

# HANG YIN

Department of Ocean Science and Technology

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## EDUCATION

**Ph.D. in Marine Science** 2020

School of Marine and Atmospheric Sciences  
Stony Brook University, USA

**B.S. in Marine Chemistry** 2014

School of Chemistry & Chemical Engineering  
Ocean University of China, China

## EMPLOYMENT

**Assistant Professor** 2025–Present

Department of Ocean Science and Technology  
University of Macau, China

**Research Associate** 2024–2025

Marine Science Institute  
The University of Texas at Austin, USA

**Postdoctoral Research Associate** 2021 – 2024

Harte Research Institute for Gulf of Mexico Studies  
Texas A&M University-Corpus Christi, USA

## NARRATIVE OF RESEARCH

Redox processes and inorganic carbon chemistry; development and application of chemical sensors; sediment biogeochemistry

## HONORS & AWARDS

- L&O Letters Early Career Publication Honor 2024
- OCB2022 Early Career Travel Stipend 2022
- Maze-Landean Graduate Student Fund for Excellence 2019
- Chinese Undergraduate National Scholarship 2013
- Chinese Undergraduate National Scholarship 2012

## PUBLICATIONS

- **Yin, H.**, Jundt, E., Johnston, M., Hu, X. High temporal resolution seawater carbonate chemistry at a deepwater tropical coral reef in the Northwestern Gulf of Mexico. In review
- Zhang, Z., Du, G., **Yin, H.**, Zhu, Z., Zhang, R., Jin, J., Zhang, G., Zhang, G. (2024). Distributions, fluxes and influence factors of dissolved CH<sub>4</sub> in the Kongsfjorden and Bayelva River in Spitsbergen, Arctic [J]. *Chinese Journal of Polar Research*, 36(4): 555-568. doi: 10.13679/j.jdyj.20230062 (Article in Chinese with an English abstract).
- **Yin, H.**, Jin, L., Hu, X. (2024). Interpreting biogeochemical processes through the relationship between total alkalinity and dissolved inorganic carbon: Theoretical basis and limitations. *Limnology and Oceanography: Methods*
- **Yin, H.**, Hu, X., Dias, L. M. (2023). Sulfate enrichment in estuaries of the northwestern Gulf of Mexico: The potential effect of sulfide oxidation on carbonate chemistry under a changing climate. *Limnology and Oceanography Letters*, <https://doi.org/10.1002/lol2.10335>.
- Dias, L. M., Hu, X., **Yin, H.** (2022). A biogeochemical alkalinity sink in a shallow, semiarid estuary of the northwestern Gulf of Mexico. *Aquatic Geochemistry*, 29.1 (2023): 49-71.
- **Yin, H.**, Aller, J. Y., Furman, B., Aller, R. C., Zhu, Q. (2022). Cable bacteria activity and impacts in Fe and Mn depleted carbonate sediments. *Marine Chemistry*, 104176.
- **Yin, H.**, Aller, R. C., Zhu, Q., Aller, J. Y. (2021). The dynamics of cable bacteria colonization in surface sediments: a 2D view. *Scientific Reports*, 11, 7167.
- Zhu, Q., Corcoran, J.K., Heilbrun, C., **Yin, H.**, Feng, H., Tamborski, J., Fitzgerald, P., Cong, W. (2021). Small-scale geochemical heterogeneities and seasonal variation of iron and sulfide in salt marshes revealed by two-dimensional sensors. *Frontiers in Earth Science*, 9:653698.
- **Yin, H.**, Aller, R. C., Zhu, Q., Aller, J. Y. (2021). Biogenic structures and cable bacteria interactions: redox domain residence times and the generation of complex pH distributions. *Marine Ecology Progress Series*, 669:51-63.
- Zhang, H., Wang, S., **Yin, H.**, Sha, Z., Shi, X., Su, R., Pei, S., Wang, G., Ma, B. (2020). The development of *Ulva prolifera* green tide and the roles of nitrogen nutrients in it in the southern Yellow Sea in 2018 [J]. *Haiyang Xuebao*, 42(8):40–49 doi:10.3969/j.issn.0253–4193.2020.08.005 (Article in Chinese with an English abstract).
- Zhang, H., Su, R., Shi, X., Zhang, C., **Yin, H.**, Zhou, Y., Wang, G. (2020). Role of nutrients in the development of floating green tides in the Southern Yellow Sea, China, in 2017. *Marine Pollution Bulletin*, 156, 111197.
- **Yin, H.**, Zhu, Q., Aller, R. C. (2017). An irreversible planar optical sensor for multi-dimensional measurements of sedimentary H<sub>2</sub>S. *Marine Chemistry*, 195, 143-152.

