

Malcolm F.G. Stevens is Awarded the First IUPAC-Richter Prize

The newly established IUPAC-Richter Prize in Medicinal Chemistry has been awarded in 2006 for the first time. The recipient is Prof. Malcolm F.G. Stevens, Ph.D., D.Sc., OBE, of Nottingham University, U.K.

Dr. Stevens received this award in recognition of his leadership and contributions to the discovery of anti-cancer drugs. His work has resulted in the discovery of six novel small molecule agents that have progressed

into clinical trials. Two of these are now registered drugs. Among them is Temozolomide (Temodal™), used to treat glioblastoma multiforme (a deadly brain cancer), which is licensed to the Schering-Plough Corporation and has been marketed worldwide since 1999. Another product, Phortress, is in early-stage clinical trial against breast tumors; other products from his current research, exploiting other mechanisms for anticancer agents, are also expected to enter development.

The IUPAC-Richter Prize—a plaque and a check for USD 10 000—will be presented on 29 August 2006 at the XIXth

International Symposium of Medicinal Chemistry in Istanbul, Turkey. The plaque is signed by Prof. Bryan Henry, president of IUPAC, and Erik Boggsch, chief executive officer of Gedeon Richter Limited.

Dr. Stevens studied pharmacy at the University of Nottingham, England, and obtained his Ph.D. in 1963, also at Nottingham. He was subsequently awarded a D.Sc. in 1979 for his published research on the novel synthesis of heterocyclic compounds. He pursued an academic career, spending seven years as a lecturer in medicinal chemistry at Heriot-Watt University in Edinburgh, Scotland, and then as a reader (i.e., an associate professor) in medicinal chemistry at Aston University in Birmingham, England. He was appointed professor of experimental cancer chemotherapy at Aston in 1979, and starting in 1983, spent six years as head of the Department of Pharmaceutical Sciences. In 1992 he returned to Nottingham University as

Cancer Research UK professor of experimental cancer chemotherapy and director of the Centre for Biomolecular Sciences, the position that he holds today. In addition, he is also chief scientific officer of Pharminox, a spin-off of Oxford University focused on the discovery and development of novel small molecule drugs for the treatment of cancer.

Dr. Stevens has received other forms of recognition from learned societies during his career: the UK Royal Society of Chemistry (RSC) Interdisciplinary Award (1991), the Royal Pharmaceutical Society of Great Britain Harrison Memorial Medal (1994), the RSC George and Christine Sosnovsky Award for chemical contributions to cancer research (2002), and the American Association for Cancer Research Bruce F. Cain Memorial Award (2003) for translational cancer research.

 www.iupac.org/news/archives/2006/Richter_prize.html



Malcolm F.G. Stevens, winner of the first IUPAC-Richter Prize in Medicinal Chemistry

Capacity Building in Science

The Committee on Scientific Planning and Review (CSPR) of the International Council for Science (ICSU) recently appointed a panel to conduct a priority area assessment (PAA) of capacity building in science. This is ICSU's third PAA; the other two dealt with "Environment and its Relation to Sustainable Development" and "Scientific Data and Information." These assessments have been carried out as part of ICSU's defining a strategy for 2006-2011.

In its report, *Priority Area Assessment of Capacity Building in Science*, the ICSU panel calls attention to three crucial challenges to building scientific capacity.

The first challenge, a development problem, is the widening gap between advances in scientific knowledge and technology and society's ability to capture and use them. This is not just a question of the digital divide, although the use of knowledge does lag behind in developing countries; it is more the fact that having *information* does not necessarily translate into having *knowledge*. In addition, introducing science and technology to a world with diverse experiences presents a significant barrier. Finding ways to better communicate information about science to the public can help transcend this barrier and begin a constructive dialogue about scientific discoveries and new technologies. Developing national strategies for science and

Priority Area Assessment on Capacity Building in Science



technology development and “national innovation systems” linked to policy development can also help close knowledge gaps, as can strengthening international cooperation and information exchange related to science.

