

news

Institute for Environmental Science and Technology

The Institute for Environmental Sciences and Technology (ICTA) of the Autonomous University of Barcelona was inaugurated on December 3 2003. Researchers of different disciplines dealing with environmental issues including earth and life sciences, town and country planning, environmental management, social sciences, educational sciences, and computer science have at the ICTA a meeting point to exchange and discuss ideas in an interdisciplinary way. Graduate research and training in the field of environmental sciences are a priority of the ICTA. Xavier Gabarrell, professor of the Department of Chemical Engineering chairs the ICTA Executive Board.

The Institute started its activity as a Center for Environmental Studies in 1996 and its main goals have been: (a) to provide a frame for exchange and discussion to researchers of different disciplines; (b) to drive and promote interdisciplinary research on environmental sciences; (c) to promote research programs on different aspects of environment and related issues; to collaborate in the training of specialists in environmental sciences ; (d) to establish a link between university and society to favour and promote the social dialogue and the reflection on the environment and the territory; to provide a research structure, technical and scientific advice and methodological instruments, to confront the socio-environmental management at different scales.

The ICTA has a specialized Centre of Documentation, which initiated from private donations and is planned to expand. Its databases can be useful to consultancies and professionals dealing with environmental issues.

Researchers from the IMIM, Barcelona, participate in the Encyclopedia of DNA Elements (ENCODE) Project

The Biomedical Informatics Group (GRIB) of the Institut Municipal d'Investigació Mèdica (IMIM), directed by Roderic Guigó, is participating in a unique project to identify all functional genes of the human genome. The project, called Encyclopedia of DNA Elements (ENCODE), depends on an international consortium which gathers teams of investigators with different backgrounds and expertise. ENCODE is analyzing rigorously a defined portion of the human genome sequence and will evaluate the different techniques, technologies and strategies currently available to identify all the functional elements in human genomic sequences. The project aims also to identify gaps in the annotation of the genomic sequences, and consider the abilities of the methods applied to be scaled-up to analyze the entire human genome.

CosmoCaixa, the new Science Museum of Barcelona

The Science Museum of Barcelona, currently called CosmoCaixa reopened after a three-year construction of a new building in the premises of the 23-year old Science Museum of "la Caixa"

Foundation ("la Caixa" is a strong Catalan Saving Bank). From the previous museum, only the four-storey Art-Nouveau style building has been preserved, which currently houses the CosmoCaixa offices. The motto of the new museum is "From a quark to Shakesperare", and its content are universal. CosmoCaixa permanent exhibition displays a vision of the history of matter and comprises four sections: Inet Matter, which considers the laws of physics and natural phenomena: Living Matter, which tries to explain the emergence of life on Earth, and living beings' responses to the uncertainty of the environment; Intelligent Matter, from the neurone to the formation of the brain; and Civilised Matter, which deals with the key factors that have made humans such a special species.

The most dramatic exhibits in the museum are the Flooded Forest and the Geological Wall. The former is a reproduction of the Amazon tropical forest that has been set up in a 1000 m² glass house. It comprises 80 plant species and 52 animal species, and uses around 400,000 liters of water. The Geological Wall consists of seven enormous "slices" of rock that enables the visitor to interpret the world's geology. The museum will host also temporary exhibitions and has two planetariums (the Bubble Planetarium is intended for children. In addition, lecture rooms will host lectures, course, debates and other activities. Other rooms have been designed for young children to enjoy science with hands-on activities. Since its inauguration in late September 2004, the museum has already hosted several meetings, including the big annual meeting of the European Collaborative for Science, Industry and Technology Exhibitions ECSITE (4–6 November). (ECSITE is the representa-

tive organisation for nonprofit science-based visitors attractions in Europe.)

Joint Project of the US National Institutes of Health (NIH) and the University Pompeu Fabra (UPF) on “Vulnerability to Nicotin-Addiction”

Rafael Maldonado, researcher at the University Pompeu Fabra (UPF) in Barcelona is participating in a project funded by the National Institute on Drug Abuse (NIDA), of the US National Institutes of Health (NIH), to study nicotin addiction. Maldonado, director of the Neuropharmacology Unit of the Department of Experimental Sciences and health at the UPF, has received a grant (US\$ 1,500,000) to lead a five-year study in which other European research teams will participate. The aim of the project is to find genes involved in the vulnerability to nicotin addiction. The study will focus first on the mechanisms involved in the development of nicotin addiction in knockout mice. Such mechanisms could have their neurobiological substrate in the endogenous opioid system.