Refereed non-journal publication

- Hu, X., **Yin, H.** (2025). Physical and Biogeochemical Conditions and Trends in Texas Estuaries. In: Montagna, P.A., Douglas, A.R. (eds) *Freshwater Inflows to Texas Bays and Estuaries*. Estuaries of the World. Springer, Cham.

Non-refereed publication

- **Yin, H.**, Armstrong, D.A., Hampton, A., Bahr, K.D., Hu, X. (2024). Carbonate chemistry baseline condition and vulnerability of marine organisms to carbon dioxide increases in the northwestern Gulf of Mexico. Exxon report.
- Cochran, J. K., Zhu, Q., Heilbrun, C., Tamborski, J., **Yin, H.**, Fitzgerald, P., Perez-Tuero, J., and Feng, H. (2018). Health and resilience of salt marshes in Jamaica Bay, NY: Geochemical and dynamical perspectives. *Natural Resource Report NPS/NCBN/NRR—2018/1643*. National Park Service, Fort Collins, Colorado.

## PROFESSIONAL ACTIVITIES & MEMBERSHIPS

- Reviewer for research articles:  
*ACS Omega*  
*Analytical Chemistry*  
*Journal of Geophysical Research – Oceans*  
*Scientific Reports*  
*EGUsphere*  
*Marine Chemistry*  
*Limnology and Oceanography*  
*Estuaries and Coasts*  
*Estuarine, Coastal and Shelf Science*  
*Frontiers in Marine Science*  
*Progress in Oceanography*
- Professional organizations:  
Association for the Sciences of Limnology and Oceanography  
Benthic Ecosystem and Carbon Synthesis (BECS) Working Group  
Coastal and Estuarine Research Federation  
Global Ocean Acidification Observing Network  
International Carbon Ocean Network for Early Career

## ATTENDED CONFERENCES

- **Yin, H.**, Hu, X. Anaerobic alkalinity and dissolved inorganic carbon production in the Northern Gulf of Mexico hypoxic waters. (Poster), *ASLO 2025 Aquatic Sciences Meeting*, Charlotte, NC, March 2025.
- Hu, X., **Yin, H.**, P Raju, A. Hydrological control on benthic alkalinity flux in subtropical estuaries. (Poster), *ASLO 2025 Aquatic Sciences Meeting*, Charlotte, NC, March 2025.
- Chair with Hu, X. “SS13P - Benthic Alkalinity Production Across the Land-Ocean Aquatic Continuum: Experiments, Modelling, Challenges, and New Perspectives” (Poster Session), *ASLO 2025 Aquatic Sciences Meeting*, Charlotte, NC, March 2025.

