

## EDUCATION EXPERIENCE

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- Department of Ocean Science and Engineering, Southern University of Science and Technology (SUSTech) 2020.09-2023.06  
(Expected)  
Degree: Master of Science Major: Marine Biology GPA: 3.57/4
  - Department of Ocean Science and Engineering, Southern University of Science and Technology (SUSTech) 2016.09-2020.06  
Degree: Bachelor of Science Major: Oceanography GPA: 3.67/4

## RESEARCH EXPERIENCE

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- Department of Ocean Science and Engineering, SUSTech 2019.6-Present  
Advisor: Dr. Chuanlun Zhang
    - Cultivating *Nitrosopumilus maritimus* SCM1 to obtain *in situ* S-layer structure by cryo-electron tomography (cryo-ET) and subtomogram techniques
    - Building a mass spectrum database of tetraether lipids for automatic annotation and identification of archaeal lipids
    - Analyzing archaeal lipids from cold seep sediments of the South China Sea using UPLC-HRMS and lipidomics techniques
    - Cultivated *Nitrosopumilus maritimus* SCM1 and assisted in characterizing its lipidome and exometabolome; papers have been published in *Frontiers in Microbiology* (see publications)

## PUBLICATIONS

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- 1) Law, K. P., **He, W.**, Tao, J., & Zhang, C. (2021). A Novel Approach to Characterize the Lipidome of Marine Archaeon *Nitrosopumilus maritimus* by Ion Mobility Mass Spectrometry. **Frontiers in Microbiology**. <https://doi.org/10.3389/fmicb.2021.735878>
  - 2) Law, K. P., **He, W.**, Tao, J., & Zhang, C. (2021). Characterization of the Exometabolome of *Nitrosopumilus maritimus* SCM1 by Liquid Chromatography-Ion Mobility Mass Spectrometry. **Frontiers in Microbiology**. <https://doi.org/10.3389/fmicb.2021.658781>

## RESEARCH FUNDING

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- Special Funds for the Cultivation of Guangdong College Students' Scientific and Technological Innovation. ("Climbing Program" Special Funds), **Leader**: Three-dimensional reconstruction of archaeal membrane lipids based on cryo-electron tomography (cryo-ET). ¥ 40,000 2021.03-2023.03
  - National Undergraduate Training Programs for Innovation and Entrepreneurship, **Leader**: The ecological function monitoring of Marine Group II archaea in the Great Shenzhen Bay area based on unmanned aerial vehicle water collection system. ¥ 20,000 2019.06-2020.06

## HONORS & AWARDS

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- National Scholarship in 2021-2022 of China 2022.10
- Outstanding Graduates of the Department of Ocean Science and Engineering in SUSTech 2020.07
- The First Prize Scholarship of SUSTech 2019.09
- Outstanding Volunteers of SUSTech 2018.12
- National Encouragement Scholarship in 2017-2018 of China 2018.10
- Public Service Award in 2016-2017 of Shude College in SUSTech 2017.12
- National Encouragement Scholarship in 2016-2017 of China 2017.10
- Excellent Prize Scholarship for Freshmen of SUSTech 2016.09

## CONFERENCE EXPERIENCE

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- **Wei He**, Tingting Zhang, Fengfeng Zheng, et al. (Poster) Diversity of archaeal groups and their lipid characteristics in cold seep sediments from the South China Sea. The 10<sup>th</sup> Geomicrobiology Conference of Chinese society for microbiology, Guilin, China 2022.07
- **Wei He**, Fengfeng Zheng, Chuanlun Zhang. (Oral) The role of archaeal membrane lipids in low pH and heavy metal resistance from acid mine drainage system. The 7<sup>th</sup> seminar on bio-organic geochemistry, Beijing, China 2020.10
- **Wei He**, Yangkai Zhou, Chuanlun Zhang, et al. (Poster) Application of multivariate statistics in analyzing the complex data produced by lipidomics and 16S rRNA gene amplicon sequences. The 8<sup>th</sup> Geomicrobiology Conference of Chinese society for microbiology, Qingdao, China 2019.06

## TEACHING EXPERIENCE

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- SUSTech, Teaching Assistant (Introduction to Oceanography) 2020.09-2021.01
  - Assisted professor in course development and instruction
  - Organized an oceanic field trip (14 students)

## SKILLS

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### Experimental

- Microbiological cultivation (bacteria & archaea), DNA extraction, Real-time quantitative PCR, Molecular cloning, Gel electrophoresis (agarose, SDS-PAGE), Lipids (metabolites) extraction

### Computational

- R (Professional), Linux, C<sup>++</sup>, Python, Java and MATLAB
- Metagenomic and lipidomic data processing workflows

## REFEREES

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- **Dr. Chuanlun Zhang**, Shenzhen Key Laboratory of Marine Archaea Geo-Omics, Southern University of Science and Technology, Shenzhen, China  
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- **Dr. Zheng Liu**, Cryo-electron Microscopy Center, Southern University of Science and Technology, Shenzhen, China  
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