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Research Round-up: CER2005 special

14/15 November 2005 saw the second Communicating European Research conference, which was held at the Heysel Exhibition Centre in Brussels. Over 2500 scientists, media professionals and policy-makers came together for two days of debates, forums, training sessions and discussion groups on how better to communicate in the area of science and technology. The whole event was accompanied by an exhibition of some 240 stands, showcasing the best of European research. Participants were asked to vote for their favourite session, stand and speaker. New results of European research projects were presented in special press briefing sessions.

Communication prizes

The prizes presented for best communication actions were:

Best forum to **Talking Nano – what makes nanotechnology so special**, which was chaired by Richard Hayhurst of 4Bio (UK) and featuring three nanotechnology research projects currently funded by the European Union.

Best speaker to **Dr. Lars-Peter Linke** of COGNOS AG (Germany) who led several sessions on media skills for project managers.

Best stand to **ITER – the way to fusion energy**, giving information about the ITER international fusion energy project, which will be based in Cadarache in Southern France.

Some Research Results presented at the conference

Fishbase – promoting sustainable fish consumption

CER's opening day saw the presentation of 'Fishbase', a database that records the levels of the world's fish stocks. "Our aim was to improve coastal zone management in developing countries by giving managers more information," explained Dr Rainer Froese. Fishbase now contains information on 29 000 commercial fish types, 40 100 pictures and is visited by 1 million visitors every month, coming from universities, governments, business, NGOs and interested individuals. Along with the common and scientific names of the fish, there is a glossary, information about the family, country, life history, etc. of the species, plus more general information on the ecosystem and biodiversity.

Fishbase has also produced FisherMin, a flexible 'fish-ruler' to build consumer awareness about fish stocks. The tool indicates the actual size that fish should be when they reproduce – for example, turbot should be over 55cm and sole over 33cm. Consumers are asked to measure each fish to ensure that they are not buying fish that have not reached adulthood. The idea is that the ruler could be used to put pressure on the fishing industry to stop catching 'baby fish' and thus help to sustain fish stocks on a global scale.
www.fishbase.org

Making sense of methane

Methane is a natural gas, produced continually in unimaginably vast quantities underneath ocean floors, which offers huge commercial potential. But these same reserves are also a source of global warming, particularly the methane that escapes from the ocean floor and bubbles up to the surface. Fortunately for our Earth, most methane is either confined or broken down by natural causes. But there is growing evidence that global warming may be disrupting that balance, leading to a self reinforcing cycle whereby methane released into the atmosphere leads to more warming which causes sloped ocean floors to shift and release more underlying methane into the air.

Several EU research projects are investigating the complex interplay of ocean salts, sea temperatures and seabed-lying marine bacteria in maintaining the 'barrier' that prevents destabilising volumes of methane from reaching our atmosphere. One of the most intriguing is HERMES, an Integrated Project involving 45 European partners and funded from the EU's Sixth Framework Programme. HERMES is focused on the Black Sea and its anaerobic, or oxygen-free, character. This inland sea is riddled with numerous seepages of methane gas bubbles from the ocean floor, as well as giant mud volcanoes and carbonate 'chimneys' – "with a thick flesh of organisms that oxidise methane and prevent it from rising to the surface", explained Bo Barker Jorgensen, whose organisation, the Max Planck Institute for Marine Microbiology, is among the project's participants. "We've discovered that the enzyme produced by the organisms to attack the methane resembles methane itself. This goes straight back to the very beginnings of chemical processes that sparked the creation of life," he said.
www.metrol.org

PEOPLE – How clean is the air in European cities?

The PEOPLE (Population Exposure to Air Pollutants in Europe) project assessed outdoor, indoor and personal exposure levels of air pollutants in European cities, focusing on emissions from transport. Six European cities were studied: Brussels, Bucharest, Dublin, Lisbon, Ljubljana and Madrid. In each city, diffusive samplers are used to monitor personal exposure and environmental pollution levels of benzene. In a first avenue of research, PEOPLE aimed to get data for pollution levels that represent typical behaviour for people who live in cities. Thus, the focus of the project was towards the two most visible sources of pollution: transportation and smoking. Up to 200 people were selected after the screening carry such monitors in the particular city under investigation for a period of 12 hours. The people chosen were people that commuted from home, usually in the suburbs, to work in offices, usually in the city center. A wide variety of different professions were represented including for example teachers, journalists, nurses, electricians, librarians, bankers amongst many others. The monitors are collected, analysed and compared to both a control group that consists of people who work or stay at home and a smoking group of people. The results received are linked to the particular person's lifestyle and each participant recorded all of their activities and the places that they visited. By completing this diary, that also indicates transport modes and presence of tobacco smoke, a complete profile of the day, with a 5 minute time resolution, was possible.

PEOPLE showed that Personal exposure to benzene is linked to lifestyle, in particular transport and smoking. The smoking group of volunteers had the highest level of exposure as expected. Of the commuting groups the car users had the highest level of exposure due to closer proximity to air mixed with emissions from car exhausts. The general level of exposure is linked to the background air quality of the city. There was a good relationship between the outdoor air quality and the exposure of the population. The ratio between population exposure (non smoking commuters) and background air quality (compliance monitoring locations) was approximately two to one. This reflects the importance of movement through "hot spots" and travelling at busy times when pollution levels are high. The lowest level of air pollution in the six cities studied was measured in Dublin and the highest was measured in Bucharest. The relatively good air quality in Dublin is due to enhanced pollution dispersion due to high winds whereas the poor air quality in Bucharest is due to high levels of emissions from transport.

The project has enabled the development of a estimation approach to population exposure through the development of "exposure factors". This approach may be useful to contrast the relative importance of different activities and places across European cities. The information from the project also acts as a platform for consideration of more complex particulate pollution that is controlled by EU air quality Directives.

More information

Details of all media briefings that took place during CER2005, and the programme, are available at
http://europa.eu.int/comm/research/conferences/2005/cer2005/press_corner_en.html

Three special conference magazines "The ExCERpt" were published and are available at
http://europa.eu.int/comm/research/conferences/2005/cer2005/index_en.html

For more info on other projects which demonstrate European research in action, please see
http://europa.eu.int/comm/commission_barroso/potocnik/research/researchia_en.htm