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ARICE: Arctic Research Icebreaker Consortium:

**A strategy for meeting the needs for marine-based research
in the Arctic**

Deliverable 3.6

Summer School Training lecture recordings

Submission of Deliverable

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Abstract

In the frame of WP3 “Educating a new generation of polar researchers and professionals”, APECS has organized the MOSAiC School - A six-week long “summer school” training on the Russian icebreaking research vessel Akademik Fedorov, for 20 early career scientists as part of Task 3.2. This in person training included lectures, practical exercises and workshops, as well as fieldwork training on the Arctic sea ice. Lectures onboard RV Akademik Fedorov covered all aspects of interdisciplinary research during MOSAiC, The Multidisciplinary drifting Observatory for the Study of Arctic Climate, as well as training in science communication.

Summer School Training lecture recordings

Recordings of selected lectures provide an overview on the overall holistic approach of the MOSAiC project and five specific topics addressed by the science plan, selected to provide clear examples of the intrinsic coupling character of the climate system and interaction between the different spheres: the Atmosphere, Ocean, Biosphere, and Cryosphere. The lecture recordings are freely available on the [APECS vimeo channel](https://vimeo.com/showcase/7402046) (<https://vimeo.com/showcase/7402046>), linked on the APECS [MOSAiC School Webpage](#) and embedded on the [ARICE Website](#).

Lecture recording “Coupled System Science” by Matthew Shupe

<https://vimeo.com/showcase/7402046/video/414075942>, 26 September 2019, 56:02 minutes

Matthew Shupe, research scientist with the Cooperative Institute for Research in Environmental Sciences (CIRES) at the University of Colorado and NOAA Earth System Research Laboratories, is one of the lead designers for MOSAiC. Matthew presented an overview on aims and objectives of interdisciplinary research plan of MOSAiC with a focus on the interactions across different components of the Earth System.

Lecture recording “The Role of the Ocean in Arctic Change” by Timothy Stanton

<https://vimeo.com/showcase/7402046/video/426793640>, 24 September 2019, 58:28 minutes

Timothy Stanton, professor emeritus at the Naval Postgraduate School and adjunct professor at the Moss Landing Marine Laboratories, is part of the MOSAiC Team Ocean and led the Distributed Network team. Tim presented on the role of the ocean, with a focus on ocean mixing and turbulence and discussed seasonal Arctic sea ice melting.

Lecture recording “Clouds in the Arctic System” by Christopher Cox

<https://vimeo.com/showcase/7402046/video/443399469>, 23 September 2019, 49:55 minutes

Christopher Cox, research scientist with the Cooperative Institute for Research in Environmental Sciences (CIRES) at the University of Colorado and NOAA Earth System Research Laboratories, is part of MOSAiC Team Atmosphere. Chris presented the role of clouds and their influence on the surface energy exchange that facilitate processes of melting and freezing of the cryosphere.

Lecture recording “The Basics of Biogeochemistry” by Sebastian Rokitta

<https://vimeo.com/showcase/7402046/video/482593557>, 2:09:42 hours

Sebastian Rokitta, research scientist at the Alfred Wegener Institute Helmholtz Centre for Polar and

Marine Research and the University of Bremen, is part of the MOSAiC Team Biogeochemistry. Sebastian presented on the basics of biogeochemistry, including carbonate chemistry, carbon and nitrogen cycling and the role of phytoplankton in interaction with their Arctic environment.

Lecture recording “Ecosystem Research in MOSAiC” by Allison Fong

<https://vimeo.com/showcase/7402046/video/473425622>, 26. September 2019, 49:39 minutes

Allison Fong, research scientist at the Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research, is leading the MOSAiC Team Ecosystem. Allison presented an overview on coupled system observations and synoptic measurements with a focus on temporal evolution of biological and ecological processes relevant to different components of the Earth System.

Lecture recording “Modelling Drift Forecasts” by Thomas Rackow

<https://vimeo.com/showcase/7402046/video/476236615>, 1:15:16 hours

Thomas Rackow, research scientist at the Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research, is a specialized modeller and joined the MOSAiC School as Year of Polar Prediction (YOPP) lecturer. Thomas introduced the method and topic of modelling in general and presented on drift forecasts with a perspective on drifting sea ice, icebergs, as well as drifting RV Polarstern.