- Co-chair with Turpie, K., Dierssen, H., Tzortziou, M., Lorenzoni, L. “OT14D - Spectroscopic symphony: Harmonizing NASA’s PACE, SBG, and GLIMR missions for coastal and inland aquatic science and applications” (Poster Session), *Ocean Sciences Meeting*, New Orleans, LA, February 2024.
- **Yin, H.**, Hu, X. Assumptions and limitations in using alkalinity and dissolved inorganic carbon relationship to interpret biogeochemical processes (Oral Presentation), *Ocean Sciences Meeting*, New Orleans, LA, February 2024.
- Jundt, E., **Yin, H.**, Hu, X. High-resolution carbonate chemistry variations at Flower Garden Banks National Marine Sanctuary, Northwestern Gulf of Mexico (Poster), *CERF 27th Biennial Conference*, Portland, OR, November 2023.
- **Yin, H.**, Hu, X. Carbonate chemistry baseline conditions in the Northwestern Gulf of Mexico (Poster), *CERF 27th Biennial Conference*, Portland, OR, November 2023.
- **Yin, H.**, Hu, X., Dias, L. M. Alkalinity source or sink? – A twist on the redox cycling of sediment sulfur and coastal water alkalinity dynamics (Poster), *Gordon Research Conference (Chemical Oceanography)*, Manchester, NH, July 2023.
- **Yin, H.**, Hu, X. Electric currents in the sediment: alkalization of seawater by cable bacteria (Oral Presentation), *Texas Bays and Estuaries Meeting*, Port Aransas, TX, September 2022.
- **Yin, H.**, Hu, X. Sulfate Excess and Its Relationship with Alkalinity in Estuaries Across the Northwestern Gulf of Mexico (Poster). *Ocean Carbon & Biogeochemistry Summer Workshop*, Woods Hole, MA, June 2022.
- **Yin, H.**, Zhu, Q., Aller, J. Y., Aller, R. C. Biogeochemical dynamics of electrogenic redox reactions associated with cable bacteria activity in Fe/Mn-depleted carbonate deposits (Poster). *Gordon Research Conference (Chemical Oceanography)*, Holderness, NH, July 2019.
- **Yin, H.**, Zhu, Q., Aller, J. Y., Aller, R. C. Cable bacteria activity in Mn/Fe depleted marine carbonate deposits (Oral Presentation). *ASLO 2019 Aquatic Sciences Meeting*, San Juan, PR, February 2019.
- **Yin, H.**, Zhu, Q., Aller, J. Y., Aller, R. C. Cable bacteria activity in Mn/Fe depleted marine carbonate deposits (Poster). *Goldschmidt 2018 Annual Meeting*, Boston, MA, August 2018.
- Cochran, J. K., Zhu, Q., Heilbrun, C., **Yin, H.**, Tamborski, J., Feng, H. Health and resiliency of marshes in Jamaica Bay, New York: Geochemical and dynamical perspectives (Oral Presentation). *CERF 24th Biennial Conference*, Providence, Rhode Island, November 2017.
- **Yin, H.**, Zhu, Q., Aller, R. C. An irreversible planar optical sensor for multi-dimensional measurements of sedimentary H<sub>2</sub>S (Poster). *The 5th Nereis Park Conference*, Stony Brook, NY, August 2017.

## INVITED TALKS

- “Sediment biogeochemistry and seawater carbonate chemistry: Perspectives from observation method and benthic-pelagic coupling” – Second Institute of Oceanography, Ministry of Natural Resources of China, China, November 2024.

- “Coastal ocean carbonate chemistry: From sediment-water interface to air-sea interface” – University of Macau, Macau, China, November 2024.
- “Sediment biogeochemistry and seawater carbonate chemistry: Perspectives from observation method and benthic-pelagic coupling” – Yantai Institute of Coastal Zone Research, Chinese Academy of Sciences, China, April 2024.
- “Sulfate enrichment in estuaries of the northwestern Gulf of Mexico: The potential effect of sulfide oxidation on carbonate chemistry under a changing climate” – 2024 OSM Workshop on Benthic-Pelagic Coupling of Biogeochemical Processes in the Northern Gulf of Mexico, New Orleans, LA, February 2024.
- “A 2D view on cable bacteria colonization and interaction with biogenetic structure” – Gordon Research Seminar (Chemical Oceanography), Manchester, NH, July 2023.
- “From Long Island to the Island University: stinky mud to corrosive seawater” – Harte Research Institute for Gulf of Mexico Studies, Texas A&M University-Corpus Christi, November 2022.
- “Cable bacteria colonization in bioturbated sediments and impacts on biogeochemical cycling” – Earth & Planetary Sciences, Johns Hopkins University, March 2021.
- “Sediment sulfur cycle” – MAR351, School of Marine and Atmospheric Sciences, Stony Brook University, September 2020.

## TEACHING EXPERIENCES

- CHEM 4344, Chemical Oceanography (2 lectures) Spring, 2022 – 2024
- Teaching Practicum in MAR 503 Chemical Oceanography (lectures and exam) Spring, 2018
- Teaching Assistant in MAR 104, Oceanography (Grading & office hours) Fall, 2014

## OTHERS

- Mentorship:
  - Alberto Morales, Graduate student, The University of Texas at Austin
  - Aneena P Raju, Graduate student, The university of Texas at Austin
  - Larisa Dias, Graduate student, Texas A&M University-Corpus Christi
  - Danny LaCorte, Undergraduate student, Stony Brook University
  - Andres Sosa, Undergraduate student, Stony Brook University
- Volunteer:
  - Judge for the 27th CERF student presentation, Portland, Oregon
  - Evaluator for the 11th Annual MSGSO Student Symposium, Texas A&M University-Corpus Christi

Evaluator for the 2022 Spring Student Research Symposium, Texas A&M University-  
Corpus Christi

Earth Day-Bay Day 2022, Corpus Christi

Earth Day 2023, Texas State Aquarium, Corpus Christi