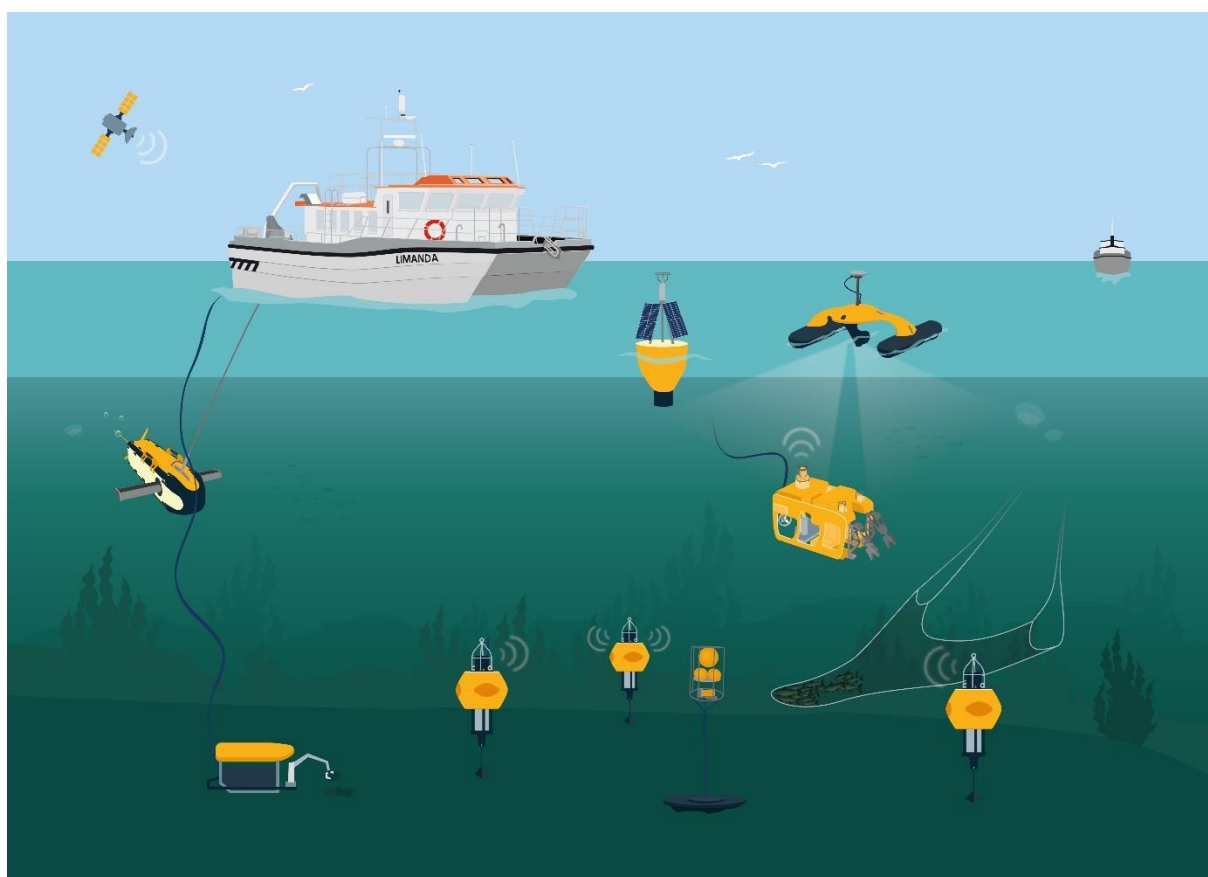


Summer School  
**ROOT**  
Rostock  
Ocean Technology

- Program 2023 -



## Locations

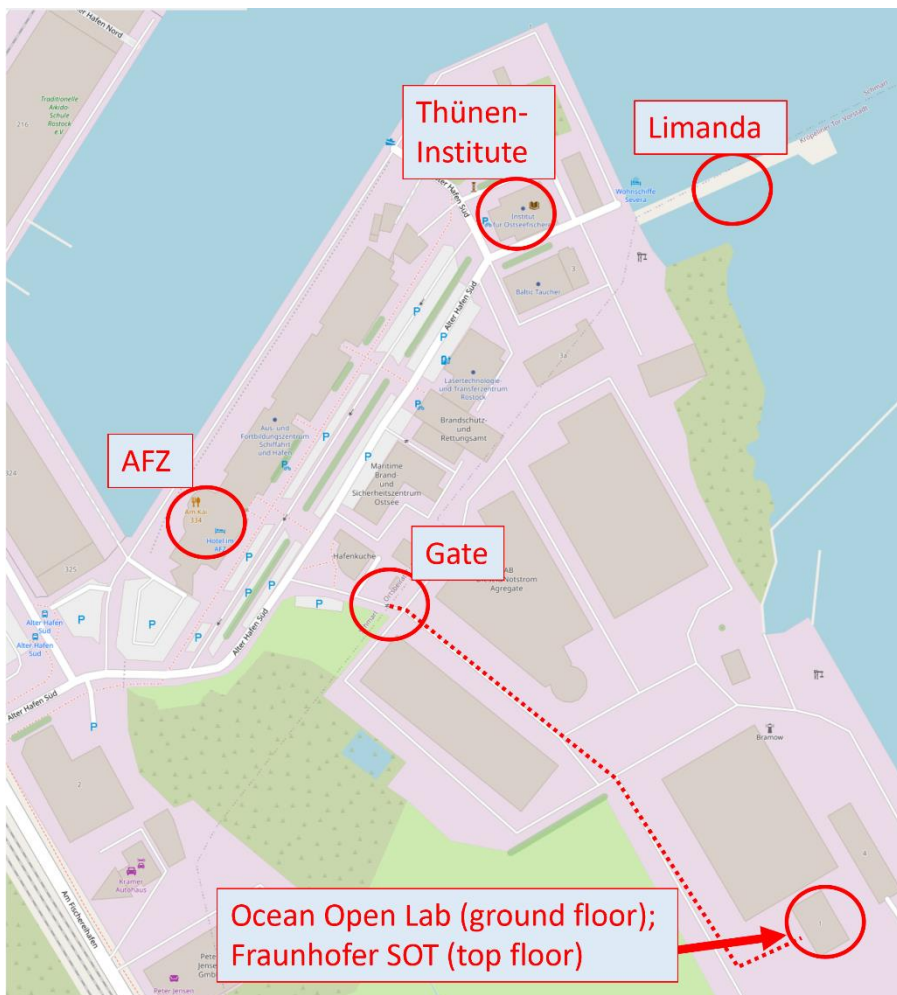
Thünen: Seminar room, Thünen-Institute for Baltic Sea Fisheries, Alter Hafen Süd 2, 18069 Rostock

AFZ: AFZ Aus- und Fortbildungszentrum Rostock GmbH, Alter Hafen Süd 334, 18069 Rostock; Canteen: Lokal „Am KAI 334“

Fraunhofer SOT: Fraunhofer Smart Ocean Technologies, Alter Hafen Süd 6, 18069 Rostock

