

CHEUNG Shun Yan, PhD

RESEARCH INTERESTS

- Biogeography, ecophysiology and functions of nitrogen and carbon fixing microorganisms in the ocean
- Responses of marine nitrogen and carbon cycles to the global climate change

EDUCATION

- The Hong Kong University of Science and Technology 2012-2018
 - PhD in Marine Environmental Science

WORK EXPERIENCE

- National Taiwan Ocean University 2023-present
 - Assistant professor in Institute of Marine Biology
- University of California Santa Cruz 2021-2022
 - Postdoctoral scholar in Ocean Sciences Department
- The Hong Kong University of Science and Technology 2018-2021
 - Postdoctoral researcher in Department of Ocean Science

RESEARCH EXPERIENCES

- Basin-scale cruises to the North Pacific Ocean (JUN-JUL 2022, NOV-DEC 2021)
- Cruises to the Kuroshio and western North Pacific Ocean (MAR 2014, JUL 2013, NOV-DEC 2012)
- Cruises to the South China Sea (JUN-JUL 2021(chief scientist), MAY 2015, JUL-AUG 2012)
- Cruise to Bering Sea (JUL-SEP 2018)
- Simons Collaboration on Ocean Processes and Ecology (SCOPE) (SEP 2021-present)
- Aquacosc experiment "Compex" in Hellenic Centre for Marine Research, Greece (SEP-OCT 2019)

RESEARCH GRANT

- **NSTC 112-2611-M-019-009** Dynamics and Ecological Functions of Marine Nitrogen Fixing Organisms in a Changing Climate 1/3 (2023-2024: NTD 2,412,000)

COMMUNITY SERVICE

Reviewer for: *Limnology and Oceanography Letters*, *Global Change Biology*, *Biogeosciences*, *JGR-Biogeosciences*, *Marine Ecology Progress Series*, *Frontiers in Microbiology*, *Frontiers in Marine Science*, *Continental Shelf Research*, *Aquatic Sciences*, *Acta Oceanologica Sinica* and *PLOS One*.

REPRESENTATIVE PUBLICATIONS (2018-2023)

1. **Cheung, S.⁺**, Liu, K.⁺, Turk-Kubo, K., Nishioka, J., Suzuki, K., Landry, M., Zehr, J., Leung, S., Deng, L., and Liu, H. (2022) High biomass turnover rates of endosymbiotic nitrogen-fixing cyanobacteria in the western Bering Sea. *Limnology and Oceanography Letters*, **7(6)**: 501-509. ([impact factor=8.507, rank=2/66](#))
2. Deng, L., **Cheung, S.^{*}**, Kang, C., Liu, K., Xia, X., and Liu, H.^{*} (2021) Elevated temperature relieves phosphorus limitation of marine unicellular diazotrophic cyanobacteria. *Limnology and Oceanography*, **67**: 122-134. ([impact factor=5.019, rank=4/66](#))
3. **Cheung, S.**, Zehr, J.P., Xia, X., Tsurumoto, C., Endo, H., Nakaoka, S., Mak, W., Suzuki, K., and Liu, H. (2021) Gamma4: a genetically versatile Gammaproteobacterial *nifH* phylotype that widely distributed in the North Pacific Ocean. *Environmental Microbiology*, **23**: 4246-4259. ([impact factor=5.476, rank=42/137](#))

