

Title of the doctorate theme	Impact of eutrophication on prokaryotic and eukaryotic biodiversity based on eDNA analyses
Brief description of the topic	Warmer waters accelerate algal growth and decomposition rates in the Baltic Sea, leading to significant biodiversity loss through increased oxygen depletion, toxin accumulation, and the proliferation of microbial pathogens such as <i>Vibrio vulnificus</i> . The still ongoing cycle, due to global change, of warming-induced eutrophication, hypoxia, and pathogen outbreaks further accelerates biodiversity loss and destabilization of the coastal ecosystems. Based on the analysis of environmental DNA (eDNA) the successful PhD candidate will investigate the relationship between biodiversity and eutrophication for coastal regions of the Baltic Sea that are heavily, but to varying degrees, anthropogenically polluted. This will be done by investigating biodiversity and environmental parameters for different coastal regions of the Baltic Sea over a longer period of time and should help to evaluate the extent of this relationship and, if possible, to identify suitable nature-based solutions that can counteract the decline in biodiversity in the Baltic Sea.
Requirements for a candidate	The successful candidate is required to have a Diploma or Master degree in (micro-) biology or related fields such as bioinformatics, environmental sciences and technologies, or comparable. Profound knowledge of molecular biology techniques is essential. The candidate needs the capability to work in an inter-disciplinary research environment and very good English language skills.
Existing research infrastructure and support	The research is a co-operation between Klaipeda University and the Leibniz-Institute for Baltic Sea Research, Rostock Germany. The research infrastructure, laboratory and field equipment as well as methodological approaches are available (e.g. S1, S2 laboratories). The Environmental Microbiology group of ML ensures complementary funding and an international research environment. Further support may arise by the project CoastProtect (Matthias Labrenz, Marija Kataržytė, Nerijus Nika, Greta Gyraite) which will be submitted to the Paribas foundation.
How the topic advances the research capacity of the Klaipeda University	This topic will strengthen the collaboration of researchers in Klaipeda in the field of biodiversity, eDNA, vibrios, and nature-based solutions/agriculture and further advance these topics.
Potential scientific supervisor	Dr. habil. Matthias Labrenz, Professor for Environmental Microbiology, Leibniz Institute for Baltic Sea Research Warnemünde (IOW), Section Biological Oceanography Seestrasse 15, 18119 Rostock-Warnemuende GERMANY, Email: matthias.labrenz@io-warnemuende.de; Professor at Klaipeda University Marine Research Institute H. Manto 84, Klaipeda LT-92294 LITHUANIA, Email:Matthias.Labrenz@ku.lt; https://scholar.google.de/citations?user=RmtQALgAAAAJ&hl=de ; Environmental microbiologist
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