Ocean Open Lab: Alter Hafen Süd 6, 18069 Rostock

Limanda: University of Rostock's research catamaran

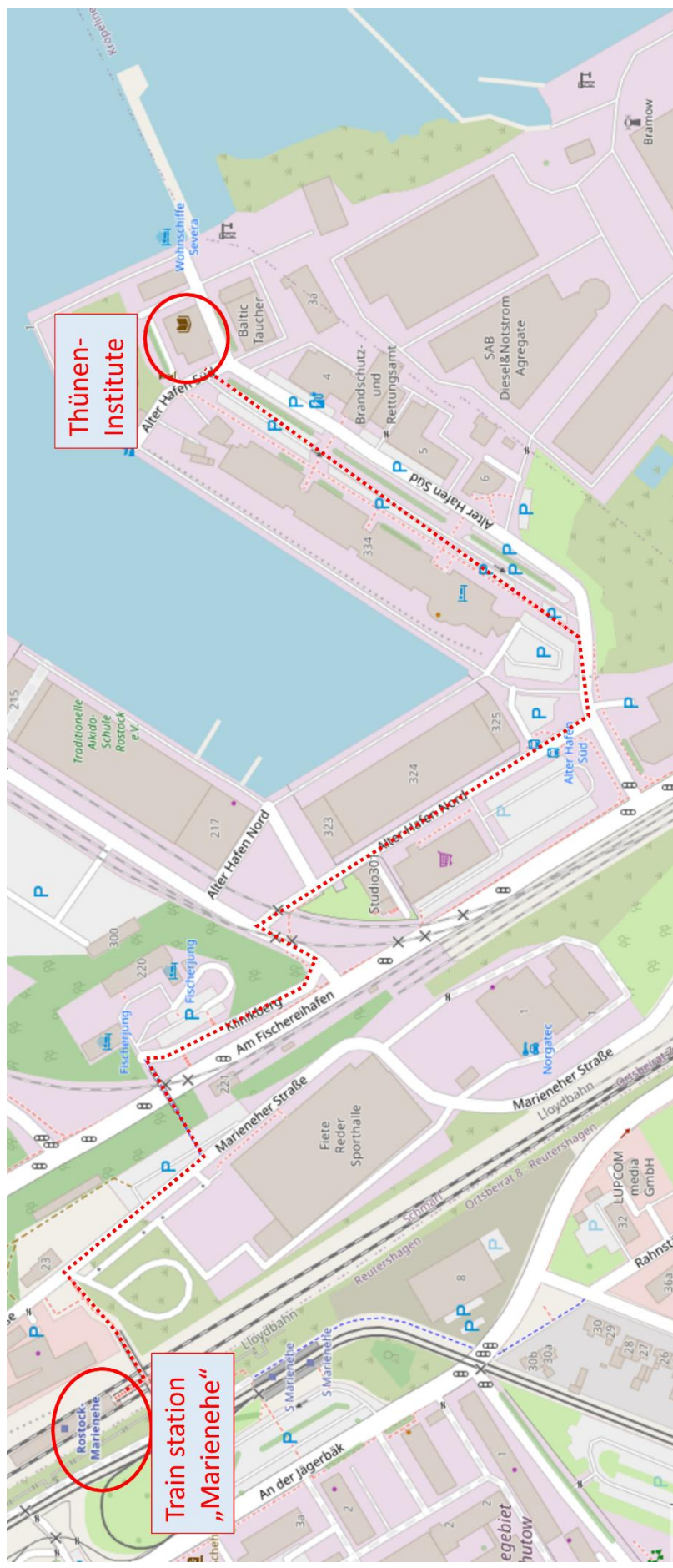




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