Press Release

GEOMAR
Helmholtz Centre for Ocean Research Kiel

42/2022

Young cutting-edge research honored by Petersen Foundation

Prof. Dr. Werner Petersen Foundation awards scholarships as well as young talent prizes 2022 for three doctoral theses and for knowledge transfer with interactive posters

21 December 2022 / Kiel. **Very good doctoral theses or theses passed with distinction by three young scientists of GEOMAR Helmholtz Centre for Ocean Research Kiel will be honored this year by the Prof. Dr. Werner Petersen Foundation at a festive event. In addition, a prize for outstanding commitment to knowledge transfer and inter- or transdisciplinary research will be awarded for the first time for an exhibition of interactive posters and an interactive lecture series. The works will be funded with 2,500 euros each.**

"This year, we are once again pleased to be able to honour three excellent theses by doctoral students. This is both a recognition of the young scientists and an investment in the top research of the future. ", says GEOMAR Director Professor Dr. Katja Matthes. "With the Transfer Prize, we are honoring a particularly creative approach to communicating science in an approachable and catchy way. We congratulate them on this well-deserved achievement and wish all the honorees every success in their next career steps."

The thematic focus of the degrees demonstrates the great diversity of GEOMAR research: Dr. Anabel von Jackowski investigated the seasonal dynamics of organic matter and its influence on heterotrophic bacteria and archeans in the Arctic Ocean. Dr. Yueyang Xia designed a model to better understand the tectonic structure of the subduction zone on the Java margin, Indonesia. Dr. Veronique Merten focused her research on mapping the ecology and biodiversity of multicellular organisms in the deep sea by analyzing environmental DNA – a novel research method.

The design of interactive, so-called "living posters" to depict microbiomes in deep-sea sponges was highlighted separately as an innovative knowledge transfer achievement. These are regular print displays that can be read using an app and then play pre-programmed scientific content on the electronic device. The posters serve as a ticket to make research results accessible to diverse groups of users. In addition to this approach, developed with a transdisciplinary team of students, award winner Dr. Kathrin Busch also initiated the interdisciplinary lecture series on "Visualization in Ocean Research" in collaboration with Dr. Tom Kwasnitschka from GEOMAR.

In addition, two exchange grants were awarded to Michel Kühn for his research stay at Southern Methodist University, Dallas (USA) to develop a numerical model of pore pressure on the tectonically active Montserrat-Bouillante Rift and to Hendrik Großelindemann for a research stay at the National Center for Atmospheric Research, Boulder (USA) to study the Agulhas inflow and its influence on the Atlantic Meridional Overturning Circulation (AMOC).

GEOMAR Director Professor Dr. Katja Matthes thanks the Prof. Dr. Werner Petersen Foundation for its long-standing support in the field of promoting young scientists at GEOMAR already since 2014. The foundation, which is based in Schleswig-Holstein, aims to promote science, research, technology and culture. The Petersen Young Scientist Awards are presented annually during the GEOMAR Christmas Party and are endowed with 2,500 euros.

The honorees and their work in detail:
Dr. Anabel von Jackowski, from the Marine Biogeochemistry research department, was recognized for her dissertation entitled "Seasonal Dynamics of Organic Matter Turnover in the Arctic Ocean," with the grade magna cum laude – very good.
After studying in the U.S. and earning a master's degree at the University of Bremen and the Max Planck Institute for Marine Microbiology, she moved to GEOMAR and Kiel University (CAU) in 2018 for her doctorate in natural sciences. Her thesis research focused on the growth season of microorganisms in the Arctic Ocean, which will change in the future due to human-induced climate change, with a focus on the release of organic matter by plankton and how these seasonal dynamics affect the carbon cycle as well as the heterotrophic microbial community. Her doctoral supervisor was GEOMAR professor Dr. Anja Engel.
Starting in January 2023, Dr. Jackowski will be a postdoctoral researcher at the Laboratoire d'Océanographie Microbienne in Banyuls sur Mer, France.

Dr. Véronique Juliette Merten's doctoral dissertation, from the Marine Ecology research department, titled "Pelagic deep-sea metazoan biodiversity and ecology revealed by environmental DNA analysis in combination with other censuses," was graded summa cum laude.
Dr. Merten came to GEOMAR and CAU already after her bachelor's degree in 2014 at the University of Hamburg and stayed there for both her master's and doctoral degrees. During her PhD, she developed a barcoding approach to collect diversity and distribution data of deep-sea squid by analyzing water and sediment samples. To do this, she used the novel method of environmental DNA (eDNA) analysis. She also identified fish and squid that potentially serve as sinking carbon sources to deeper ocean levels after their death. Further, she established baseline biodiversity and distribution patterns of key organisms in the deep ocean and placed these patterns in an ecological context. Her doctoral advisor was GEOMAR scientist Dr. Henk-Jan Hoving.
Dr. Merten continues to enrich GEOMAR with her expertise as a postdoc.

Dr. Yueyang Xia from the research unit Dynamics of the Ocean Floor received his PhD with honors on the topic: "A structural model for the Java margin subduction zone, Indonesia, from multi-channel and wide-angle seismic data".
Dr. Xia studied at the University of Geosciences China until his master's degree and moved to Kiel University and the Marine Geodynamics Research Unit at GEOMAR for his PhD. His doctoral research focuses on the earthquake-relevant plate margin off Java and the Sunda Islands to understand the current tectonic structure, the oceanic crustal relief, and the temporal evolution of the large volume of accretionary wedge mass – an accumulation of sediments by overthrusting. Insights into tectonic processes are particularly important for gaining deeper understanding of tsunami earthquake occurrences. Dr. Xia is currently based in China.

The recipient of the Transfer Award for outstanding commitment to knowledge transfer and inter- or transdisciplinary research, **Dr. Kathrin Busch**, from the research area Marine Ecology, is working on marine symbioses. After her bachelor studies in Würzburg and Umeå University Sweden, she graduated with a master's degree and a very good dissertation at CAU and GEOMAR. The "interactive posters" on deep-sea sponge microbiomes, which play scientific content with the help of an app, provide a close access to complex topics and data for a broad audience. To strengthen interdisciplinary exchange on this topic, Dr. Busch also initiated an interactive lecture series on "Visualisation in Ocean Research" by and for GEOMAR staff, which resulted in an interdisciplinary visualisation atlas. She will continue her research in Halifax, Canada, in the future.

Links:
www.geomar.de GEOMAR Helmholtz Centre for Ocean Research Kiel
https://petersen-stiftungspreis.de Prof. Dr. Werner Petersen Foundation

Images:
At www.geomar.de/n8769 images are available for download.

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