## 2004 ICSU Grants Program—IUPAC Applications

In order to promote international scientific and technological activities that contribute to the benefit and well being of society, the International Council for Science (ICSU) offers a grants program to support collaborative scientific initiatives of the ICSU "family." This year, ICSU called for applications for activities planned for 2004, and which preferably focus on one of the following themes:

- science and technology for sustainable development
- capacity building and science education
- science/policy interface
- dissemination of data information on science and technology
- emerging science and technology—creation of new knowledge

Proposed activities should involve scientists from the global scientific community, across scientific disciplines and national borders. Applicants are expected to develop joint activities and to collaborate with other eligible bodies, as well as with ICSU's International Scientific Associates, National Scientific Members, and National Scientific Associates in preparing and submitting proposals.

Within IUPAC, application information was disseminated in November 2002, and the officers were invited to review within their divisions and committees which projects could be developed into suitable applications. By the deadline of 1 March 2003, two applications were completed and submitted with the collaborative support of other ICSU members:

- *Interdisciplinary Harmonized Approach to Metrological Traceability of Chemical Measurement Results*, co-support from the International Union of Pure and Applied Physics (IUPAP)
- *Establishment of a System to implement the Global Sharing of Chemical Education Reading Material with the Aid of Bi-Directional Machine Translation*, co-support from the Science Council of Japan, the Committee on Capacity Building in Science, and the Federation of Asian Scientific Academies and Societies

In both cases, "seed" projects have been funded by IUPAC.

In addition, IUPAC has endorsed the support of three applications from other ICSU eligible bodies:

- *Toxicology Postgraduate Research in Developing Countries*, by International Union of Toxicology (IUTOX)
- *Network of Women Physical Scientist in Africa*, by IUPAP
- *Foundation of an African Institute for Mathematical Sciences*, by International Union of Theoretical and Applied Mechanics (IUTAM)

Each proposal will be reviewed by ICSU in terms of scientific merit, relevance to their priority themes, innovation, visible and measurable outputs, potential for developing follow-on activities, interdisciplinary and international nature, and the impact of the ICSU support on the proposed activity. Successful applications will be announced later this year. Brief outlines and objectives of submitted proposals are provided below.

## Interdisciplinary Harmonized Approach to Metrological Traceability of Chemical Measurement Results

Chemical measurements are important for almost every aspect of our life, including health, food, laboratory medicine, environment, and water and energy resources, as well as science. Chemical measurements affect the world economy at large and are the subject of a number of international mutual recognition agreements and similar arrangements. However, only measurement results where metrological traceability is clearly established can be compared, independent from when and where they were obtained. This project's objective is to develop common concepts for metrological traceability of measurement results obtained by measurement procedures (techniques) based on sound measurement principles and methods in chemistry as well as physics.

These common concepts shall be:

- applicable to all metrological levels from a basic definition of the "stated reference" (units or others) through metrological institutions preparing and distributing metrological tools, to the field labora-

tories using metrological tools in their routine work, and to end-users who should know and be able to assess the metrological validity of the results obtained by or reported to them
- applicable to all measurement: routine, research, commercial, ad hoc, etc.
- understandable to a wider measurement community, including students, routine analysts, industry, research and scientific workers, as well as to legislators, accreditation bodies, and other regulatory institutions
- general in nature, thus enabling new emerging fields and techniques to be easily incorporated
- interdisciplinary, thus ensuring common understanding, encouraging cross-fertilization (for instance, between chemistry and physics), and at the same time clearly presenting and addressing specifics of various measurement areas

A document, preferably in the form of an interorganizational harmonized protocol, will constitute the basic outcome of the project. Premises to this project are detailed in the Web pages at the address below and in *CI* (Vol. 25, No. 2 March-April 2003, p 17).

**For more information contact the Task Group Chairman Paul De Bievre <paul.de.bievre@skynet.be> or Ales Fajgelj <a.fajgelj@iaea.org>, the chairman of the Interdivisional Working Party on Harmonization of Quality Assurance.**

**www.iupac.org/projects/2001/2001-010-3-500.html**
**www.iupac.org/projects/2003/2003-004-1-500.html**

## Establishment of a System to Implement the Global Sharing of Chemical Education Reading Material with the Aid of Bi-Directional Machine Translation

While modern technologies are making it possible to easily share information across the world, an adverse consequence of such globalization could be that a single language in this instance English will dominate. Easily available and cost effective translations of information are therefore highly desirable. The objective of this project is to use machine translation (MT) software to translate information on chemical education and use the web to disseminate the documents for the benefit of students, teachers, and scientist world wide.

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A feasibility study is currently underway that includes the development of MT between English and three different languages: French, Russian, and Japanese. These choices will allow testing the application with languages of increasing difficulty. As the project develops it will address the needs of developing countries.

**For more details on this project, contact the Task Group Chairman Yoshito Takeuchi <yoshito@chem.kanagawa-u.ac.jp>.**

**www.iupac.org/projects/2002/2002-021-2-050.html**

## Toxicology Postgraduate Research in Developing Countries

Global changes in industrialization patterns have the potential to exert major impacts on human and environmental health, particularly when problematic chemical-related industries in developed countries are relocated to developing countries for economic reasons. In these less-regulated settings, the ability to identify, monitor, and manage the adverse effects of industrial activities is hampered by a paucity of toxicological expertise.

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One means of addressing this lack of expertise would be to provide scientists and regulators in developing countries with ready access to locally relevant toxicology and risk assessment methodologies. This would enable the local scientific community to build their capacity to address human and ecological health concerns caused by chemical exposures in occupational and environmental settings. The wider community will be the ultimate beneficiary of the consequent adoption of more appropriate processes for sustainable development and industrialization.

This proposal by IUTOX, together with IUPAC and IUPHAR, is to develop a postgraduate research pro-