

Emerging Marine Diseases, Regulating Functions, and Governance Implications

2nd International Ocean Health Symposium, 29-31 August 2022, Kiel, Germany

Hosted by: Kiel Marine Science at Kiel University & GEOMAR Helmholtz Centre for Ocean Research Kiel;
[Pre-registration](#) and [Symposiums website](#)

SCIENTIFIC PROGRAMME

MON, 29.08.2022

Travel

Afternoon Site events - Traverse the Kiel Fjord by ferry and take a tour at GEOMAR East shore
- Meet Kiel marine scientists, visit at Kiel Outdoor Benthocosms

18:00 – 21:00 h

Ice breaker at **Seebar Bellevue**

TUE, 30.08.2022

Steigenberger Hotel

09:00 – 10:30 h

Opening Session: Setting the scene

(Moderation by one **international** & one **Kiel** member of steering board)

09:00 – 09:10 h

Welcome **Eckhard Quandt** (Vice president Kiel University)

09:10 – 09:15 h

Welcome **Organizers**

09:15 – 09:45 h

Keynote **Kevin Lafferty** (US Geological Survey & UC Santa Barbara, USA)

“Are marine diseases bad or good?”

09:45 – 09:55 h

Discussion

09:55 – 10:30 h

Coffee break

10:30 – 12:15 h

Session 1: Emerging marine diseases

Chair: **Ute Hentschel Humeida** (GEOMAR & Kiel University, Germany)

Guiding questions:

- Which are the emerging marine pathogens/parasites?
- Are infection processes in the ocean different from those of terrestrial organisms?
- What are the mechanistic underpinnings of marine disease?
- What are the impacts on organismal function?

10:30 – 10:45 h

Introduction into field by discussion chair

10:45 – 11:05 h

(1) **Forest Rohwer** (San Diego State University, USA)

“Microbialization and coral reef decline”

11:05 – 11:15 h

Discussion

11:15 – 11:35 h

(2) **Jose M. C. Tubio** (Universidade de Santiago de Compostela, Spain)

“Clonal evolution of a marine transmissible cancer that colonizes the Atlantic coast of Europe”

11:35 – 11:45 h

Discussion

11:45 – 12:05 h

(3) **Claire Gachon** (SAMS, UK & MNHN, France)

“Pathogens, physiology of disease, and disease management in algal aquaculture”

12:05 – 12:15 h

Discussion

continued

12:15 – 13:15 h	Lunch
13:15 – 13:20 h	Opening afternoon session: Katja Matthes (Director of GEOMAR)
13:20 – 15:05 h	Session 2: Marine epidemiology, triggers, and tipping-points Chair: Ruth Schmitz-Streit (Kiel University, Germany)
Guiding questions:	
<ul style="list-style-type: none"> - What is the current understanding of marine disease dynamics (epidemiology) compared to land? - How can we use the sediment record to understand past disease dynamics? - How can we explore and visualise health and disease related processes using a digital twin ocean approach? 	
13:20 – 13:35 h	Introduction into field by discussion chair
13:35 – 13:55 h	(4) Assaf Vardi (Weizmann Institute, Israel) <i>“Partners in crime – synergy of viruses and bacteria during algal blooms in the ocean”</i>
13:55 – 14:05 h	Discussion
14:05 – 14:25 h	(5) Isabelle Arzul (IFREMER, France) <i>“Factors triggering main bivalve diseases in Europe”</i>
14:25 – 14:35 h	Discussion
14:35 – 14:55 h	(6) Arne Biastoch (GEOMAR & Kiel University, Germany) <i>“On the power of biophysical modelling to explain biological dispersal”</i>
14:55 – 15:05 h	Discussion
15:05 – 15:30 h	Coffee break
15:30 – 16:30 h	Espresso: Young investigators poster pitches
16:30 – 21:00 h	Poster session with buffet (19:00 h)

WED, 31.08.2022

Steigenberger Hotel

09:00 – 11:00 h	Session 3: Marine disease between mass mortality and essential regulation Chair: Thorsten Reusch (GEOMAR & Kiel University, Germany)
Guiding questions:	
<ul style="list-style-type: none"> - What are advances in the understanding of how disease regulates ecosystems? - How can we distinguish among key regulating and detrimental functions of (emerging) marine disease? - How much disease does a healthy ocean need? - What is the relationship among pathogen / parasite and the biodiversity of free-living species? 	
09:00 – 09:15 h	Introduction into field by discussion chair
09:15 – 09:35 h	(7) David Thieltges (NIOZ, The Netherlands) <i>“Parasites as ecological players in marine ecosystems”</i>
09:35 – 09:45 h	Discussion
09:45 – 10:05 h	(8) Lauren Schiebelhut (UC Merced, USA) <i>“Genomic consequences, considerations, and conservation opportunities following mass mortalities in sea stars”</i>
10:05 – 10:15 h	Discussion

continued

10:15 – 10:35 h	(9) Ursula Siebert (University of Veterinary Medicine, Germany) <i>“Infectious diseases in marine mammals: Do impacts of anthropogenic activities have a boomerang effect on human health?”</i>
10:35 – 10:45 h	Discussion
10:45 – 12:45 h	Coffee break & brunch
12:45 – 15:05 h	Session 4: Governance of marine diseases Chair: Marie-Catherine Riekhof (KMS & CeOS, Kiel University, Germany)
	Guiding questions: - What are direct and indirect links between ocean health and disease and human well-being? - What are possible roles of humans in fostering marine disease outbreaks (e.g. pollution, destroying biodiversity) and in curing them? - How can management account for the “double role” of marine disease (mass mortality versus regulating function)? - How can management across time, space and national borders effectively be implemented?
12:45 – 13:00 h	Introduction into field by discussion chair
13:00 – 13:20 h	(10) Christina Pettan-Brewer (University of Washington, USA & ECOHA, Brasil & OHLAIC) <i>“One Ocean, One Health in Latin America: How can we define and disseminate a modern historical perspective of the concept?”</i>
13:20 – 13:30 h	Discussion
13:40 – 14:00 h	(11) Raquel Peixoto (KAUST, Saudi Arabia) <i>“Customized medicine for Corals: Promise, Challenges and Next Steps”</i>
14:00 – 14:10 h	Discussion
14:10 – 14:30 h	(12) Lone Grønbæk Jørgensen (SDU, Denmark) <i>“Game theory and fisheries management: The challenges of regulation”</i>
14:30 – 14:40 h	Discussion
14:40 – 14:50 h	Group picture
14:50 – 15:30 h	Coffee break
15:30 – 16:15 h	Outlook: Panel discussion including international steering group members moderated by Martin Visbeck (GEOMAR & Kiel University, Germany) Panelists: NN
	Guiding question: - Which research agenda do we need for the next decade to study ocean health and disease?
16:15 – 17:00 h	Wrap-up with coffee

THU, 01.09.2022

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Synthesis groups

Visit at [ARENA2](#) Visualization Laboratory at GEOMAR