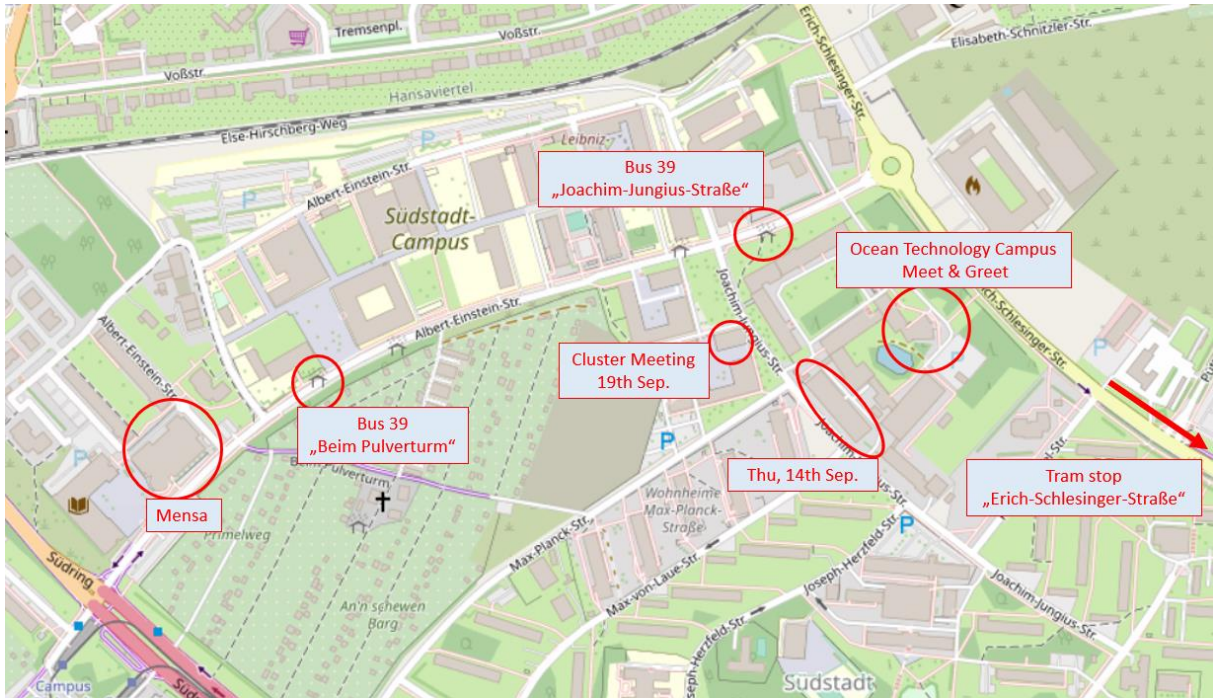


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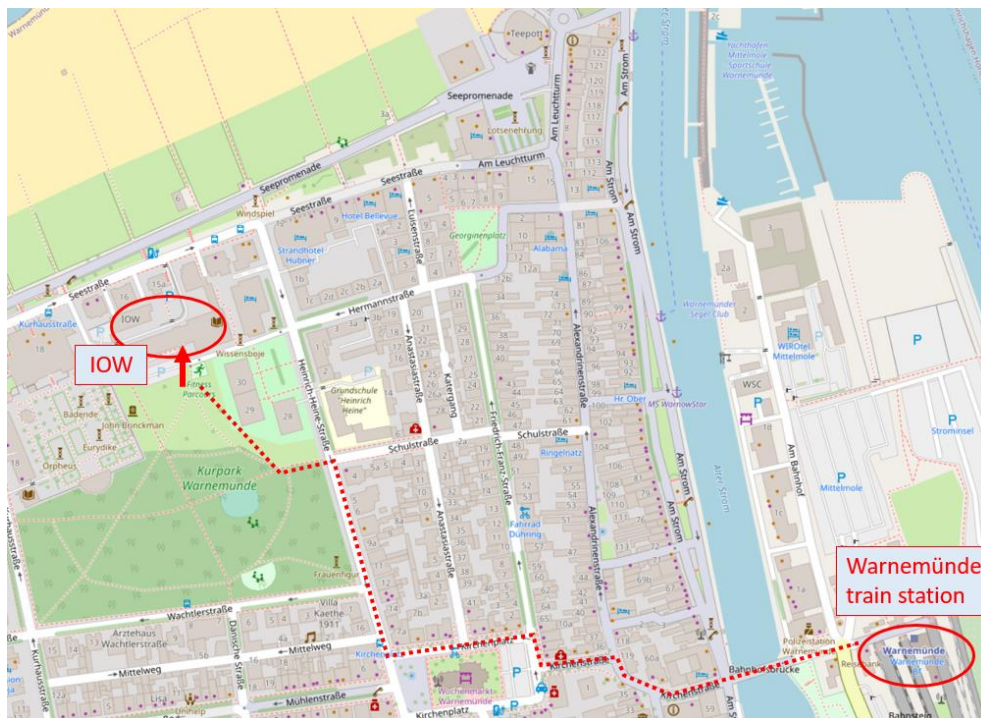
Federal Ministry  
of Education  
and Research

