

COMMUNITIES AND NETWORKS: INSTITUTES, CENTRES, CHAIRS

Reaching out: harnessing the power of scientific communities and networks to build capacity in science; reaping the benefits for developing countries

Over the last 69 years UNESCO has built capacity in science worldwide by initiating, sponsoring and promoting the establishment of major scientific institutes, centres of excellence and Chairs in scientific disciplines. Examples include the International Union for Conservation of Nature (IUCN, 1948) and the European Organization for Nuclear Research (CERN, 1954).

Today, UNESCO's Institutes, Centres and Chairs in science constitute a powerful network to build capacity in science to achieve sustainable development and to contribute to the achievement of the Millennium Development Goals.

UNESCO INSTITUTES AND CENTRES IN SCIENCE

CATEGORY 1 Institutes which are an integral part of UNESCO include the UNESCO-IHE Institute for Water Education, in Delft in the Netherlands and the Abdus Salam International Centre for Theoretical Physics (ICTP) in Trieste in Italy. Although operating with significant autonomy, the programmes of these institutes are an integral part of the UNESCO Natural Sciences Sector programme. These institutes build scientific capacity in Member States, essentially in developing countries.

CATEGORY 2 are institutes and centres under the auspices of UNESCO which are not legally part of the Organization, but are associated with it through formal agreements approved by the General Conference. They contribute to the execution of UNESCO's programme through capacity building, through exchange of information in a particular discipline, through theoretical and experimental research and advanced training. There are nearly 50 UNESCO Category 2 Centres in science covering in particular the following fields:

- Water sciences
- Geosciences
- Renewable energy
- Science policy
- Biotechnology
- Space technology

CATEGORY 1 INSTITUTES

UNESCO-IHE INSTITUTE FOR WATER

EDUCATION, located in Delft, the Netherlands, one of the few institutions in the UN system authorized to confer accredited MSc. degrees was established as a UNESCO Institute in 2003. Since its inception in 1957, IHE – as it was known – has provided postgraduate education to more than 14,500 professionals (engineers and scientists) almost entirely from over 160 developing and transition countries. It has also graduated more than 100 PhD candidates and executed numerous research and capacity building projects throughout the world.

Today UNESCO-IHE carries out research, education and capacity building activities in the fields of water, environment and infrastructure. Jointly owned by UNESCO and the Government of the Netherlands it aims to strengthen and mobilize the global educational and knowledge base for integrated water resources management and to contribute to meeting the water-related capacity building needs of developing countries and countries in transition. It serves as an international standard-setting body for postgraduate water education programmes and continuing professional training concentrating efforts on building human and institutional capacity through education, training and research.

UNESCO-IHE aims to:

- Offer education, training and research programmes;
- Provide capacity-building services particularly for developing countries;
- Set up and manage networks of educational and water sector institutions and organizations worldwide;
- Serve as a 'policy forum' for UNESCO Member States and other stakeholders;
- Provide professional expertise and advice on water education;
- Play a leadership role in international standard setting for postgraduate water education programmes and continuing professional education.

www.unesco-ihe.org/



THE ABDUS SALAM INTERNATIONAL CENTRE FOR THEORETICAL PHYSICS (ICTP),

located in Trieste, Italy, has been a driving force behind global efforts to advance scientific expertise in the developing world. Founded in 1964 by the late Nobel Laureate Abdus Salam, ICTP seeks to accomplish its mandate by providing scientists from developing countries with the continuing education and skills that they need to enjoy long and productive careers. Over the past 50 years, more than 130,000 visitors from 184 countries have visited ICTP to conduct research and discuss the latest findings in their fields. The centre has long been valued as a cultural melting pot.

The ICTP:

- fosters the growth of advanced studies and research in physical and mathematical sciences, especially in support of excellence in developing countries;
- provides an international forum of scientific contact for scientists from all countries, and develops high-level scientific programmes keeping in mind the needs of developing countries;
- conducts research at the highest international standards and maintains an environment conducive to scientific inquiry for the entire ICTP community.

ICTP's success is based on a strong foundation of two core activities: research and training. Its in-house staff of world-class physicists and mathematicians perform research at the cutting edge of their fields, the results of which are published in select physics and other science journals.

The ICTP pursues scientific research in a variety of fields, including:

- High Energy, Cosmology and Astroparticle Physics;
- Condensed Matter and Statistical Physics;
- Earth System Physics;
- Mathematics;
- Applied Physics.

The Centre organizes around 60 international conferences and workshops annually in cooperation with the world scientific community. These activities keep the Centre at the forefront of global scientific research and enable staff scientists to offer ICTP associates, fellows and conference participants a broad range of research and learning opportunities. The Centre is linked to scientific databases around the world and boasts one of the finest libraries of its kind in Europe.

ICTP offers a number of longer-term educational programmes for scientists at all stages of their careers. One of the Centre's most successful activities, the Postgraduate Diploma Programme, has trained 696 young, talented students from 69 developing countries since it began in 1991.

It consists of rigorous, one-year long, pre-doctoral course work, with a part devoted to independent projects. The Programme offers courses in High Energy Physics, Condensed Matter Physics, Earth System Physics and Mathematics.

For scientists further along in their careers, ICTP coordinates a sabbatical programme known as the Associates Scheme that supports visits to Trieste for a number of stays of up to two months over a six-year period. Since the Associates Scheme's inception in 1964, more than 2,500 scientists from nearly 100 developing countries have been chosen as ICTP Associates.

The ICTP is administered by UNESCO, and is funded largely through a generous grant from the government of Italy, with additional financial support from UNESCO and the IAEA.

<http://www.ictp.it/>

As part of its mandate, the **UNESCO INSTITUTE OF STATISTICS (UIS)** collects and disseminates science statistics across the United Nations system gathering data from more than 200 countries and territories through its biennial survey and partnerships with key organizations. Science statistics are used in particular to compile the UNESCO Science Report.

www.uis.unesco.org/

CHAIRS IN SCIENCE

UNITWIN is the abbreviation for the UNESCO university twinning and networking scheme. The UNITWIN/UNESCO Chairs Programme promotes the establishment of UNESCO Chairs and UNITWIN Networks in higher education institutions. The aim is to build capacity in higher education and research institutions through the sharing and exchange of knowledge in a spirit of international solidarity and to promote North-South, South-South and triangular cooperation as a strategy to develop institutions.

Well over 250 of the university Chairs in the UNESCO/UNITWIN Chairs programme are in the field of the natural sciences with a majority in the field of basic and engineering sciences. These are set up to develop UNESCO's programmes in science in particular in priority areas such as Africa and gender equality, and to harness the power of networking of universities and centres of excellence.

**Executive Office
Natural Sciences Sector
UNESCO
1, rue Miollis
75732 Paris Cedex 15, France
sc.communication@unesco.org**