

# Meng GAO

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## Educations

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|---|------------------------------|
| <b>Graduate School of Oceanography, University of Rhode Island</b>                    | <b>Narragansett, RI, USA</b> |
| ➤ <i>PhD student</i> ; <b>Overall GPA: 3.93</b>                                       | Sept 2021 - Present          |
| <b>School of Resources and Environmental Science, Nanjing Agricultural University</b> | <b>Nanjing, P.R. China</b>   |
| ➤ <i>B.S. in Ecology</i> ; <b>Overall GPA: 92</b> ; <b>Ranking: 1/30</b>              | Sep 2018 - Jul 2021          |
| <b>Department of Biology and Environment, University of Gothenburg</b>                | <b>Gothenburg, Sweden</b>    |
| ➤ <i>Exchange student</i>   | Jan 2020 - Jun 2020          |

## Publications

1. **Gao M**, Milligan AJ, Deutsch C, Inomura K. Anchoring permits helps to acquire ecological niche in coastal oceans: A model analysis. (Under Review)
2. **Gao M**, Berberich ME, Brown R, Costello D, Cotner JB, Damashek J, Kittu L, Pastor A, Fulweiler RW, Scott T, Marcarelli AM, Inomura K. Metabolic biochemical models of N<sub>2</sub> fixation for sulfide oxidizers, methanogens, and methanotrophs. (Under Review)
3. **Gao M**, Andrews J, Armin G, Chakraborty S, Zehr J P, Inomura K (2024) Rapid mode switching facilitates the growth of *Trichodesmium*: A model analysis.
4. Masuda T, Inomura K, **Gao M**, Armin G, Kotabová E, Bernát G, Lawrenz E, Lukeš M, Bečková M, Steinbach G, Komenda J, Prášil O (2023) The balance between photosynthesis and respiration explains the niche differentiation between *Crocospaera* and *Cyanothece*. *Computational and Structural Biotechnology Journal* 21:58–65.
5. **Gao M**, Armin G, Inomura K (2022) Low-ammonium environment increases the nutrient exchange between diatom-diazotroph association cells and facilitates photosynthesis and N<sub>2</sub> fixation—A mechanistic modeling analysis. *Cells* 11:2911.
6. Ren S, **Gao M**, Wang X, Yu Y, Chen J, Chen N (2022) Algal bloom prediction in the Jiulong River reservoir based on three types of time series models. *Acta Scientiae Circumstantiae* 42(11): 172-183.
7. Li D, Liu R, Cui X, He M, Zheng S, Du W, **Gao M**, Wang C (2021) Co-culture of bacteria and microalgae for treatment of high concentration biogas slurry. *Journal of Water Process Engineering*, 41, 102014.

## Workshops and Presentations

- Metabolic biochemical models of N<sub>2</sub> fixation for sulfur oxidizers, methanogens, and methanotrophs (Oral Presentation), Madison, Wisconsin, June 2024
- Modeling different types of *Trichodesmium* – How could they adapt to different nutrients environments? (Poster presentation), Ocean Sciences Meeting 2024, New Orleans, Louisiana, February 2024
- Aquatic N<sub>2</sub> Fixation workshop, Michigan Technology University, Great Lake Research Center, Houghton, October 2023
- Environmental Ammonium Effect on DDA: A Cell Flux Model Analysis (Presentation), California, Irvine, October 2023
- A Modeling Analysis: Low-NH<sub>4</sub><sup>+</sup> Environment Increases the Nutrient Exchange and Metabolism in DDA (guest lecture), Graduate School of Oceanography, University of Rhode Island, April 2023

## Mentor and Teaching Experiences

- Mentor of new student in Quantitative Microbiology group in 2023
- Mentor-Mentee program in Graduate School of Oceanography, University of Rhode Island in 2022

- Science Saturday Volunteer, Graduate School of Oceanography, University of Rhode Island, September 2022

## **Skills**

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- Solid analytical chemistry, organic chemistry, biochemistry, microbiology and environmental analysis experiment skills.
- Field investigation.
- Computer software: Python, R, MATLAB, JMP, Visual Basic, Microsoft Office, AutoCAD.
- Computer Level III license in China (database).
- Academic Writing.
- Big Data Analysis using R.

## **Awards and Honors**

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- National scholarship (top 6%).
- Professor Huang Ruicai Scholarship (1/30).
- Third Prize at the National English Competition for College Students (top 5.1%).
- Outstanding Volunteer within the Jiangsu Province.

## **Research Experiences**

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### **Graduate Experiences**

**Quantitative Models development** Sept 2021 - Present  
University of Rhode Island | *Research Assistant*  
**Advisor:** Keisuke Inomura, Assistant Professor, University of Rhode Island

### **Undergraduate Experiences**

**Response of Arctic *Chlorella* sp. to extreme Temperature and Light conditions** Jan 2021 - June 2021  
Nanjing Agricultural University | **Undergraduate thesis**  
**Advisor:** Meilin He, Associate Professor at the Jiangsu Key Laboratory of Marine Biology, Nanjing Agricultural University

**A study of algae bloom forecast models in Jiulong River** Jul 2020 – Jul 2021  
Xiamen University | *Research Assistant*  
**Advisor:** Nengwang Chen, Professor at the State Key Laboratory of Marine Environmental Science, Xiamen University, China

**Physiological responses of *Scenedesmus obliquus* under ultraviolet irradiation** Sept 2019 - Jan 2020  
Nanjing Agricultural University | *Research Assistant*  
**Advisor:** Meilin He, Associate Professor at the Jiangsu Key Laboratory of Marine Biology, Nanjing Agricultural University

## **Research Interests**

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Quantitative microbiology, Ecological models, Phytoplankton physiology, Microbial ecology, Climate Change, Elemental composition in microbial cells, Mathematical modeling, Nitrogen fixation, Nitrogen Cycle

## **Social and JEDI Activities**

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- Diversity and Inclusion Badge Program, University of Rhode Island, February 2023.
- Volunteered in Lunar New Year Event in Graduate School of Oceanography, University of Rhode Island, February 2023.
- Volunteered for the pollution investigation of Qinhuai River in July 2019.
- Took part in an investigation of garbage classification in a rural area of Nanjing in April 2019.
- Volunteered for the International Half Marathon at Luhe, Nanjing, Jiangsu in November 2018.