The second challenge is the apparent declining interest in the study of science and engineering around the world. To turn this trend around, educators and scientists must find better ways to teach science and mathematics at all levels, in ways that “turn students on” to science early and often. Over the past decade, the international scientific community has increasingly focused on science education at all levels and has identified enhancing science education as one of the critical paths to strengthening the scientific workforce. The issues involved include improving the quality of science education, teacher training, and science curricula; expanding the number of educators and the links between formal and informal education; encouraging more women to enter careers in science; creating effective forums for sharing experiences in science education and educational reform movements; and instituting more uniform methods of testing, evaluating, and assessing which reforms work and which do not. The bottom line is that attracting, developing, and retaining talent in science and technology should be a priority for the entire scientific community.

The third challenge, an institutional problem, is the need to turn knowledge *consumers* into knowledge *creators*. Better institutions are needed to move knowledge to where it is needed, especially in devel-

oping countries. Education and science ministries, international organizations (including aid agencies), and the international scientific community must help build local capacities in science and technology to produce useable knowledge. They must also help connect local universities and research institutions with national innovation systems for economic development.

The recommendations included in the *Priority Area Assessment* report are put forward for consideration by ICSU itself, as well as its international scientific unions, national members, interdisciplinary bodies, and joint initiatives. Capacity building is a challenge that should affect the entire ICSU family. By working jointly in implementing the recommendations, the ICSU family should be able to increase scientific capacity building through its research programs, conferences and symposia, and other dedicated efforts world wide.

ICSU Report of the CSPR Assessment Panel on Capacity Building in Science, 2006 [ISBN 0-930357-64-7]

 www.icsu.org/2_resourcecentre/Resource.php4?rub=10&id=33

Four Awards, One Passion: Chemistry

The sun of Philadelphia beamed through the large reception room of the Chemical Heritage Foundation (CHF) on May 18, and excitement stirred the 200 people seated in the room. This was Heritage Day 2006, CHF's annual awards ceremony recognizing individuals who embody the advancement of the chemical world.

The celebration opened with the award of the Othmer Gold Medal to Ronald Breslow, professor at Columbia University since 1956. Breslow has worked to synthesize new molecules and study their properties, and he discovered the phenomenon of anti-aromaticity and the mechanism of the thiamine (vitamin B1) in the biochemical field. Recently, his work has focused on the mimicry of enzymatic molecules, which he hopes will help in the fight against cancer.

Breslow's award was introduced by an old friend and former student: Robert Grubbs, 2005 Nobel Prize winner in chemistry. Then, with classical piano music playing in the background—recorded by Breslow himself—Arnold Thackray, president of CHF, placed the

medal around Breslow's neck. From Breslow's speech: "People understand science as exploring the world. They don't necessarily yet understand science as extending the world. But that's one of the major things that chemistry does, and it's one of the things that has made it always so exciting to me."

Next, the new CHF Award for Supporting Industry was presented to Richard Bolte Sr., founder and chairman of BDP International. Richard Bolte Jr., president and CEO of the company, accepted the award on his father's behalf and thanked CHF. BDP International, created in 1966, is a leader in global logistic and transportation solutions, and more than 60 percent of BDP's logistic business is in serving the chemical industry. "BDP is very much a family business and has a strong family spirit," Bolte said. "We contributed early on to my father's success. One of his first offices was in the Lafayette Building . . . on Saturdays and Sundays he'd bring us in to the office. While he was looking at files, we were looking for entertainment."

The AIC Gold Medal was next presented to Roald Hoffmann. A Nobel laureate in chemistry in 1981, Hoffman is a professor at Cornell University and also a poet and playwright. Hoffmann's began his acceptance speech by displaying a Donald Duck comic book featuring Donald as a mad chemist; he then moved on



Benjamin Franklin is a regular visitor at Heritage Day.

to more serious topics, such as the necessity of theory: "There is a special connection of theory with teaching," he confided. "I think that the person who tries to explain thermodynamics to a first-year class must be learning something about how to explain something to other people . . . That's the lesson that I learned from teaching first-year classes: how to explain things. The pedagogical imperative is deeply rooted, and I'm proud to be a teacher to this day."

