# Special Issue

# Sea Ice Algal and Bacterial Productivity: Patterns, Processes and Environmental Change

## Message from the Guest Editor

Sea ice algal productivity is a critical component of polar marine ecosystems, initiating primary production in early spring as sunlight penetrates the ice. Equally important is sea ice bacterial productivity—including respiration and nutrient remineralization—which can exceed primary productivity in certain periods, underscoring microbial food web processes' role in regulating nutrient cycling and oxygen dynamics. Quantifying how primary and bacterial productivity contribute to and regulate carbon cycling is essential for understanding sea ice ecosystem structure and functioning, and critical for predicting how polar food webs and biogeochemical processes will respond to ongoing environmental changes. This Special Issue aims to advance and synthesize knowledge on the biological and environmental drivers of sea ice algal and bacterial productivity in polar ecosystems. We welcome studies investigating how these microbial communities respond to physical/chemical gradients and how their activity shapes broader ecological and biogeochemical processes, with contributions from both the Arctic and Antarctic encouraged.

## Guest Editor

Dr. Dorte Haubjerg Søgaard
Center for the Ice-Free Arctic Research (CIFAR), Aarhus Universitet, Aarhus, Denmark

## Deadline for manuscript submissions

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*Journal of Marine Science and Engineering*
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
jmse@mdpi.com

mdpi.com/journal/jmse

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## Message from the Editor-in-Chief

*Journal of Marine Science and Engineering* (*JMSE*, ISSN: 2077-1312) focuses on research in the fields of Ocean Engineering, Coastal Engineering, Physical Oceanography, Geological Oceanography, Marine Biology, and Marine Environmental Science. It publishes reviews, regular research papers, and short communications, as well as Special Issues on particular subjects. Our aim is to encourage scientists to publish their experimental and theoretical results in as much detail as possible. There is no restriction on the maximum length of the papers.

## Editor-in-Chief

Prof. Dr. Charitha Pattiaratchi
School of Engineering, The UWA Oceans Institute, The University of Western Australia, Perth, WA 6009, Australia

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