

IOC Training At Sea

50th Anniversary of IOC – 20th Anniversary of TTR Programme

Training in Marine Sciences: Floating University Facilities

Twenty years ago, in 1990, a strategic decision was taken to replace sporadic shipboard training in use of (then) modern oceanographic equipment with long-term coherent efforts in training in marine sciences, to undertake at sea but combined with subsequent land-based actions. The Training-through-Research (TTR) Programme thus was born.

The following three links demonstrate the programme progress throughout the years:

- photo galleries of 4 'floating university' projects,
- four video-films (1991-1994) taken on board at the start of the programme; and
- a summary of achievements and lessons learned.

Main results from the TTR-Flanders 2004-2008 cruises

Latest reports:

Baltic Floating University 2009 cruise summary report

2008 cruises and training

2007 cruises and training

abstracts from TTR17-PCM

Training at sea has always been an integral part of the TEMA Programme. However with the establishment in 1991 of the "Training-through-Research" (TTR) programme (also known as "Floating university") it has received a new dimension. In addition to practical skills in the use of equipment for the Ocean studies trainees obtain now a complete array of skills and knowledge on oceanographic research: from data collection to their analyses and synthesis. The ship-board training programme has also included daily lectures and seminars for the trainees focused on subjects of their research. In 1993 TTR was extended to the Baltic Region: the Baltic Floating University (BFU) programme was established. In 1999 yet another component, the Caspian Floating University (CFU) was launched in the Central Asia Region. In 2005 the University of the Sea (UoS) was established in the Asia-Pacific Region.

Training-through-Research programme (TTR)

TTR was established in 1991 to train young generation of researchers in marine geosciences.

Methodology: TTR puts together the advantages of the formal shipboard training of undergraduate, postgraduate and PhD students and young scientists with the experiences gained in advanced research. Cruise data are used for writing B.Sc., M.Sc. and PhD theses. Through TTR the trainees become research leaders. TTR annual cruises (6 to 8 weeks-long) are complemented with post-cruise conferences that discuss the research results. Both represent a mixture of experiences, disciplines and cultures.

Research focus: Geological, geochemical and biogeochemical processes (including Geosphere-biosphere coupling) at ocean margins and in the deep ocean; studies related to hydrocarbon accumulations in the Ocean.

Training results: over 750 students and young researchers from over 30 countries of Asia, Africa, Europe, Latin America and Middle East have been trained.

Publications: The TTR results have been published annually in the IOC Technical Series and Workshop Reports as well as in numerous peer-reviewed journals (such as Marine Geology).

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Web site: <http://www.ioc.unesco.org/ttr>

Latest reports

TTR14 TTR15 TTR16 TTR17

Baltic Floating University

BFU was established in 1993 to train young generation of researchers in collecting and analyzing hydro-meteorological and environmental data and in view of promoting regional and inter-regional cooperation between universities that teach marine sciences and integrated coastal management.

Methodology: cruises carried out annually (2 to 3 weeks) as a two-ship operation: multidisciplinary research undertaken from a sailing catamaran in coastal waters and from an oceanographic vessel in the deep Baltic Sea. BFU provides students with training through shipboard lectures, data collection, analysis and interpretation. Cruise data are used for writing B.Sc. and M.Sc. theses.

Research focus: Hydro-meteorological studies and studies of the environmental health of the Baltic Sea, in line with the requirements established by the Baltic Sea Environmental Commission (HELCOM) and the Baltic Ocean Observing System (BOOS, part of the Global Ocean Observing System, of IOC).

Training results: over 200 students and young researchers from 24 countries of Europe, Asia and Africa have participated. Mid-cruise seminars at ports of call provide for enhanced regional cooperation and knowledge-sharing. Shipboard seminars and round-table discussions give them a challenging opportunity to consider the cruise research results, get training in data synthesis and presentation, and provide input to specific subjects like the elaboration of proposals for the coastal zone policy in the Eastern Baltic.

Publications: The BFU Research Bulletin (published annually, in English) is a forum for researchers and students of the participating countries to present the results of the BFU research.

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BFU 2009 Cruise Summary Report. BFU 2008 CruiseSummary Report.

Caspian Floating University

New! Report on the Caspian Floating University Expedition to Study Water Dynamics and its Impact on Distribution of Biological Communities, July-September 2005.

CFU was launched in 1999 to upgrade professional abilities of students and young scientists, and to promote cooperation and mutual understanding among the nations of the region for conservation and rational exploitation of the Caspian natural resources. The Marine Ecology School (launched in 2001) involves senior schoolchildren, teachers from rural schools and other stakeholders from coastal communities.

Methodology: CFU research is based on integrated multidisciplinary approach to ecosystem studies. The training cycle includes participation in expeditions/fieldworks, mastering in methods of data collection and processing, courses on environmental issues of the Caspian Sea, preparation of reports and publications, presentations at workshops and conferences.

Research focus: investigations of the most important Caspian environmental issues such as:

- impact of the sea level fluctuations and marine pollution on aquatic and coastal ecosystems and bioresources
- biodiversity of the Caspian ecosystem with reference to the biodiversity conservation.
- integrated Coastal Management issues.

Training results: over 150 participants in field works and about 600 participants in ten post-cruise and thematic workshops, seminars and conferences. 15-20 schoolchildren annually take the course at the Marine Ecology School.

Publications: CFU results published in the Caspian Floating University Research Bulletin (3 issues since 2000) and other journals.

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University of the Sea (UoS)

University of the Sea was launched in 2005 to provide ship-board training and research opportunities to students and young scientists from the Asia Pacific region. The UOS network currently has 22 member institutions, who collaborate to provide a state of the art training and research experience.

Methodology: Participants experience first hand the methodologies and techniques of scientific research and are involved in the collection of geological, oceanographic and biological data required to answer important scientific questions. Participants complete a series of advanced marine science topics, operate complex scientific instruments, collect, analyse and interpret data and present results in a way that integrates the theory and practice of marine science research.

Research focus: research focuses on:

- global change as recorded in ocean sediments focused on understanding past variability in climate, ocean circulation and geohazards;
- exploitation and management of living and non-living marine resources.

Training results: over 70 students and young researchers from more than 20 institutions in the Asia Pacific region have participated in a diverse range of research cruises.

Keeping in touch: see <http://www.grida.no/marine/activities/university-of-the-sea.aspx> or lookup University of the Sea on facebook to find out what's happening at UOS.

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