

CAMPUS AWARD for Sea Grapes and German Lessons

The 2024 CAMPUS AWARD: Research for a Sustainable Future winners are biologist Dr. Lara Stuthmann, postdoctoral researcher at the Leibniz Centre for Tropical Marine Research (ZMT), and prospective primary school teacher Laura Sheng. The award, endowed with 3,000 euros, was presented on April 25.

Two Award Winners among Outstanding Nominations

For her dissertation at the University of Bremen, Lara Stuthmann from the ZMT investigated how sea grapes can be grown in an environmentally friendly way. The sea grape is a green algae, which is also called green caviar because of its shape and texture. It contains important antioxidants and other nutrients such as proteins and minerals. In various parts of Asia, eating sea grapes is common, but in Europe they are not yet approved as food and are therefore only sold for decorative purposes. The sea grape is an important and healthy food, which is gaining in importance for supplying an ever-growing world population.

Improving the Cultivation of Sea Grapes in Aquaculture

Aquacultures for shrimp or fish cover entire regions in Asia. They have negative effects on seas and oceans in many places, lead to the loss of habitats for animals and plants, and contribute to the spread of parasites. Growing healthy sea grapes in aquaculture is relatively environmentally friendly and quick by comparison. With her research, Lara Stuthmann wants to contribute to increasing the quality and quantity of production in an ecologically and economically sustainable way. For her studies, the Bremen scientist closely examined the production chain of sea grapes in Vietnam. In the Khanh Hoa province in the southeast of the country, sea grapes have been grown since the beginning of the 21st century, mainly in aquaculture ponds. For her studies, Stuthmann worked closely with algae farmers on site for seven months and cooperated with researchers from the Institute of Oceanography in Nha Tang.

Results of the Investigations Serve as Recommendation to Local Production Sites

Lara Stuthmann found that adapted light exposure and resource-efficient co-cultivation with other organisms can improve the quality of sea grapes and increase their antioxidant content. For example, by increasing sunlight exposure, the antioxidant activity can be more than doubled and raised to the level of pomegranates.

A red algae used for carrageenan (jelling agent) could be grown in the immediate vicinity of the sea grapes and at the same time serve as shade. If the algae are then cultivated together with suitable marine animals, they form a natural cycle in which feed and waste residues are optimally recycled. The researcher came to the conclusion that the waste waters of the white-footed shrimp could possibly be suitable for fertilizing the algae. Meanwhile, interest in combined algae and shrimp production in land-based recirculation aquaculture is also growing in Germany – a positive development due to the resulting shorter transport routes.

The CAMPUS AWARD jury was convinced that Lara Stuthmann not only took care of a crucial problem on site, but also broadened their perspective. “A sustainable shift in the production of our food from land to water could make an important contribution to the supply of high-quality products to the world population, provided that it is environmentally and socially sustainable”, the jury concluded.

The jury was also particularly impressed that Lara Stuthmann is sharing her many years of experience in algae cultivation with new doctoral and master's and bachelor's students in her research group, instructing them in the topic, and thus ensuring that the studies are continued. In addition, the award winner actively participated in sharing her research with the general public.

Teaching Primary School Children about Climate Change and Sustainability

Is it possible to address climate change or sustainability in primary school classes or do such educational topics overwhelm children cognitively and emotionally? How can such difficult and potentially frightening topics be tied in to primary school subjects?

Laura Sheng pursued these and similar questions in her master's thesis. The prospective primary school teacher for the subjects of German, mathematics, and English used the picture book “Polymeer,” which has been honored by the Stiftung Buchkunst, in her lessons. The author Alexandra Klobouk tells of a world in 2043, where the poles have melted and sea levels are rising. Holland has disappeared. Despite the apocalyptic content of the book, the current postgraduate intern had positive experiences using this to teach skills in her class. Sheng was able to observe how her students gained new perspectives, developed a networked way of thinking, negotiated their ideas of justice with each other, and demonstrated their creativity in shaping the future.

Refuting a Possible Prejudice

Laura Sheng was able to show that the children acquired new skills through early exposure to the consequences of climate change and that the topic is very suitable for primary school education. Contrary to the prevailing widespread fear that sustainability-related problems could scare children, the students were rather optimistic and developed creative approaches and proposed solutions.

Without neglecting the goals set in the curriculum for teaching German, Laura Sheng was able to address education for sustainable development and climate change in her primary school class. She has thus made an important contribution to the achievement of the United Nations' 17 Sustainable Development Goals. Point 4 also deals with education for sustainable development: By 2030, it should be ensured that “all learners acquire the knowledge and skills needed to promote sustainable development” www.unesco.de/bildung/bildung-fuer-nachhaltige-entwicklung (in German only).

The jury was particularly impressed that Laura Sheng was not deterred by established views when faced with difficult pedagogical questions, but pursued her path. In the opinion of the jury, she has thus done groundbreaking work. “Laura Sheng has laid the foundation for a new standard. If we want to implement sustainable development, we have to start with our children”, said the unanimous vote of the jury.

The CAMPUS AWARD

The CAMPUS AWARD honors outstanding theses produced on the campus of the University of Bremen that are thematically dedicated to the sustainable use of resources, the protection of the environment, the climate, and the oceans. The award was established in 2016 and is presented once a year by the KELLNER & STOLL FOUNDATION FOR CLIMATE AND ENVIRONMENT, the Leibniz Centre for Tropical Marine Research (ZMT), the University of Bremen, and the University of Bremen Alumni Network. It is endowed with a total of 3,000 euros.

Further Information:

www.campuspreis.de (in German only)

www.leibniz-zmt.de

www.uni-bremen.de/en/alumni

www.uni-bremen.de/en/

www.stiftung-klima-umwelt.org (in German only)



At the award ceremony on 24.4.2024 at the University of Bremen, all nominees were honored for their work in addition to the award winners. Shown here with their supervisors, the jury and the organizers of the Campus Prize | Photo: Matej Meza

Top row (from left): Jury member Prof. Dr. Justus Notholt (University of Bremen), Dr. Marion Glaser (ZMT, supervisor of the nominated Master's thesis by Lena Knoop), Prof. Dr. Elisabeth Hollerweger (University of Bremen, supervisor of the Master's thesis by award winner Laura Sheng), Dr. Karin Springer (University of Bremen, supervisor of prizewinner Lara Stuthmann's Master's thesis), jury member and laudator Prof. Dr. Martin Zimmer (ZMT and University of Bremen, supervisor of Anne Broocks' nominated doctoral thesis), jury member and laudator Prof. Dr. Michal Kucera (University of Bremen) and Reiner Stoll (KELLNER & STOLL-FOUNDATION FOR CLIMATE AND ENVIRONMENT).

Middle row: Dr. Katerina Vatsella (Board of Alumni of the University of Bremen e.V.), Prof. Dr. Marie Fujitani (ZMT and University of Bremen, supervisor of Alice Pole's nominated master's thesis), Prof. Dr. Jutta Günther (Rector of the University of Bremen and Chairwoman of the Board of Trustees of the University Foundation), Alice Pohle (ZMT and University of Bremen, nominated for master's thesis), Dr. Rita Kellner-Stoll (KELLNER & STOLL FOUNDATION FOR CLIMATE AND ENVIRONMENT), Anjleen Hannak (ZMT and University of Bremen, nominated for Master's thesis), Philipp Thomanek (University of Bremen, nominated for Master's

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Front row: The award winners Laura Sheng with son Leo (University of Bremen, awarded for her Master's thesis) and Dr. Lara Stuthmann (ZMT and University of Bremen, awarded for her doctoral thesis).