4. Cheung, Y., **Cheung, S.**^{*}, Mak, J., Liu, K., Xia, X., Yung, Y., Zhang, X., and Liu, H.^{*} (2021) Distinct interaction effects of warming and anthropogenic input on diatoms and dinoflagellates in an urbanized estuarine ecosystem. *Global Change Biology*, **27**: 3463-3473. ([impact factor=13.212, rank= 1/65](#))
5. **Cheung, S.**, Nitani, R., Tsurumoto, C., Endo, H., Nakaoka, S., Cheah, W., Lorda, J., Xia, X., Liu, H., and Suzuki, K. (2020) Physical forcing controls the basin-scale occurrence of nitrogen-fixing organisms in the North Pacific Ocean. *Global Biogeochemical Cycles*, **34(9)**: e2019GB006452. ([impact factor=6.500, rank= 16/202](#))
6. Lu, Y.⁺, **Cheung, S.**⁺, Chen, L., Kao, S. J., Xia, X., Gan, J., Dai, M., and Liu, H. (2020). New insight to niche partitioning and ecological function of ammonia oxidizing archaea in subtropical estuarine ecosystem. *Biogeosciences*, **17**: 6017–6032. ([impact factor=5.092, rank= 34/202](#))
7. Deng, L.⁺, **Cheung, S.**⁺, and Liu, H. (2020) Protistal grazers increase grazing on unicellular cyanobacteria diazotroph at night. *Frontiers in Marine Science*, **7**: 135. ([impact factor=5.247, rank= 6/133](#))
8. **Cheung, S.**, Suzuki, K., Xia, X., and Liu, H. (2019) Transportation of diazotroph community from the upstream to downstream of the Kuroshio. *Journal of Geophysical Research: Biogeosciences*, **124(9)**: 2680-2693. ([impact factor=4.432, rank= 49/202](#))
9. **Cheung, S.**, Mak, W., Xia, X., Lu, Y., Cheung, Y., and Liu, H. (2019) Overlooked genetic diversity of ammonia oxidizing archaea lineages in the global oceans. *Journal of Geophysical Research: Biogeosciences*, **124(7)**: 1799-1811. ([impact factor=4.432, rank= 49/202](#))

OTHER PUBLICATIONS (2018-2023)

1. Liu, K., Nishioka, J., Chen, B., Suzuki, K., **Cheung, S.**, Lu, Y., Wu, H., and Liu, H. (2023) Role of nutrients and temperature in shaping distinct summer phytoplankton and microzooplankton population dynamics in the western North Pacific and Bering Sea. *Limnology and Oceanography*, **68**: 649-665. ([impact factor=5.019, rank=4/66](#))
2. Turk-Kubo, K., Gradoville, M., **Cheung, S.**, Cornejo-Castillo, F., Harding, K. J., Morando, M., Mills, M., and Zehr, J. (2022) Non-cyanobacterial diazotrophs: Global diversity, distribution, ecophysiology, and activity in marine waters. *FEMS Microbiology Reviews*, <https://doi.org/10.1093/femsre/fuac046>. ([impact factor=15.177, rank=12/137](#))
3. Acevedo-Trejos, E., Cadier, M., Chakraborty, S., Chen, B., **Cheung, S.**, Grigoratou, M., ... and Prowe, F. (2022) Modelling approaches for capturing plankton diversity (MODIV), their societal applications and data needs. *Frontiers in Marine Science*, **9**: 975414. ([impact factor=5.247, rank= 6/133](#))
4. Xu, Z., **Cheung, S.**, Endo, H., Xia, X., Wu, W., Chen, B., Ho, N., Suzuki, K., Li, M., and Liu, H. (2022) Assembly processes and controlling factors in phytoplankton communities across the Pacific Ocean. *mSystems*, **7(1)**: e01203-21. ([impact factor=7.328, rank=27/137](#))
5. Zhang, X., **Cheung, S.**, Wang, J., Zhang, G., Wei, Y., Liu, H., Sun, J., and Liu, H. (2022) Highly diverse *Synechococcus* pigment types in the Eastern Indian Ocean. *Frontiers in Microbiology*, **13**:806390. ([impact factor=6.064, rank=34/137](#))
6. Gu, B., Liu, J., **Cheung, S.**, Ho, N. H. E., Tan, Y., and Xia, X. (2022) Insights into Prokaryotic Community and Its Potential Functions in Nitrogen Metabolism in the Bay of Bengal, a Pronounced Oxygen Minimum Zone. *Microbiology Spectrum*, e00892-21. ([impact factor=9.043, rank=20/137](#))
7. Liu, H., Zhou, P., **Cheung, S.**, LU, Y., Jing, H., and Liu, H. (2022) Distribution and oxidation rates of ammonia-oxidizing archaea influenced by the coastal upwelling off eastern Hainan Island. *Microorganisms*, **10(5)**: 952. ([impact factor=4.926, rank=54/137](#))
8. Feng, M., Lin, S., Zhang, W., Wang, C., Liu, H., **Cheung, S.**, Li, H., Stukel, M, Irving, J., and Li, N. (2022) Micro-/Meso-Scale Distinction and Horizontal Migration of Tintinnid (Ciliophora: Tintinnida) Assemblages in Three Regions Around the North Pacific Ocean. *Frontiers in Marine Science*, **9**: 863549. ([impact factor=5.247, rank= 6/133](#))

