephen Gonski (University of Delaware)
- 2020 – 2022      ***Carbon Cycling in the Murderkill River Project*** [funded by NSF EPSCOR award to UD, “Project WICCED”]  
*PI:* Andrew S. Wozniak (University of Delaware)  
*Collaborators:* Wei-Jun Cai (University of Delaware), DNREC
- Prior to the University of Delaware*
- 2019 – 2020      ***Saltwater Intrusion Project*** [funded by Maryland Summer Scholarship & USDA NIFA Integrated Agriculture and Natural Resources Extension and Research Program Grant]  
*Advisor:* Danielle Weissman & Katherine Tully (University of Maryland)
- 2018 – 2019      ***Biosolid Project*** [funded by Environmental Protection Agency]  
*Mentor:* Sarah J. Fischer (University of Maryland)

## **PROFESSIONAL SKILLS & EXPERIENCE**

- ***Data analysis:*** experienced in statistical analyses (linear algebra, Fourier transformation, principal component analysis, parallel factor analysis) and scientific writing
- ***Coding and programming:*** R, MATLAB, and Microsoft Excel
- ***Wet lab experience:*** sample filtration, solid phase extraction, inorganic nitrogen and phosphorus digestions
- ***Analytical Instruments:*** Expertise with fluorescence spectrophotometry, total organic carbon analysis, elemental analysis, nutrient (nitrate/nitrite, ammonium, phosphate) quantification, atomic absorption spectroscopy, ultraviolet-visible spectrophotometry, Fourier-transform ion cyclotron resonance mass spectrometry, Gas/Liquid Chromatography, Electroencephalogram
- ***Teaching:*** B.S. in education degree; Passed the teacher certification exam series in 2020
- ***Field Collections:*** Land and boat-based water sample collections, groundwater collection
- ***Languages:*** Fluent in English and Mandarin