Finally, the Chemist's Club offered its Winthrop-Sears Award to Sol Barer, founder and CEO of Celgene. This biopharmaceutical company works on the development of molecules for cancer

and immunological disease. Barer told the up-and-down history of Celgene, which is linked with the infamous drug Thalidomide, found to cause deformities in babies whose mothers had used it during their pregnancy. Barer explained thusly: "In 1965, Dr. Jacob Sheskin at Hadassah Hospital at Hebrew University in Jerusalem provided a drug to a patient suffering from an inflammatory condition called ENL, associated with leprosy. It's a very painful condition, the patient couldn't sleep, and Dr. Sheskin gave [thalidomide] as a sleeping pill to this patient. The patient improved. He gave it to six other patients who had ENL. Within a few days they got better and within weeks all of the symptoms resolved. Skin lesions resolved, rheumatologic symptoms resolved, and the patients returned to normalcy. Nothing else had ever done that. So, from that point onward, Thalidomide became the standard of care for the treatment of ENL around the world."

Then he related: "In a very courageous, much-publicized, and not uneventful decision, the FDA granted approval to Celgene for Thalidomide for the treatment of ENL on July 16, 1998." Barer concluded, "There was no precedent in building a major pharmaceutical company from such a base, but we did."

 www.chemheritage.org/events/heritage06/index.html

Report by Laure Joumel <laurejoumel@gmail.com>, freelance writer.



Heritage Day 2006 awardees (from left) Sol Barer, Roald Hoffmann, and Ronald Breslow. Photo credit: Douglas A. Lockard.

In Memoriam—Allan Ure

IUPAC lost a valued and honored friend when Allan Ure died on 18 December 2005, after a period of illness. Allan was a world-renowned analytical chemist and spectroscopist who made many seminal contributions to environmental analysis, fractionation methods, and speciation. He will be remembered for his enthusiasm and energy as well as his good humor and quick smile. We who knew him had our lives enriched by his presence and are deeply saddened by the news of his death.

The *Journal of Soils and Sediments* (JSS) has published an extensive and thoughtful tribute to Allan [JSS 6(1), 62 (2006); doi:10.1065/jss2006.02.003] and is organizing a memorial section in an upcoming issue (to contribute, contact Philippe Quevauviller <philippe.quevauviller@cec.eu.int>). Here, we pay tribute to Allan's many contributions to IUPAC.

Allan began his IUPAC work in 1981 as an associate member of the Commission on Spectrochemical and Other Optical Procedures for Analysis (V.4). At the time, he was head of the Department of Spectrochemistry of the Macaulay Institute for Soil Research in Aberdeen,



Safety Training Program

Call for Host Companies



The IUPAC Committee on Chemistry and Industry (COCI) is seeking Host Companies for the IUPAC-UNESCO-UNIDO Safety Training Program (STP). The STP enables experts from developing countries to learn about safety and environmental protective measures by visiting and working with IUPAC Company Associates in industrialized countries. The STP brings IUPAC together with the United Nations Educational, Scientific, and Cultural Organization (UNESCO) and the United Nations International Development Organization (UNIDO) to promote interactions between developed countries and the developing world by disseminating state-of-the-art knowledge on safety and environmental protection in chemical production.

Seven trainees are currently awaiting placement at Host Companies. All are professional scientists and engineers who are supervisors or managers in chemical companies, government institutions, or academic laboratories. They have all been chosen for their experience and for their ability to influence leaders and staff in their workplaces and within their home countries. IUPAC and UNESCO provide funding for trainee travel to the Host Company, and the Host Company provides for local expenses during training.

