ICBM – Alumni News #13

Newsletter – September 2021

Issue 13, Year 5

Welcome to the thirteenth ICBM-Alumni-Newsletter

Dear ICBM-Alumni,

we heard of many worrying news in the past month, which partly call to action! Especially worrying for us are the increase of the frequency and dimensions of disasters related to climate. Therefore, we are glad that the ICBM is getting busier and our science is back on a roll, due to the increasing immunization of the population.

In the thirteenth issue of our Newsletter, we report on exciting scientific findings, scientific prices, and new professors at the ICBM. We draw our attention to interesting personalities linked to the University of Oldenburg and inform you about a symposium and the new format of our Newsletter.

We wish you some more sunny and relaxing summer days.

All the best,

Ferdinand Esser and Tabea Hildebrand

Topics of the issue

SCIENCE AT THE ICBM

„Gute Küste Niedersachsen" – "Good coast Lower Saxony"

What is a good coast on which we can live and operate sustainably and responsibly, safe from natural hazards, in harmony with nature and embedded in the grown cultural landscape? This is the central question with which the project "Good Coast Lower Saxony" is concerned, a research association of the

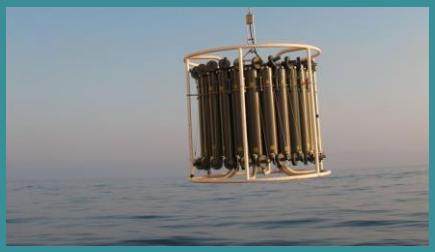
Leibniz University Hannover (spokesman function), the University of Oldenburg and the Technical University of Braunschweig. [...]

Against the background of climate change, the scientists at the three universities are developing extensive options for action and management in coastal protection together with the responsible state companies and the population in demand-oriented research. The area around Spiekeroog is one of the “real laboratories” within the project. The background to the measurements there is the planned renewal of a large coastal protection structure, a groyne, in the Harle. The purpose of the measurement campaign is to better understand the flow conditions in the vicinity of the groyne and to investigate whether, for example, pollutants accumulate at certain points. In a direct comparison with the measurements in the unobstructed Seegatt, the project team wants to get an overview of the current state of the environment in order to draw conclusions about the changes that have been triggered. [PR 136/21 – 22.07.21]

Sulfur enhances carbon storage in the Black Sea

The Black Sea is an unusual body of water: below a depth of 150 metres the dissolved oxygen concentration sinks to around zero, meaning that higher life forms such as plants and animals cannot exist in these areas. At the same time, this semi-enclosed sea stores comparatively large amounts of organic carbon. A team of researchers led by Dr Gonzalo Gomez-Saez and Dr Jutta Niggemann from the Institute for Chemistry and Biology of the Marine Environment (ICBM) at the University of Oldenburg, Germany, has now presented a new hypothesis as to why organic compounds accumulate in the depths of the Black Sea – and other anoxic (oxygen-depleted) waters in the scientific journal Science Advances. The researchers posit that reactions with hydrogen sulfide play an important role in stabilizing carbon compounds. „This mechanism apparently contributes to the fact that there is more than twice as much organic carbon in the waters of the Black Sea as in oxygen-rich marine areas“, says Niggemann. „This provides a negative feedback in the climate system that can counteract global warming over geological periods.“ […]

Given that huge amounts of carbon are stored in dissolved organic matter – the world’s oceans contain roughly as much dissolved carbon as there is CO2 in the Earth’s atmosphere – the results of this new study are also relevant for the climate. „The volume of ocean waters completely depleted of oxygen quadrupled between 1960 and 2010. Consequently, this sulfur-based mechanism of carbon storage could influence the chemistry of the oceans in the future“, says Gomez-Saez, the lead author of the study. But this negative feedback is too weak to have a noticeable impact on climate change under the current



So-called rosette samplers are used to take water samples at different water depths. [Foto: Nelli Sergeeva]

conditions, he adds. In geological history, however, there have been several periods during which large areas of the oceans were oxygen-deficient. During these periods this mechanism could have contributed to long-term removal of carbon dioxide from the atmosphere. [ICBM – 17.06.2021]

Original publication: Gonzalo V. Gomez-Saez et al: "Sulfurization of dissolved organic matter in the anoxic water column of the Black Sea", Science Advances, 7, eabf6199. DOI: 10.1126/sciadv.abf6199

How well do the North and Baltic Seas store carbon?