At the second step, the research will focus on finding out the genes involved in nicotin addiction by applying genomic analysis technologies. A main feature of this project is that it will study not only physical dependence on nicotin, but also behavioural changes caused by the presence of nicotin in the organism, including anxiety, compulsory need of smoking, and relapses in the smoking habit after long periods of abstinence.

CONFERENCES

2nd World Botanic Gardens Congress

The 2nd World Botanic Gardens Con-

gress was held in Barcelona on April 17 through 27, 2004.

About 500 delegates from botanic gardens in 70 countries met to exchange opinions and experiences and discuss global conservation action. A major goal of the meeting was to review the progress of the International Agenda for Botanic Gardens in Conservation. This Agenda, launched at the First Botanic Gardens Congress held in Ashville, USA, in 2000, is a framework for a policy for botanic gardens worldwide to contribute to biodiversity conservation, especially according to the guidelines given by the Convention on Biological Diversity (CBD).

In 2002, the CBD adopted the Global Strategy for Plant Conservation, whose ultimate, long-term aim is to stop the increasing loss of plant diversity. The Barcelona Congress provided an opportunity for botanic gardens to develop a set of draft targets for the implementation of the Agenda. Two major outputs of the meeting were the decision to establish an International Day for Botanic Gardens, which might reach a global scope through UNESCO, and the release of the document “Botanic Gardens, an increasing value.

The main topics dealt with at the Congress were: “Implementing plant conservation policies through botanic gardens”, “The practice of plant conservation through botanic gardens”, “Botanic gardens and ecosystem conservation”, “Environmental education, the sustainable use of plant resources and the awareness of plant diversity”, “Sustainability: the contribution of biodiversity to sustainable living”, “Botanic garden horticulture and development”, “Botanic garden research” and “Heritage”.

The Botanic Institute and Gardens of Barcelona, located in Montjuïc, the second biggest park of Barcelona, was the venue for the parallel sessions of the Congress (the venue for plenary sessions was a Hall in the neighbour Palau Sant Jordi).

Since 1999, this institution has new grounds and offers a magnificent collection of plants and trees from different Mediterranean dates back to re-

gions. Its premises harbour the Botanical Institute of Barcelona, which is devoted to conservation of plants, research on botany and diffusion of plant-life knowledge. Its oldest collections date back to the seventeenth century.

AWARDS

2004 Prince of Asturias Prize for scientific and technical research to Joan Massagué

The Prince of Asturias Foundation, settled in Oviedo, in north-western Spain, awarded its annual prize for scientific and technical research to five scientists that lead current cancer research worldwide.

Barcelona-born Joan Massagué, chair of the Cancer Biology and Genetics programme at Memorial Sloan-Kettering Cancer Center in New York, will share the 50,000-Euro (around US\$ 60,000) prize with Tony Hunter-from the UK-and Judah Folkman, Bert Vogelstein and Robert Weinberg-from the USA.

Joan Massagué, who took his doctorate in Pharmacy (Biochemistry) at the University of Barcelona in 1978, joined Brown University, Rhode Island, in 1982. There he discovered the structure of the insulin receptor. He lectured Biochemistry at the University of Massachusetts and joined New York Memorial Sloan-Kettering Cancer Center to direct the Department of Cell Biology and Genetics. In 2003 he was appointed to head the Program for Cancer Biology and Genetics. In addition, Massagué is also Howard Hugues Medical Institute researcher.

Massagué's team research focuses mainly on the study of the role of the transforming growth factors β (TGF- β) signalling pathway in cell regulation and disease. TGF- β and related factors-activins and bone morphogenetic proteins (BMPs)-are major regulators of many cell functions during embryo-

genesis and in the adult. The disruption of this signalling network by mutation is at the basis of several human genetic disorders, cancer and other diseases. The ultimate goal of Massagué's team research is the treatment of disease conditions originated from the alteration of TGF- β signal transduction pathways from the cell membrane to the nucleus.

The UNESCO has acknowledged the contribution of the Príncipe de Asturias Awards towards humankind's cultural heritage, and its role in the celebration and promotion of scientific cultural and humanistic values.

Four Catalan young researches among the recipients of the European Young Investigator Awards (EURY)

The European Young Investigator Awards (EURY) Scheme aims at attracting young researchers from anywhere in the world to work in Europe and lead their own research teams. The award consist of providing the resources (1,000,000–1,250,000 per year for five years) to pursue an independent career, including the development and building up of a research group where appropriate. At its first call, 16 countries participated: Austria, Belgium, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom. Of the 25 recipients of the award, four are Catalan: Jaume Bascompte, Adriano Camps, Jaume Gomis and Francesc Posas. The titles of the projects that they will develop over the next five years are, respectively: "Networks of Plant-animal Interactions: the Architecture of Biodiversity" (Ecology), "Passive Advanced Unit (PAU): A hybrid L-band Radiometer, GNSS-Reflectometer and IR-radiometer for Passive Remote Sensing of the Ocean" (Engineering and Computer

Science), "String Theory and Holography" (Physics), and "Function and Regulation of SPAK Signalling Pathways in Eukaryotic Cells" (Life Sciences).

