



Helmholtz Graduate School for  
Polar and Marine Research



## Lecture Week in Marine Sciences: Biogeochemical oceanography and climate

*POLMAR & AWI colleagues*

<b>Date &amp; Time:</b>	Sept 24 – 27, 2019 9 am – 5 or 6 pm
<b>Location:</b>	AWI Building E, room E-4025
<b>Language:</b>	English
<b>POLMAR credit points:</b>	5
<b>Registration:</b>	<a href="mailto:info.polmar@awi.de">info.polmar@awi.de</a>

### Course content:

The aim of the lecture week is to introduce students and doctoral candidates to the main fields of marine biogeochemistry and climate, notably chemical oceanography, biological oceanography, marine biogeosciences as related to the carbon cycle, and climate research. Participants get to know key research areas of the AWI. The programme is multidisciplinary, i.e. all disciplines will be discussed as components of an integrated system. Students present and discuss their own field of research in relation to global change.

### Topics covered include:

- Chemical properties of seawater and ocean carbonate chemistry
- The marine carbon cycle and the biological pump
- Biology of polar oceans, foodweb ecology, impact of global change
- Climate variability and climate change

See preliminary course program next side.

### Target group:

We recommend participation in this course to all PhD students in marine sciences. Ideally, you take this course at the beginning of your PhD. Place availability given, Master students and young postdocs are equally welcome.

This year, the course will be held jointly with the Sino-German Summer school “Multi-scale processes in ocean and atmosphere”.

### Students' comments on this course:

- *Thank you for this interesting introduction!*
- *Very informative and entertaining*
- *The course was a good challenge to learn more*
- *It was great to hear all this “cool” stuff*
- *Nearly all the talks were very interesting and informative.*

**More information:** [info.polmar@awi.de](mailto:info.polmar@awi.de)  
[GongXun.Allen@awi.de](mailto:GongXun.Allen@awi.de) (regarding Sino-German Summer school)

## Lecture Week in Marine Sciences: Biogeochemical Oceanography and Climate

24.09.19	TUESDAY	Lecturer
<i>Introduction, Overview &amp; Chemical Oceanography</i>		
9:00 - 9:30	Welcome & Introduction	POLMAR Team
9:30 - 11:00	The Earth Climate System and its Components	Dr. Martin Werner
	<b>coffee break</b>	
11:30 - 12:00	Introduction to AWI & Helmholtz Association	POLMAR team
	<b>L U N C H</b>	
13:00 - 14:30	The Marine Carbonate System	Prof. Dr. Dieter-Wolf Gladrow
	<b>coffee break</b>	
15:00 - 16:30	The Global Carbon Cycle	Prof. Dr. Boris Koch
25.09.19	WEDNESDAY	
<i>Biology</i>		
9 - 10:30	Icy hollows: Under-ice creatures in the Arctic and Antarctic Oceans	Dr. Hauke Flores
	<b>coffee break</b>	
11 - 12:30	Plankton communities in the polar oceans	Dr. Christine Klaas
	<b>L U N C H</b>	
13:30 - 15:00	Ocean acidification: The ugly side of global warming	Prof. Dr. J. Bijma
	<b>coffee break</b>	
15:30 - 17:00	The Big picture	Prof. Dr. Victor Smetacek
26.09.19	THURSDAY	
<i>Climate &amp; Ice</i>		
9 - 10:30	Ice in the climate system	Prof. Dr. F. Wilhelms
	<b>coffee break</b>	
11 - 12:30	Paleoclimate dynamics - identifying driving mechanisms of climate change	Prof. Dr. Gerrit Lohmann
12:30 - 12:45	Atmospheric deposition and Oceanic response in the northwest Pacific	Prof. Dr. Huiwang Gao
12:45 - 13:00	Changing Phases of Atlantic Meridional Overturning Circulation and its Impact on Global Climate	Prof. Dr. Xianyao Chen
	<b>lunch break and transfer to Klimahaus</b>	
14:00 - 18:00	visit of Klimahaus	
27.09.19	FRIDAY	
9 - 10:30	Communicating my science to the media	Sina Löscke
	<b>coffee break</b>	
11 - 12:30	Bio/geoengineering: how big and urgent is the job	Prof. Dr. J. Bijma & Prof. Dr. V
	<b>L U N C H</b>	
13:30 - 13:45	Numerical investigation of internal tides in the northwest Pacific Ocean using a global circulation and tide model	Prof. Dr. Xue'en Chen
13:45 - 14:00	Hyperpycnal plume at the Yellow River Mouth triggered by dam regulation: In-situ observations	Prof. Dr. WANG Houjie
14:15 - 14:30	New insights on sediment flux through the Bohai Strait	Dr. Wu Xiao
14:30 - 15:00	Summer School Certificate ceremony, Group Photo & farewell	POLMAR team