



PhD Studentship available in Iceland

Theme:

“Impacts of per- and poly-fluoroalkyl substances (PFASs) on Arctic and sub-Arctic marine Diatoms and their associated symbionts”

Background

Applications are invited from suitably qualified candidates for a full time PhD (structured PhD program) in Prof. Dr. Oddur Þór Vilhelmsson's Research Group at the Faculty of Natural Resource Sciences, University of Akureyri in collaboration with Dr. Bettina Scholz (BioPol ehf) <https://www.researchgate.net/profile/Bettina-Scholz>, the University of Iceland, the Reykjavik University and IceTek.

We seek to recruit an early career scientist with a keen interest in **diatom biology, biochemistry and microbiology**. The position is embedded in a research project funded by the Icelandic Research Fund (RANNIS) and is available from April 2023 for 3 years.

Complex mixtures of contaminants, including per- and poly-fluoroalkyl substances (PFAS), have been found in surface and groundwater worldwide and detected globally in the tissues of fish, birds, and marine mammals. Particularly, short-chained PFAS are emerging contaminants that are coming under increasing scrutiny. These man-made chemicals are largely resistant to biotic transformations due to their extremely strong C–F bonds. They have been shown to cause disruption to key cellular functions and can cause negative biological effects in animals and humans. Currently, there is a paucity of data on the effects of PFAS on marine aquatic life, limiting the ecological risk assessment. In this context, the ability of marine diatoms - an important part of aquatic food webs and geochemical cycles - to absorb PFASs is unknown and their impacts regarding altering species interactions at the basis of the food-web are lacking. Hypothesizing that exposure of marine diatoms to PFASs leads to reduced fitness of the organisms by alterations of their physiology and composition of associated symbiotic bacterial consortia, thereby compromising the palatability and detectability of diatoms by epi- and endobiotic fungal (e.g., chytrids) and fungal-like parasitoids (e.g., oomycetes), the project focuses on the effects of PFASs on diatom molecular biochemistry with special consideration of interspecific interactions (predation and symbiosis) in defined laboratory experiments.

The successful candidate will

- Undertake and be responsible for experimental diatom cultures under controlled conditions.
- Conduct research focusing on diatom fitness traits (e.g., photosynthesis) using metabarcoding and metabolomics-based approaches.
- Undertake extraction and analysis (e.g., GC-MS).
- Interact with the wider project team. Travel to partner laboratories (Reykjavik and abroad) will be required.
- Be highly motivated and a good communicator (oral and written skills).

Some previous research experience in the field will be an advantage.

Requirements

Applicants should have a good post graduate degree (First class or equivalent) in an appropriate discipline (Marine Science, Plant Science, or similar). The successful candidate should be highly self-motivated and have some background and particular interest in diatom biology and biochemistry. In addition to a relevant degree(s), the successful candidate will ideally have some additional research experience in the field of algal biology or biotechnology, microbiology, chemical extraction techniques and basic analytical techniques for the determination of algal biochemical compositions (e.g., HPLC, GC). A valid driving license is essential.

Award

The PhD student will be registered at the Centre for Doctoral Studies at University of Akureyri (UNAK) and placed officially in the Research Group at the Faculty of Natural Resource Sciences, working under the supervision of Dr. Bettina Scholz at BioPol ehf and Prof. Dr. Oddur Þór Vilhelmsson. Appointment is conditional on meeting the eligibility requirements for PhD enrollment at the University of Akureyri.

<https://www.unak.is/english/university/governance/laws-and-regulations/regulations-on-doctoral-studies-and-doctoral-examinations-at-the-university-of-akureyri> The Fellowship will start as soon as possible (latest May 2023) and provides a stipend of 491.724,-ISK per month.

Application Procedure

Please submit an electronic copy of your Curriculum Vitae with 3 referees' contact details, a copy of your diploma, and a letter stating your interest and suitability for the PhD position to: Dr. Bettina Scholz (bettina@biopol.is).

Closing date: Monday March 20th, 2023, 5 pm (GMT) Icelandic time.