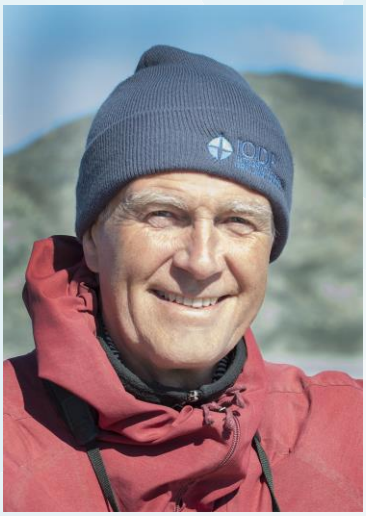
iFAST: The International Forum on Advanced Environmental Sciences and Technology

A series of distinguished seminars by eminent scientists

8 a.m. CST; 9 a.m. EST; 2 p.m. GMT; 10 p.m. Beijing

Wednesday, Dec. 8, 2021



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Bo Barker Jørgensen studies the microbial communities and biogeochemical processes of marine sediments with special focus on the transformations of organic carbon and sulfur. Jørgensen applies radiotracer and stable isotope experiments to detect and quantify the dominant processes and combines this with molecular biological techniques to identify the involved microorganisms and their activity. Jørgensen is a professor of microbiology at Aarhus University, Denmark. He was the founding director of the Max Planck Institute for Marine Microbiology in Bremen, Germany, and was the head of a research center for geomicrobiology in Aarhus. He is a member of the National Academy of Sciences, USA, a fellow of the Danish Royal Academy, and a fellow of the American and European Academies of Microbiology.

Cryptic processes – a new concept in marine sediment biogeochemistry

The seabed constitutes Earth's largest anaerobic bioreactor, in which organic matter produced in the photic water column becomes degraded by microorganisms or is buried over geological time. These biogeochemical processes in the seabed play important roles for the oceanic and atmospheric chemistry. Although studied for decades, however, the element cycling in marine sediments continues to give us new surprises. Researchers have called some the newly recognized processes "cryptic". I will discuss three examples of such processes: a) long-distance electron transport by cable bacteria, b) cryptic sulfur cycling through anaerobic sulfide oxidation in the sub-seafloor, and c) cryptic methane cycling where only methane oxidation was expected. These examples show how concurrent, opposed processes have remained undetected by geochemical analyses and modeling. The examples also illustrate novel principles of microbial physiology and show how electromicrobiology is becoming an increasingly important concept in marine biogeochemistry.

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Zoom webinar ID: 934 8142 2012 (https://zoom.us/j/93481422012)

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