The oceans currently absorb a third of man-made carbon dioxide emissions. The greenhouse gas dissolves directly in the water. It is also absorbed by microorganisms through photosynthesis and partly converted into insoluble minerals. In this way, the oceans withdraw carbon from the atmospheric cycle and store it for a longer period of time. A new research project at the University of Oldenburg is investigating how stable these various carbon stores are in the North and Baltic Seas. […] The aim of PROCARBON is to investigate how the various carbon stores in the North and Baltic Seas react to climate change and other human-made environmental changes. [PR 069/21 – 29.04.2021]

BGC-Argo Floats deployed in the Baltic Sea

Comparison of novel light sensors and conventional systems: The ICBM research group Marine Sensorsystems is currently testing four diving buoys for biogeochemical („BGC") measurements, so-called BGC Argo floats, in the Baltic. The floats were deployed in tight collaboration with the Leibniz Institute for Baltic Sea Research Warnemünde from aboard RV "Elisabeth Mann Borgese" to the Gotland Deep, about 280 kilometres north of Kaliningrad. [SR – 28.04.2021]

On the quest for Nemo's clock

Switch from nocturnal to diurnal activity identified: An international team around the doctoral candidates Gregor Schalm and Kristina Bruns investigated the behavioural and genetic basis of diel rhythms in anemonefish and thus was able to identify the internal clock of the animals. Schalm and Bruns, who do their research at the ICBM associated research group for Animal Biodiversity and Evolutionary Biology (IBU), headed by Prof. Dr Gabriele Gerlach at the Institute for Biology and Environmental Sciences at the University of Oldenburg, were supported by colleagues from Germany, Italy and Australia. Their findings have been published in the recent issue of Scientific Reports. […]

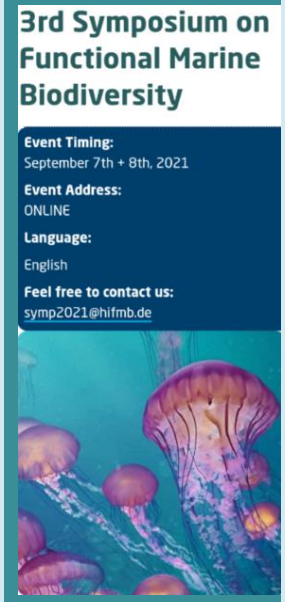
Resting clownfish and sea anemone, ready for sleeping, at their natural habitat in the

A genetic analysis of six core circadian clock genes revealed comparable rhythmic expression patterns in larvae and juvenile clownfish. Therefore, the age-dependent activity patterns could not be contributed to these genes. On the basis of embryonic cell lines in cell cultures, the scientists eventually succeeded in demonstrating that clown anemonefish possess an endogenous timer similar to the well-studied internal clock of the zebrafish (Brachydanio rerio). „Our study provides a first basis to understand the migratory behaviour of coral reef fish and to elucidate the multi-layered interaction of anemone fish, sea anemones as well as their zooxanthellae endosymbionts“, Gabriele Gerlach, head of the resarch group, points out. [SR – 26.03.2021]

Original publication: Gregor Schalm; Kristina Bruns; Nina Drachenberg; Nathalie Geyer; Nicholas S. Foulkes; Cristiano Bertolucci; Gabriele Gerlach: „Finding Nemo's clock reveals switch from nocturnal to diurnal activity“, Scientific Reports, doi: 10.1038/s41598-021-86244-9.

archipelago of Raja Ampat, Indonesia [Foto: Gabriele Gerlach, IBU]

OUTSIDE THE BOX

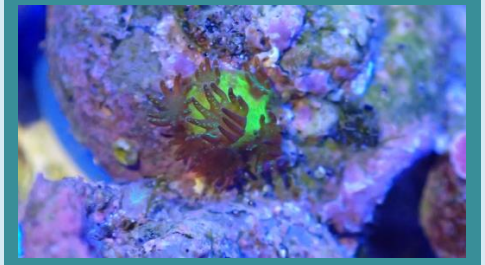


Korallennachwuchs im TV Coral offspring on TV

A NDR television team has now documented the result of the sexual offspring of stony corals, which was successful for the first time in Germany in the laboratory at the ICBM site in Wilhelmshaven (the ICBM reported here). [...]

The N3 team was fascinated by the still delicate coral offspring, which was also observed while eating. Nietzer, a member of the Environmental Biochemistry Working Group at the ICBM, further explained that the breeding process was an important step towards studying the colonization behavior of coral larvae. This should be seen in the context of attempts by science to relieve pressure on coral reefs around the world. Their ecological importance is as high as that of tropical rainforests. [SR - 05/02/2021]

The contribution of the program DAS! of the NDR is available in the media library (just in german: Mediathek).



A few weeks old “Leaf plate montipora” in the aquarium of the ICBM [Foto: Samuel Nietzer, ICBM]

More information and registration:

Website HIFMB

ICBM becomes member of Global Partnership on Marine Litter

As of late, ICBM is a member of the Global Partnership on Marine Litter (GMPL). A few days ago, Dr Shungu Garaba received the certificate confirming the membership from the GPML secretariat. Garaba, who is a research assistant at the ICBM research group Marine Sensor Systems headed by Prof. Dr Oliver Zielinski, had only recently applied for the entry, with the consent of Zielinski. [SR – 22.07.2021]

CONGRATULATIONS!

First groundbreaking for the new building of the Oldenburg Helmholtz Institute

The new building of the Helmholtz Institute for Functional Marine Biodiversity at the University of Oldenburg (HIFMB) began today with a symbolic groundbreaking ceremony.

