



FUTURE OCEAN – KIEL MARINE SCIENCES

Understanding the Ocean — Sustaining Our Future

The Cluster of Excellence 'The Future Ocean' pursues a research approach that is unique in Germany: marine researchers, geologists and economists join forces with mathematicians, computing, medical, legal, and social scientists to investigate ocean and climate change from a multidisciplinary perspective. A total of over 200 scientists from Kiel University, the GEOMAR Helmholtz Centre for Ocean Research Kiel, the Institute for the World Economy (IfW) and the Muthesius Academy of Fine Arts are using innovative means to share their findings with the international scientific community, stakeholders, decision makers, civil society and the public at large. The "Future Ocean" is funded by the German Research Foundation.

Starting from April 2012 scientific activities will focus each semester on a different marine science topic. In autumn/winter 2012/2013 the focus will be on Seafloor Resources. Researchers from biology, geology, economics and law will investigate the potential of seafloor resources and new avenues of better management and governance of ocean resources.

For further information please visit:
www.futureocean.org/resources

www.futureocean.org



- 1 Central Railway Station
- 2 Steigenberger Conti Hansa Hotel
- 3 GEOMAR Helmholtz Centre for Ocean Research Kiel, West shore campus
- 4 GEOMAR, East shore campus
- 5 Kiel University

Scientific Steering Committee

Colin Devey, GEOMAR Helmholtz Centre for Ocean Research Kiel
Nele Matz-Lück, International Law, Kiel University
Lars Rüpke, GEOMAR Helmholtz Centre for Ocean Research Kiel
Sven Petersen, GEOMAR Helmholtz Centre for Ocean Research Kiel
Till Requate, Department of Economics, Kiel University

Venue

Steigenberger Conti Hansa, Schlossgarten 7, 24103 Kiel

Registration Deadline

15th January 2013

Participation is free of charge (including meals and refreshments).

Registration

Places are limited so registration is required and is binding.
Please register by E-Mail

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For further information please contact

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muthesius
kunsthochschule



future ocean
KIEL MARINE SCIENCES

Seafloor Mineral Resources: Scientific, Environmental, and Societal Issues

An international workshop for students

18th – 20th March 2013

Hotel Steigenberger Conti Hansa,
Kiel, Germany

Scientific Program

Mining of seabed mineral deposits is one means of securing the global future demand for raw materials and will present new environmental, legal, and technical challenges. It is our aim to bring together international experts from science, industry, legal entities, and from non-government organisations for a discussion of submarine mineral resources trying to find the right balance between protection and use of the ocean's non-living resources.

The workshop addresses the entire added value chain of marine minerals as well as environmental issues and the legal framework by bringing together international experts from all fields. We have structured the program to encourage an intensive exchange between students and experts to encourage cross-disciplinary dialogue and networking.

The Workshop will cover the following themes

THEME 1 Scientific basics

THEME 2 Mining processes

THEME 3 Environmental impact of mining

THEME 4 Legal and economic considerations



Monday 18th March, (9⁰⁰-17⁰⁰)

THEME 1 Scientific basics

- ▶ Dr. Thomas Kuhn | BGR Hannover
Manganese nodules deposits, genesis and potential of raw materials
- ▶ Dr. James R. Hein | United States Geological Survey
Genesis, distribution, and resource potential of ferromanganese crusts for strategic and critical metals
- ▶ Prof. Mark Hannington | Ottawa University
Seafloor massive sulfides (SMS) and their resource potential
- ▶ Prof. Lawrence Cathles | Cornell University
Distribution of volcanogenic massive sulfides

THEME 2 Mining processes

- ▶ N. N.
Meeting global environmental and social development objectives through sustainable seafloor resources

Monday 18th March, (9⁰⁰-17⁰⁰)

THEME 2 Mining processes

- ▶ Dr. Robert van de Ketterij | MTI Holland
Technologies for mining in the deep sea

Time for discussions with speakers

Tuesday 19th March, (9⁰⁰-17⁰⁰)

THEME 2 Mining processes (cont.)

- ▶ N.N.
Metallurgy of deep sea mineral resources
- ▶ Dr. Steffen Knodt | Aker Wirth
Economic considerations of future marine mining activities and production technology

Tuesday 19th March, (9⁰⁰-17⁰⁰)

THEME 3 Environmental impact of mining

- ▶ Dr. Cindy van Dover | Duke University
Biology of deep sea hydrothermal systems
- ▶ Dr. Gerd Schriever | Biolab Research Institute
Past German environmental impact studies on Manganese nodules
- ▶ Dr. Samantha Smith | Nautilus Minerals
The first environmental impact assessment of a submarine massive sulfide mining operation
- ▶ Prof. Pedro Martinez Arbizu | Senckenberg Research Institute
Environmental issues related to German Manganese nodule licence area
- ▶ Tim Packeiser | World Wide Fund For Nature
Public awareness in high seas and marine ecoregions

Time for discussions with speakers

Wednesday 20th March, (9⁰⁰-14³⁰)

THEME 4 Legal and economic considerations

- ▶ Dr. Peter Buchholz | BGR Hannover
World metal production and future demands
- ▶ Prof. Tullio Treves | International Tribunal for the Law of the Sea
Legal regulation of the exploitation of the deep sea's mineral resources and latest developments
- ▶ Harald Brekke | Norwegian Petroleum Directorate
Various legal, political, and scientific aspects of seabed resources in the Arctic region

Time for discussions with speakers

14⁰⁰ Conclusion