OBITUARY

Ramon Margalef (1919-2004)

Ramon Margalef, Professor Emeritus of Ecology of the University of Barcelona and a member of the Institute for Catalan Studies, passed away at age 85 on May 23. His wife (Maria Mir, also a biologist) survived him only for one week.

Margalef was the first professor to have a chair in Ecology at the University of Barcelona; that was also the first chair in ecology of Spain. He was a great limnologist, marine biologist and ecologist and trained several generations of scientists in the classroom, in the laboratory, in the field and at sea. In the early 1940s, after the Spanish Civil War, which interrupted his education, he studied at the University of Barcelona to obtain his degree in Natural Sciences while working as a clerk at an insurance company, and doing research on Iberian aquatic ecosystems at the Botanical Institute of Barcelona. His doctoral thesis on "Temperature and morphology of living beings", which he defended in 1951, left open many questions that he later addressed in his research. Margalef worked at the Institute for Fisheries Research (currently Institute for Marine Sciences) of the CSIC (Spanish Research Council) and left the Institute in 1967 to hold the new chair of Ecology at the University of Barcelona. When he retired, he was appointed Emeritus Professor and continued working and sharing his knowledge with colleagues. He gave his last seminar shortly before his death.

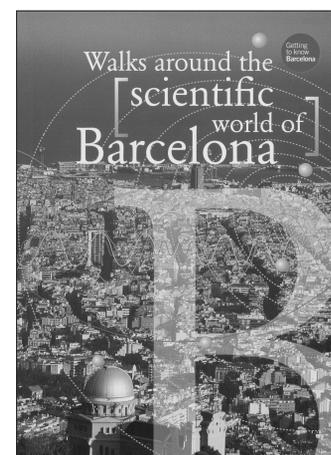
Margalef was a prolific author and produced a huge body of scientific literature, his earliest scientific publications dating back to 1943. His article "The theory of information in ecology" (1957), in which he suggested that the

theory of information should be applied also to the study of species diversity in ecosystems, became a classic of ecology literature. It was written originally in Spanish and published later in English in the journal *General Systems* (1958). This article, along with another one ("On certain unifying principles in ecology") that Margalef published in 1963, and his small book *Perspectives in Ecological Theory* (1968) provided a theoretical reference frame to ecology, which was still a young science. Margalef's approach was holistic and integrative, and he based it on his profound knowledge of aquatic ecosystems.

Over the last forty years of his life, Margalef's work was recognized internationally with numerous awards. He was elected member of the Institute for Catalan Studies in 1978. Younger generations of researchers, not only in the field of ecology but also in other scientific domains, have benefited of Margalef's unique approach to teaching and research.

BOOK REVIEW

Walks around the scientific world of Barcelona



Xavier Duran, Mercè Piqueras
2003, Ajuntament de Barcelona, Barcelona
ISBN 84-7609-999-1

This unusual guidebook aims to fill the gap between the well known Barcelona artistic heritage described in

most tourist guidebooks and the city's commitment with science and technology throughout its history. As Joan Clos, Major of the city, states in the foreword, the book attempts "to bring people closer to the scientific and technological aspects that are all around us but are not properly understood or appreciated as such, and to explain the inventions and discoveries that lie behind things that are part of everyday life in the city." The authors offer a view of the city that is far from the view that most locals have of their hometown, not to mention the view that tourists have.

The Rambla, the most populated street in Barcelona, where all tourists end up at one time or other during the day or even the night (its *quioscs* are open 24 hours a day), hides a scientific life in its own. A small photography museum hides in the attic of one of the best photography shops in town, a theatre hides the building of the Royal Academy of Sciences and Arts. Even its name, *rambla*, is related to a scientific field: earth science. In fact, *rambla* comes from the Arab and means intermittent creek or waterhouse, where rainwater from a catchment area runs off. The book is

not intended to be an exhaustive scientific guide of the city, which would require much more space. The aim of both the City Council and the authors is to show another vision of Barcelona. Besides guiding through the scientific world of the city, as the title indicates, it tries to encourage visitors as well as locals to see Barcelona in a different way. Curious travellers will surely enjoy reading this book that links Barcelona's artistic heritage with the almost unknown scientific and technological world that pervades the city and has also its own tradition.