

**Admission commission University of Klaipeda**

Research and arts affairs office of Klaipėda University  
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**The Klaipėda University (Lithuania) is offering the Dissertation theme**

**“Applicability of the environmental DNA (eDNA) approach for the detection of NIS in dynamic coastal ecosystems”**

**for the Doctoral degree Studies in Ecology and Environmental Science.**

Remuneration is paid in accordance with Klaipėda University monthly gross salary. Additional funding and an international research environment is ensured by ML [Leibniz Institute for Baltic Sea Research Warnemuende (IOW), Germany; see below].

The doctorate study program in Ecology and Environmental science aims at development of marine natural sciences. Investigations are focused on interaction of natural and anthropogenic processes in the marine and coastal environments. The doctorate study program at Klaipėda University provides excellent research opportunities for geographers and geologists, physicists and chemists, mathematicians and computer scientists, environmental engineers, and, of course, biologists and ecologists.

The proposed dissertation theme is defined in a framework of the strategic research area “Development of innovative monitoring, data management and modeling methods and their application for forecasting and management of marine and coastal processes”.

**Job description**

Coastal food webs are currently impacted by altering climate and anthropogenic pressures, such as the introduction of non-indigenous species (NIS). Colonization by novel organisms can affect the diversity and trophic dynamics of local communities, with consequences to the health of the ecosystem. The early stages of colonization might be undetected by the current Baltic monitoring programs due to the temporal and spatial variability of the invasion process and to low abundances of the new species. For the development of an alternate monitoring tool, the PhD student will examine and test the potential of PCR-based detection of NIS via environmental DNA (eDNA) exemplified for non-indigenous species recently invaded the Baltic Sea. Their specific eDNA detection and quantification will be evaluated in laboratory incubation experiments. Optimized PCR and quantitative PCR (qPCR) protocols will be applied to known density gradients of these species along the Baltic coastline, and specific eDNA abundances compared to traditional, morphologically-based, quantifications. The outcome of this PhD thesis will be a validated workflow describing a fast, reliable and cost-effective eDNA approach to detect and identify NIS. This workflow has the potential to improve early detection and rapid response systems of existing MSFD and HELCOM monitoring strategies for the Baltic Sea.

The candidate should have good knowledge in molecular biology; good understanding of aquatic ecology is of advantage. The candidate needs the capability to work in an interdisciplinary research environment and very good English (or German) language skills.

The research is a co-operation between Klaipėda University, Thünen Institute of Baltic Sea Fisheries, Germany (contact person: D. Oesterwind), 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, Baltic Sea cruises and traditional monitoring).

Deadline of application submission for admission to competition: 2017-09-01, 10:00 – 2017-09-14, 13:00

Application and travel costs cannot be reimbursed.

**For more information please visit:**

<https://www.ku.lt/admission/application-procedure-for-doctoral-studies/>

**Or please contact:**

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