9. Xia, X., Lee, P., **Cheung, S.**, Lu, Y., Tan, Y., and Liu, H. (2020) Discovery of euryhaline phycoerythrobilin-containing *Synechococcus* and their mechanisms for adaptation to estuarine environments. *mSystems*, **5**: e00842-20. ([impact factor=7.328, rank=27/137](#))
10. Zhang, S., Li, C., **Cheung, S.**, Sun, M., Song, S., Guo, W., Guo, C., Wu, G., and Liu, H. (2020) Snapshot of peptidomics of the red tide forming species *Noctiluca scintillans*. *Frontiers in Marine Science*, **7**:569807. ([impact factor=5.247, rank= 6/133](#))
11. Zhang, S., Xia, X., Ke, Y., Song, S., Shen, Z., **Cheung, S.**, and Liu, H. (2020) Population dynamics and interactions of *Noctiluca scintillans* and *Mesodinium rubrum* during their successive blooms in a subtropical coastal water. *Science of the Total Environment*, **755**: 142349. ([impact factor=10.754, rank= 26/279](#))
12. Rocke, E., **Cheung, S.**, Gebe, Z., Dames, N., Liu, H., and Moloney, C. (2020) Marine microbial community composition during the upwelling season in the Southern Benguela. *Frontiers in Marine Science*, **7**: 255. ([impact factor=5.247, rank= 6/133](#))
13. Xia, X., Leung, S. K., **Cheung, S.**, Zhang, S., and Liu, H. (2020). Rare bacteria in seawater are dominant in the bacterial assemblage associated with the bloom-forming dinoflagellate *Noctiluca scintillans*. *Science of The Total Environment*, **711**: 135107. ([impact factor=10.754, rank= 26/279](#))
14. Xia, X., **Cheung, S.**, Endo, H., Suzuki, K., & Liu, H. (2019). Latitudinal and vertical variation of *Synechococcus* assemblage composition along 170° W transect from the South Pacific to the Arctic Ocean. *Microbial Ecology*, **77**: 333-342. ([impact factor=4.192, rank= 12/113](#))
15. Tan, S., **Cheung, S.**, Ho, T. Y., and Liu, H. (2019). Metatranscriptomics of the bacterial community in response to atmospheric deposition in the Western North Pacific Ocean. *Marine Genomics*, **45**: 57-63. ([impact factor=2.143, rank= 138/175](#))
16. Lu, Y., Xia, X., **Cheung, S.**, Jing, H., and Liu, H. (2019). Differential distribution and determinants of ammonia oxidizing archaea sublineages in the oxygen minimum zone off Costa Rica. *Microorganisms*, **7(10)**: 453. ([impact factor=4.926, rank=54/137](#))
17. Li, Y., Jing, H., Xia, X., **Cheung, S.**, Suzuki, K., and Liu, H. (2018) Metagenomic insights into the microbial community and nutrient cycling in the Western Subarctic Pacific Ocean. *Frontiers in Microbiology*, **9**: 623. ([impact factor=6.064, rank=34/137](#))