The HIFMB was founded in 2017 as an institutional cooperation between the University of Oldenburg and the Alfred Wegener Institute in Bremerhaven. The focus of the research is the question of how biological diversity is changing in the seas and what consequences this has for the functioning of marine ecosystems and their contribution to human well-being. On this basis, the scientists develop sustainable protection concepts for adaptable ecosystem management. [PR 135/21 – 21.07.2021]

Miriam Gerhard awarded science prize

The Uruguayan-German Limnologist Miriam Libertad Gerhard recently has been awarded the second prize in the category Doctoral Dissertations of the Science Award 2020 of the Oldenburg Landesbank (OLB) Foundation. […] At present, Gerhard does her research as a postdoctoral fellow at the ICBM Wilhelmshaven site in the Planktology research group, headed by Professor Helmut Hillebrand. She received the award endowed with 3,500 euros for her doctoral thesis on “Phytoplankton community responses to nutrient availability: interactions with temperature and diversity“. [SR – 17.05.2021]

Miriam Gerhard [Foto: privat]

Sinikka Lennartz appointed professor for biogeochemical ocean modeling

Dr. Sinikka Tina Lennartz was appointed Junior Professor for Biogeochemical Ocean Modeling at the ICBM on April 1st, 2021. Before that, she was a post-doctoral student in the ICBM-MPI bridge group for marine geochemistry, led by Prof. Dr. Thorsten Dittmar. As part of a scholarship in the Walter Benjamin program of the German Research Foundation (DFG), Lennartz is initially on leave for one year and will carry out her own research project on the subject of modeling microbial communities in the ocean at the Massachusetts Institute of Technology (MIT) in Boston. Sinikka Lennartz will continue her research work at the ICBM from April 2022 and then start setting up her new working group. [SR – 13.04.2021]

Sinikka Lennartz [Foto: privat]

Martin Könneke appointed professor for benthic microbiology

Dr. Martin Könneke has been appointed to the professorship for benthic microbiology at the ICBM at the University of Oldenburg. Before that, the 52-year-old headed a working group at MARUM at the University of Bremen. He was able to obtain funding for the group through the renowned Heisenberg program of the German Research Foundation (DFG). [...] With his Benthic Microbiology group, Könneke wants to investigate the role of previously uncultivated microorganisms in marine material cycles. To do this, he combines classic physiological approaches with modern molecular biological and biogeochemical analysis methods. [SR – 31.05.2021]

The Oldenburg microbiologist Prof. Dr. Martin Könneke coordinates the BMBF research association "Cultivation of previously uncultivated microorganisms from various aquatic habitats" [PR 137/21 – 23.07.2021]

Martin Könneke [Foto: Markus Hibbeler, UOL]

Oliver Zielinski appointed as new member of AWI Board of Governors

Professor Dr Oliver Zielinski, who heads the Center for Marine Sensors (ZfMarS) as well as the research group Marine Sensorsystems at ICBM, recently was appointed with immediate effect to the Board of Governors of the Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research (AWI). [ICBM – 11.05.2021]

Oliver Zielinski [Foto: DFKI GmbH]

News from the UOL presidium

The ergonomist and head of the Institute for Ergonomics at the Technical University of Darmstadt, Prof. Dr. Ralph Bruder (57) has been elected unanimously as the new president of the university by the university's senate. [...] He succeeds Prof. Dr. Dr. Hans Michael Piper, whose term of office ended on July 31st, 2021. [PR 203/20 – 02.12.2020]

Ralph Bruder [Foto: TU Darmstadt]

GEOMICROBIOLOGIST PROF. DR. WOLFGANG E. KRUMBEIN DIED

We commemorate Prof. Dr. Wolfgang E. Krumbein

The geomicrobiologist Prof. Dr. Wolfgang E. Krumbein, founding director of the ICBM at the University of Oldenburg, died on April 4th at the age of 84 in Berlin.

[...] Krumbein is one of the founders of geomicrobiology [...]. In his research, he not only examined how microbes destroy and regenerate natural minerals, but also demonstrated that they have an influence on the formation of a patina on buildings, sculptures and paintings. In addition, he dealt with the possibility of microbial life on other celestial bodies. By his retirement in 2002 he published more than 400 specialist articles and 15 books on geomicrobiology and geophysiology. [PR 057/21 – 16.04.2021]

Wolfgang Krumbein [Foto: UOL]

ALUMNI – THEN & TODAY

New category of the Newsletter: „Alumni – then & today"

Have you ever wondered what your former peers from the ICBM are doing now? To develop our ICBM-Alumni network a bit further, we would like to introduce and present YOU in the upcoming Newsletters! What did you do at the ICBM? Where are you now and how did you get there?

Please let us know when you want to participate at icbm-alumni@uol.de, so we can introduce you to your former peers! [TH]

Fragen und Anregungen

Gerne könnt Ihr Eure Fragen und Anregungen bzw. weitere Themen, die für Euch interessant sind, an uns richten. Schreibt eine E-Mail an: **ferdinand.esser@uol.de** oder **icbm-alumni@uol.de**
Werdet Mitglied im Alumni-Netzwerk des ICBM: **icbm.de/alumni**

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Impressum

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