PhD Position "Species-environment interactions in plankton community in response to climate change" (m/f/d)

**Background**

Planktonic communities, particularly in polar regions, experience pronounced environmental changes in terms of temperature and nutrient availability, which are and will be further altered by the effects of climate change. Both temperature and nutrient have profound yet contrasting effects on the diverse functional unicellular planktonic groups (autotrophs, heterotrophs and mixotrophs) with consequences for ecosystem functioning and biogeochemical cycling. Therefore, it is of paramount interest to study not only the species x environment interaction in terms of changing conditions, but also the effects on species x species x environment interactions. The outcome of the species x species x environment interactions (e.g. temperature, light and nutrients, according to IPCC scenarios) will be evaluated at the level of single cells and at the population level to account for different adaptive strategies. A single individual (i.e. genotype) can adjust its phenotype by physiological acclimation; at the population level, a single species can change its genotypic composition by evolution (including clonal sorting).

We will test whether the allocation of energy into acclimation, adaptation and species interaction processes is connected to trade-offs. These trade-offs are important (qualitatively and quantitatively) for eco-evolutionary models, which are needed to understand the planktonic community response and associated ecosystem functions in a changing world scenario. This PhD project is linked to the PD project “Adaptive mechanisms in phytoplankton community and population dynamics under Arctic heatwaves”.

The position is part of our recruiting initiative AWI INSPIRES - International Science Program for Integrative Research in Earth Systems. AWI INSPIRES aims at strengthening our new research program “Changing Earth, Sustaining our Future”. Details about all open positions and the general application requirements can be found at [www.awi.de/en/inspires](http://www.awi.de/en/inspires).

**Tasks**

You will be

- Studying microplankton communities in micro-mesocosm experimental set-ups.
- Selecting key species to define population reaction norms to climate relevant stressors.
- Assessing growth, primary production and loss rates by pathogens and grazing.
- Sampling plankton communities in Polar Waters around Svalbard and Greenland in conjunction with established field campaigns.
• Analyzing metabarcoding, metagenomics and metatranscriptomics data from field samples, as well as from the experimental set-ups.
• Synthesizing information to describe the impact of climate-relevant stressors to natural communities in a multifactorial set-up aligned with eco-evolutionary modelling.

Requirements
• Master in Biology, Biochemistry, Environmental Sciences or related fields.
• Experience with molecular biology and genomics.
• Candidates with prior experience in experimental evolution will be preferred.
• Willingness to participate in ship and field-based sampling campaigns in Polar Regions.
• Excellent English language skills and enjoy working in an international and interdisciplinary team.

Further Information
For further information please contact Dr. Uwe John (Uwe.John@awi.de, +49(471)4831-1841) or Prof. Dr. Bettina Meyer (Bettina.Meyer@awi.de, +49(471)4831-1378).

The position is limited to 3 years. The salary will be paid in accordance with the Collective Agreement for the Public Service of the Federation (Tarifvertrag des öffentlichen Dienstes, TVöD Bund), up to salary level 13 (66%). The place of employment will be Bremerhaven.

All doctoral candidates will be members of AWI’s postgraduate program POLMAR and thus benefit from a comprehensive training program and extensive support measures.

This characterizes us
• our scientific success - excellent research.
• collaboration and cooperation - intra-institute, national and international, interdisciplinary.
• opportunities to develop – on the job, aiming at other positions and beyond AWI.
• a culture of reconciling work and family – audited, and even more than that.
• our outstanding research infrastructure – ships, stations, aircraft, laboratories and more.
• an international environment – everyday contacts with people from all over the world.
• having an influence – fundamental research with social and political relevance
• flat hierarchies – freedom and responsibility.
• exciting topics – also in technology, administration and infrastructure.

Equal opportunities are an integral part of our personnel policy and we encourage women to apply.

Disabled applicants will be given preference when equal qualifications are present. The AWI fosters the compatibility of work and family through various means. Because of our engagement in the area of work-life compatibility we have been awarded the certificate “Career and Family”.

We look forward to your application!
Please forward your application with letter of motivation explaining why you want to join one of our research areas, two letters of recommendation and a list of publications by February 16th, 2020 exclusively online.

Selected candidates will be invited to present their research ideas and motivation during the “Annual recruitment days”, planned from 16 to 24 March 2020 in Bremerhaven, Germany.

Reference number 20/35/G/INSPIRES-b