



The Alfred Wegener Institute for Polar and Marine Research (AWI) is a member of the Helmholtz Association (HGF) and funded by federal and state government. AWI focuses on polar and marine research in a variety of disciplines such as biology, oceanography, geology and geophysics thus allowing multidisciplinary approaches to scientific goals.

The Helmholtz Young Investigators Group *Iceflux* seeks a

## Post-doctoral researcher (f/m) sea ice habitat modeling

in the interdisciplinary cross-section field of ecological statistics and physical modelling, starting September 1st 2014 or before at the AWI in Bremerhaven.

### Background:

Sea ice coverage is declining rapidly in the Arctic Ocean and large parts of the Southern Ocean. These changes will significantly affect ecosystem functioning, because sea ice ecosystems thrive significantly on carbon produced by ice-associated microalgae. Species feeding in the ice-water interface layer play a key role in transferring sea ice-derived carbon into the pelagic food web. To understand the ecological consequences of changing sea ice habitats at relevant spatial and temporal scales, it is pivotal to quantify the relationship of under-ice fauna distribution with physical sea ice habitat properties. Such species-habitat relationships can then be projected in space and time using remote sensing data and modeling approaches. This approach will allow first estimates of the large-scale sensitivity of sea ice ecosystems to climate change. A bi-polar perspective will yield new insights about the differences and similarities between Arctic and Antarctic ecosystems for their biodiversity, productivity, and resilience to environmental change.

### Tasks:

Your primary objective will be to develop tools for the projection of statistical species-habitat relationships from field data on large spatial scales using geo-statistics, satellite data and/or modeling techniques. You will be responsible for field sampling, and for the statistical analysis of biological and environmental datasets as a prerequisite for higher level analyses. You will participate in at least 1 field expedition in the Arctic and/or Antarctic sea ice zone using a newly developed under-ice net equipped with a bio-environmental sensor array. Depending on scientific need and your expertise, methods applied may include statistical models (GLM, GAM, GAMM,...) and their geo-spatial application, analysis of satellite data, process modeling (ecosystem models), and physical models (sea ice-ocean models). You will work in close contact with biologists, AWI's sea ice physics group, and with physical oceanographers. There will further be ample opportunity for independent and collaborative research with the KlimaCampus Hamburg, as well as with the international project partners of *Iceflux*.

### Requirements:

- PhD in biology or earth sciences
- High expertise in at least one of the following fields: statistical modeling, geo-statistics, habitat modeling, ecosystem modeling, or physical modeling
- Proficiency in the use of R or comparable statistical software (e.g. Matlab) and/or GIS applications
- High motivation to find unconventional solutions to scientific problems, ability to 'think out of the box'
- High self-motivation skills, endurance in adverse conditions, and ability to integrate in a small, closely cooperating team
- Professional level of spoken and written English
- High motivation to publish, proven by a good publication record
- Good communication skills and interest in education and outreach activities

The position is limited to 2 years and may be extended to up to 3 years. The salary will be paid in accordance with the German Tarifvertrag des öffentlichen Dienstes TVöD Bund. The place of employment will be **Bremerhaven**. Part-time employment will be possible.

For further information please contact **Dr. Hauke Flores** (hauke.flores@awi.de).

AWI aims to increase the number of women in the scientific staff. Female candidates are therefore especially asked to apply. Disabled applicants will be given preference when equal qualifications are present; please see the notification on our homepage under job offers/jobs. 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".

Please forward your applications with the standard documentation (cover letter, letter of motivation, CV and two references/letters of recommendation) referencing **code 40/D/Bio** by **June 6th, 2014**, by **e-mail** (all documents merged into **one PDF** file) to: personal@awi, cc to hauke.flores@awi.de.