GEOMAR Helmholtz Centre for Ocean Research Kiel is a foundation of public law jointly financed by the Federal Republic of Germany (90 %) and the state of Schleswig-Holstein (10 %) and is one of the internationally leading institutions in the field of marine sciences. Currently GEOMAR disposes over an annual budget of approx. 80 million Euro and has approx. 1000 employees.

The research unit Evolutionary Ecology of Marine Fishes of the research division "Marine Ecology" is offering a position as

Postdoc (m/f/d) in Comparative Genomics

starting on May 1st, 2020 or upon agreement.

In the Research Group "Parental investment and immune dynamics", we study the evolution of pregnancy focusing on syngnathids (pipefishes and seahorses) with their unique male pregnancy. This reproduction strategy evolved from carrying eggs loosely attached to the body to full pregnancy encompassing several intermediate forms. Thus, syngnathids present an ideal system to identify changes associated to the evolutionary steps from egg laying towards advanced pregnancy. Experimentally, we investigate changes in the immune system that allowed male pregnancy to evolve and assess the molecular basis associated to the evolution of syngnathids' increasingly complex brooding structures and pregnancy. To do so, we combine a diversity of molecular and developmental biological methods, genetic engineering (CRISPR/ cas9) with comparative genomics and transcriptomics. We have recently sequenced 13 genomes of pipefishes and seahorses.

Job Description
Using comparative genomics, we aim to elucidate the coevolution of the immune system with male pregnancy. We recently determined that parts of the adaptive immune system have been lost during the evolution of male pregnancy. Comparative analyses of specific immune gene families and developmental pathways will permit to gain insight into how the immune system has been remodeled and how this relates to male pregnancy evolution. We furthermore aim to identify gene co-option accompanying the evolution of pregnancy and the establishment of new genes with subsequent neo- or sub-functionalization. To do so, transcriptomic analyses of genes that are differentially expressed during male pregnancy should be combined with genome-wide selection analyses. The project will be conducted in close collaboration with the experimental PhD students and postdocs in the laboratory that are focusing on genetic engineering of pregnancy genes, gene expression visualization and tissue transplant experiments.

Qualification
The successful candidate is required to have a PhD in Natural Sciences (Biology, Bioinformatics or a related discipline). We expect a highly motivated Postdoc with a keen interest and background in comparative genomics, transcriptomics and evolutionary biology, that will allow the candidate to efficiently analyze the available data-sets and prepare manuscripts to be submitted to respected peer-reviewed international scientific journals. Knowledge of programming languages (Perl/Python/R) is thus required. Experience with gene annotation, orthologous gene identification and methods of detecting selection would be a plus. Also, familiarity with genes of the immune system, developmental pathways, and basic knowledge of fish biology would be desirable. Close interactions with the other PhD students and postdocs in the project at GEOMAR and with our collaboration partners at the Centre for Ecological and Evolutionary Synthesis (University of Oslo, Norway) will stimulate

intellectual exchange and facilitate collaborations. Proficiency in spoken and written English is expected.

The position is available for a funding period of three years. The salary is up to the class E13 TVöD-Bund of the German tariff for public employees. This is a full-time position. The position can be split.

The position is embedded in a Starting Grant from the European Research Council focusing on male pregnancy (MALEPREG) and is in close collaboration with the Centre for Ecological and Evolutionary Synthesis at the University of Oslo. Several visits and longer research stays in Oslo are planned for the successful candidate. The genomes are already sequenced and assembled, the project can thus start immediately.

The GEOMAR, the University of Kiel and the Max Planck Institute for Evolutionary Biology in Plön offer a stimulating research environment with strong focus on Evolutionary Biology.

Kiel is the capital of the most Northern state of Germany, directly located at the coast of the Baltic Sea. The town offers many opportunities for leisure activities, in particular people enjoying water sports will love the environment.

GEOMAR Helmholtz Centre for Ocean Research Kiel seeks to increase the proportion of female scientists and explicitly encourages qualified female academics to apply.

GEOMAR is an equal opportunity employer and encourages scientists with disabilities to apply. Qualified disabled applicants will receive preference in the application process.

Please send your application for this post including a one-page motivation letter, your CV, and contact details of two referees via email **in a single pdf-file** mentioning the keyword **"Postdoc_Malepreg"** in the subject line. Please send your application not later than **April 5th, 2020** to the following email address:

bewerbung@geomar.de

As soon as the selection procedure has finished, all your application data will be removed according to data protection regulation.

For further information regarding the position and research unit please contact Dr. Olivia Roth (oroth@geomar.de) or visit our group homepage (https://www.geomar.de/en/mitarbeiter/fb3/ev/oroth/researchgroup-oroth).

GEOMAR is a member of the Helmholtz Association and the German Marine Research Consortium (KDM). For further information please visit www.geomar.de or www.helmholtz.de.

GEOMAR is committed to a non-discriminatory personnel selection. Our job advertisements address all people.