



An Engaging Ocean - through Science and the Arts

Around 70% of the earth's surface are covered by the ocean. It fulfils important functions for human livelihoods and wellbeing by regulating the global climate, by providing food and economic resources and as a places of recovery, inspiration and imagination. At the same time, the ocean and its ecosystems are increasingly threatened by economic exploitation and global warming. People in the low-lying coastal regions of the Global South are particularly threatened by sea level rise and the declining availability of marine food resources. Yet humankind is only beginning to capture the urgency of the threats to ocean health. For many people, the ocean remains a mystery. In fact, estimates indicate that we may only know five per cent of the incredible number of oceanic species so far.

This raises important questions about how we get acquainted with the ocean, why it is important for our daily lives, how it functions, why it is under threat, and what this means for us. And how we can mobilize such affinity, knowledge and engagement for ocean protection?

Science and the arts are often viewed as offering two different starting points to answer these questions. Yet, they are complementary. It is widely acknowledged that scientists deliberately employ artistic products and means under the headline of science communication to convey their results to a broader public. Strategies to that end range from the construction of narratives to setting up entire exhibitions with photographic or multimedia material. Artists, on the other hand, often use science as inspiration, drawing on scientific insights to lay the foundation for activist art or using scientific data as a direct input for their work.

The traditional sectoral distinction between science and the arts leads many to believe that they are two thoroughly different modes of engaging with a topic: while science informs and conveys knowledge, artworks provoke emotions and reflection. Both are necessary to immerse oneself in and to engage with a topic: having data and 'hard facts' available on individual topics and systemic interlinkages, as well as a sense

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of personal identification and affectedness. Even when taking this traditional distinction at face value, combining science and the arts still holds the potential to effect a holistic engagement that may help to bridge the divide between people's factual knowledge about threats to the ocean and the continuation of behavior and activities that harm the natural environment including the ocean. This divide has puzzled the social and environmental sciences for long.

This event takes a critical lens to the traditional sectoral distinction between science and the arts. While at several levels, science and the arts are indeed two diverging approaches, at other levels they have strong connections. It would be shortsighted to reduce science to the factual and arts to the emotional sphere. Instead, different modes of engagement take place across disciplines. This opens up various possibilities for cross-fertilization and collaboration between science and the arts, out of which more holistic forms of knowing about and engaging with the ocean might arise.

In this event, we aim to explore the different modes of engaging with oceans that science and the arts offer and to illuminate potential forms of co-creating knowledge that go beyond the divide of eliciting emotions vs. conveying information. Our goal is to create a dialogue between and among scientists and artists on how they view each other's role and their own, what "knowing about the ocean" means from their perspective and how they hope to mobilize this knowledge and the potential for collaboration between science and the arts for ocean conservation.

This event is jointly organised by the German Development Institute / Deutsches Institut für Entwicklungspolitik (DIE), the German Commission for UNESCO / Deutsche UNESCO Kommission (DUK) and the German Alliance for Marine Research / Deutsche Allianz Meeresforschung (DAM) in an effort to raise awareness and increase ambition for ocean protection as a key building block of successful development cooperation.

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Featured artists and panelists

Adrien Segal, located in Oakland, California, creates sculptures based on scientific data. For instance, she has visualized tidal charts in physical space, transformed historical glacier maps into a melting ice sculpture, and represented Arctic sea ice patterns in cast glass. Her work connects scientific rationality to an emotional experience, suspending the boundaries between science and art. Adrien has participated in numerous national and international exhibitions, among them *At Sea* at the Dorsky Gallery in New York City, and *Imagine Climate* at the Anderson Ranch Art Center in Colorado. She has held artist residencies in the US, Canada, and Europe and she teaches at the California College of the Art, where she was awarded a BFA in 2007. As of 2022, she will be a US/UK Fulbright Scholar at the University of Dundee.

Mbongeni Buthelezi is a South African artist who recycles plastic into art by melting plastic waste onto canvas. He developed his method in 1991 when he was an art student at the African Institute of Art as an alternative to using expensive material. This approach symbolises his personal philosophy: inspiring hope to make a positive change in one's life and the world. His art raises awareness of the importance of recycling and saving the environment and demonstrates how beauty can be created from unexpected sources. Mbongeni's paintings have been exhibited in solo and group exhibitions, including at the Goch Museum in Germany and the Prague Biennale. He has held numerous artistic residencies, for instance at the Sylt Foundation, Duesseldorf and at the Vermont Studio Artists Center.

Dr. Craig Santos Perez is a native Chamoru from the Pacific Island of Guam, a poet, an essayist, and a university professor of English at the University of Hawai'i. He teaches Pacific literature, eco-poetry, and creative writing. His poetry explores a wide range of subjects related to political, environmental, historical, and cultural issues of the colonial past of his homeland. Between 2008 and 2017, he published the book series *from unincorporated territory*. He authored two spoken-word poetry albums in 2011 and 2017: *undercurrent* and

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crosscurrent. In his most recent book *Habitat Threshold* (2020), Craig blends art and science by offering insights into the themes of environmental injustice and the climate crisis through a literary experience. His work has been recognized with the 2015 American book award and the 2011 PEN Centre USA Literary Award.

Adrienne Goehler is a German freelance publicist and curator based in Berlin. In her most recent publication *Sustainability needs Deceleration needs Basic Income/Livelihood enables Deceleration enables Sustainability* (2020), she describes her method as seeking answers to questions by way of free, creative thinking. Adrienne curated the exhibition *examples to follow! expeditions in aesthetics and sustainability*, which raises awareness for the need to integrate the diversity of creative insights offered by arts and sciences in order to promote sustainable practices. Throughout her career, she has repeatedly found herself at the intersection of art and science, having served as president of the University of Fine Arts of Hamburg, as senator for science, research, and culture in Berlin, and as a curator of the Capital Cultural Fund.

Dr. Angela Pomaro is a researcher in the field of physical oceanography at the National Research Council of Italy - Institute of Marine Sciences (CNR-ISMAR), where she develops research activities with a particular interest in wave climate studies. Her work focuses on understanding the interdependencies of local meteorological conditions with large-scale circulation patterns and on the definition of metrics for climate change indicators. Angela is responsible for the management of the CNR research infrastructure "Acqua Alta Oceanographic Tower", located in the North Adriatic Sea. She has coordinated several dissemination activities in the field of art and science cooperation programs run at the Institute of Marine Sciences and is responsible for the joint collaboration with the Ocean Space in Venice. In this field, she has also been appointed as representative of the National Research Council of Italy at the EuroGOOS Ocean Literacy Expert Group.

Dr. Syma A. Ebbin is an Associate Professor in Residence in the Department of Agricultural and Resource Economics and the Maritime Studies Program at the University of Connecticut. She teaches courses in

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environmental and marine science and policy. Her interdisciplinary research experience has given her an appreciation for the diverse kinds of knowledge and ways of knowing the ocean. Her work as the Connecticut Sea Grant research coordinator expresses and promotes this understanding, advocating for a closer interaction between artistic and scientific inquiries into ocean-related topics in order to bolster ocean literacy and a sense of stewardship for the seas. Syma administers the Connecticut Sea Grant Arts Support Awards Program, which supports artists who create art related to Long Island Sound and to issues facing Connecticut's marine and coastal communities. In this context, she co-curated the *Crosscurrents: A Connecticut Sea Grant Art Exhibition* in 2019, which features artworks by artists supported by the Connecticut Sea Grant. She has also guest-edited a special issue of *Parks Stewardship Forum*, making a case for integrating arts and humanities into the concept of ocean literacy.

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