**CLUSTERS  
4 FUTURE**  
Innovationsnetzwerke  
für unsere Zukunft

Uni Rostock: University of Rostock, Forschungshalle, Albert-Einstein-Str. 2, 18059 Rostock



IOW: Leibniz-Institut für Ostseeforschung Warnemünde, Seestraße 15, 18119 Rostock



**Monday, 11th September:**

**Meet the Ocean Technology Campus!**

After an introductory round and some formalities, we will break the ice and get to know each other. Sascha Kosleck, chair of marine technology and the Ocean Technology Campus Steering Committee, will give an introduction about the Ocean Technology Campus Rostock.

After lunch, Kennedy Sittler and Riley Kennedy from COVE (Nova Scotia Canada) will talk about their current projects in particular their work focusing on Stella Maris COVE's a unique testbed for marine instrumentation and Eastern Canada's most versatile seabed technology platform. Further, our guest Tanya Lush (Director of Workforce Development at Canada's Centre for Ocean Ventures & Entrepreneurship – COVE) will provide us with insight into COVE in general and, in particular, their approach towards developing a sustainable workforce for Canada's fast-growing sector of the blue economy.

Followed by this, we will get a tour around the Ocean Technology Campus, where we will gain insight into the Fraunhofer-Gesellschaft and their departments SOL (Smart Ocean Technologies), DOL (Digital Ocean Lab).

To finish off the day, we will get a chance to get to know the beautiful city of Rostock better and take part in a guided tour.

When?	What?	Where?
9:00 – 10:00	Registration & Opening Session	Thünen
10:00 – 11:30	Icebreaker	Thünen
11:30 – 12:00	Introduction Talk Ocean Technology Campus (Sascha Kosleck – University of Rostock)	Thünen
12:00 – 13:00	Lunch	AFZ
13:00 – 15:00	Stella Maris Talk – Kennedy Sittler (Marine Technical Specialist) & Riley Kennedy (Database Administrator)  COVE Talk – Tanya Lush, Work & Learn at Canada's Centre for Ocean Ventures & Entrepreneurship (Tanya Lush, COVE)	Thünen
15:00 – 16:30	Tour of the Ocean Technology Campus Basecamp with Kathrin Baumgarten (Smart Ocean Technologies) & Peter Menzel (Digital Ocean Lab)	Start: Fraunhofer SOT
18:00 – 19:30	Tour of the city of Rostock	Start: TBA

**Tuesday, 12th September:**

**Limanda & Warnow-station project**

The participants will be split into two groups.

Group 1: Gaining insights into field sampling, challenges and new approaches in practice on our research catamaran “**Limanda**”. Ever seen zooplankton under the microscope alive?

Group 2: Starting the day with a tour of the company Kraken Power GmbH (please bring your cell phone), followed by an introduction of the IOW, the Warnow-station project and the prevailing conditions by Sven Hille and Mathis Björner (IOW). They will also give insights in sensor-based measuring systems at the IOW and the HyFiVE project. Afterwards Tamara Spiegl from Ocean Technology Campus Open Cluster project-team will talk about the process of product development all the way from an idea to the final product. The main aim will be that, the participants are encouraged to make use of their own practical skill set within an own project. After lunch you will be visiting the Warnow station and ask questions with a focus on the requirements of the analysis, which will help you in the active work phase to discuss ideas, and help you to design a target process for a prototype.