STP Trainees visit the research and manufacturing facilities of IUPAC CA Host Companies for a two- to three-week period, during which the trainees shadow health, safety, and environmental professionals to gain first-hand experience in state-of-the-art practices. Trainees then apply their new knowledge at home in their workplaces, communities, and governments. Nine trainees, from Turkey, China, Egypt, Nigeria, Kenya, and Uruguay have participated in the STP at six Host Companies in the USA, UK, Japan, and South Africa since 2000.

There are many benefits to Host Companies. Besides the favorable publicity that all Host Companies gain, productive long-term relationships can build with the trainees and their home countries that can benefit the company and the trainee long after training is concluded. Dialogs between Host Company staff and trainees can lead to suggestions for improvements and new initiatives.

COCI is ready to assist Host Companies with trainee selection and scheduling and planning of site visits. Contact Mark Cesa <mark.cesa@innovene.com>, COCI chairman and STP coordinator, for more information and to volunteer!

 www.iupac.org/standing/coci/safety-program.html



Scotland. During his tenure as associate member, two parts of the V.4 series on *Nomenclature, Symbols, Units and their Usage in Spectrochemical Analysis* were published: *Part V: Radiation Sources* (PAC 1985, 57:1453-1490) and *Part VI: Molecular Luminescence Spectroscopy* (PAC 1984, 56:231-245).

Allan was elected to be a titular member of Commission V.4 in 1985, a position he held until 1989 when he was elected to serve as secretary of the commission from 1989 to 1993. During those years, several more parts of the V.4 series were published, including *Part VII: Molecular Absorption Spectroscopy, Ultraviolet and Visible (UV/Vis)* (PAC 1988, 60:1449-1460) and *Part VIII: Nomenclature System for X-Ray Spectroscopy* (PAC 1991, 63:735-746).

Allan was the principal author of three V.4 recommendations—*Part X: Preparation of Materials for Analytical Atomic Spectroscopy and Other Related Techniques* (PAC 1988, 60:1461-1472), *Part XII: Terms Related to Electrothermal Atomization* (PAC 1992, 64:253-259) and *Part XIII: Terms Related to Chemical Vapor Generation* (PAC 1992, 64:261-264)—utilizing his expertise in standardized extraction procedures for soil analysis (now widely used in laboratories throughout the world) and his numerous international contacts to harmonize the terminology used worldwide in his field of expertise.

Even after completing his term as secretary, Allan continued to contribute his vision to V.4 recommendations. In 1993, IUPAC's Analytical Chemistry Division Committee conscripted Allan to cochair the working party assembled to produce the third edition of the

IUPAC Compendium of Analytical Nomenclature (the so-called Orange Book). The incredible task of assembling and integrating the large number of IUPAC analytical chemistry recommendations published from 1984 to 1997 into the second edition occupied 4 years (and undoubtedly produced many gray hairs) and resulted in an extremely accurate, well-used volume. Later on, the working party produced electronic versions of most of the chapters, allowing the *Compendium* to be presented on the IUPAC website <www.iupac.org/publications/analytical_compendium> and enhancing its utilization and influence.

Through all of his IUPAC work, Allan was always enthusiastic and engaged, and his extensive knowledge of etymology and languages was extremely useful. We find it a wonder that he could juggle so many duties and tasks, considering his close involvement with the Royal Society of Chemistry Analytical Division, several journal editorial boards, a University of Strathclyde lectureship (in his retirement, no less), his IUPAC work, and his varied travels. We will be forever grateful for the body of work that Allan left behind and for the trails that he blazed, and we will remember him both as an extremely accomplished and able colleague and a good friend. We send our deepest sympathies to Allan's wife, Dorothy; his daughters, Jenny and Helen; his son, Allan; and his four grandchildren.

David S. Moore and Janos Inczédy wrote this tribute on behalf of the entire IUPAC organization.










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