**Group 1:**

When?	What?	Where?
8:30 – 17:00	Limanda trip to the Digital Ocean Lab (Lunch packs)	Limanda

**Group 2:**

When?	What?	Where?
9:00 – 10:30	Tour of Kraken Power GmbH	Start: Gate
10:30 – 11:30	Introduction of the IOW, the Warnow-station project and the prevailing conditions, presentation of sensor-based measuring system at IOW (CTD, Marnet Monitoring Stations) and HyFiVE-project with Sven Hille & Mathis Björner (IOW)	Ocean Open Lab
11:30 – 12:30	Introduction in “user centered design for product innovation”: general introduction and methods of requirement analysis by Tamara Spiegl (Ocean Innovation)	Ocean Open Lab
12:30 – 13:30	Lunch	AFZ
13:30 – 15:00	Visiting Warnow-station project: gain information for project by Sven Hille & Mathis Björner (IOW)	Warnow station
15:00 – 17:00	Active project work: fill in & discuss results, actual process & pain points, target process & vision of	Ocean Open Lab

When?	What?	Where?
	prototype with Tamara Spiegl (Ocean Innovation)& Sven Hille (IOW)	

### Wednesday, 13th September:

#### Limanda & Warnow-station project

The participants will switch groups from Tuesday (see schedule above).

### Thursday, 14th September:

#### Subsea Mobility & Underwater Technologies: Warnow-station project

Large-scale and constant marine data collection throughout the water column requires autonomous underwater measurement systems that can operate under changing conditions and over long time periods remotely. On this day, you will gain insights into the design and operation of an autonomous underwater system for data collection by building a working mini-underwater measurement station for the Warnow-station project.

When?	What?	Where?
9:00 – 11:00	Subsea Mobility & UW Technologies – Presentation of prototype & introduction talk by Stephan Schacht (University of Rostock)	Uni Rostock
11:00 – 12:00	Working on Warnow-station project supervised by Stephan Schacht and his team (University of Rostock)	
12:00 – 13:00	Lunch	Mensa
13:00 – 18:00	Working on Warnow-station project supervised by Stephan Schacht and his team (University of Rostock)	Uni Rostock
18:00 – open end	Pizza for dinner	Uni Rostock

**Friday, 15th September:**

**Digital SmartFishing & Planet AI GmbH**

To start the day, Framework Robotics GmbH and Subsea Europe Services GmbH, two of the leading companies in the ocean technology sector will introduce themselves, followed by a keynote talk by Peer Fietzek (Senior Business Developer Manager Ocean Science at Kongsberg Maritime GmbH). After that, Mathis Mahler from the Thünen Institute will give you an insight into SmartFishing, which is developing supreme technologies to optimize fishery practices to strive for more sustainability in this sector.

In the afternoon, Henning Schröder from Planet AI GmbH will work with you on the whole process of sampling, analyzing and reviewing data with the newest technological achievements in the artificial intelligence sector.

When?	What?	Where?
9:00 – 10:00	Company Introduction: Framework Robotics GmbH & Subsea Europe Services GmbH	Fraunhofer
10:00 – 11:00	Keynote Talk by Peer Fietzek (Kongsberg Maritime GmbH)	Thünen
11:00 – 12:00	Introduction Digital Mission SmartFishing with Mathis Mahler (Thünen Institute)	Thünen
12:00 – 13:00	Lunch	AFZ
13:00 – 18:00	Planet AI GmbH with Henning Schröder (Planet AI GmbH) & Mathis Mahler (Thünen Institute)	Thünen

**Saturday, 16th September:**

**Field trip to the International Maritime Museum Hamburg**

The private museum in Hamburg's HafenCity houses a collection of model ships, construction plans, uniforms, and maritime art.

**Sunday, 17<sup>th</sup> September:**

**Field trip to the Ozeaneum in Stralsund**

The natural history museum is part of the German Oceanographic Museum and features exhibitions and aquariums focused mainly on the North Sea and Baltic Sea.



## Monday, 18th September:

### Ocean Lense: OTC-Genomics - A genetic lense into ocean health

Computational approaches are taking root in all disciplines, and especially so in microbial ecology. But it is not only biology that learns from computational science, but also vice versa. On this day, we will look at some of the secrets this scientific encounter can unveil. We will take a look at the secrets of machine learning (using your laptops – so please bring them), of the microbial world (using a microscope), of algorithms (using pen and paper), and of emergence (using simple algorithms that show complex behaviour). Afterwards Regine Labrenz will give you a tour around the IOW. Afterwards Regine Labrenz will give you a tour around the IOW.

When?	What?	Where?
9:00 – 12:00	Ocean Lense with Theo Sperlea (IOW)	IOW
12:00 – 13:00	Catering for lunch	IOW
13:00 – 17:00	Ocean Lense with Theo Sperlea (IOW)	IOW
17:00 – 18:00	IOW guided tour with Regine Labrenz	IOW
18:00 –	Hang out on the beach	Warnemünde

## Tuesday, 19th September:

### Ocean Technology Campus Cluster meeting

Throughout the whole day, the "Ocean Technology Campus Clustermeeting" will provide the participants with the opportunity to connect with members of the various Ocean Technology Campus projects. Participants will hold a short "elevator speech" to the auditorium. Focus of this cluster meeting is "from development to application".

After the cluster meeting, there will be a barbecue and the time for networking.

When?	What?	Where?
9:00 – 18:00	Ocean Technology Campus Cluster Meeting Meet & Greet	Lecture-Hall at Institute for Chemistry, University of Rock, Albert-Einstein-St-Str. 3a
18:00 – open end	Cluster Meeting: Barbecue/ Networking	

### Wednesday, 20th September:

#### EvoLogics GmbH & Subsea Mobility

Starting with a demonstration and introduction of the ROV (remotely operated underwater vehicles) by the company EvoLogics GmbH that will give the participants insight into the preparation and operating process of ROVs.

After lunch you will have time to work and finalize your Warnow-station project with your group at the University of Rostock.

When?	What?	Where?
9:00 – 12:00	EvoLogics GmbH– demonstration of ROV	Thünen
12:00 – 13:00	Lunch	AFZ
13:00 – 18:00	Warnow-station project with Stephan Schacht (University of Rostock)	Uni Rostock

### Thursday, 21st September:

#### Sustainable Ocean Use: How can technology help?

Throughout the first part of the day, “Open source in marine science” will be in the spotlight. Oliver Zielinski, director of the IOW, Frederik Furkert from the Thünen Institute and Helen Morrison from the BSH (Federal Maritime and Hydrographic Agency) will provide an insight on the value, perspectives and current status, followed by a discussion part in which all the participants are invited to actively take part in.

Sustainability will be in the focus during the second half of the day. Frederike Neuber (Coordinator for the new Master's program "Culture, Ecology, Change" at the University of Rostock) will give an introduction to the topic from the University of Rostock, leading to a presentation of sustainable ocean technology equipment and an open discussion round with Daniel Stepputtis and Christopher Zimmermann, director of the Thünen Institute.

When?	What?	Where?
9:00 – 10:00	Keynote Talk “Open source in marine science” with Oliver Zielinski (IOW)	Thünen
10:00 – 11:00	Keynote Talk “Open Source for Users and Developers” with Frederik Furkert (Thünen) & Helen Morrison (BSH)	Thünen
11:00 – 12:00	Discussion	Thünen
12:00 – 13:00	Lunch	AFZ

When?	What?	Where?
13:00 – 14:00	Sustainability Talk with Frederike Neuber	Thünen
14:00 – 18:00	Sustainable Ocean Use – Discussion & Equipment walkthrough with Daniel Stepputtis & Christopher Zimmermann (Thünen)	Thünen
18:00 – open End	Barbecue on the grounds of the Thünen Institute	Thünen

### Friday, 22nd September:

#### Presentations & Feedback

The last day will be started by presenting your results of the Warnow-station project.

Finally, we will have a concluding get-together to feed back on the previous days and to recap all the information gained throughout the summer school.

When?	What?	Where?
9:00 – 12:00	Presentation Warnow-station project	Thünen
12:00 – 13:00	Feedback/Evaluation	Thünen

With special thanks to:



And with invited speakers from:

