

we hear that

Broecker to receive 2006 Crafoord Prize

Wallace S. Broecker's pioneering study of the global carbon cycle and his development of a theory of large-scale ocean currents have earned him the Crafoord Prize in Geosciences for 2006, according to the Royal Swedish Academy of Sciences.

Broecker, the Newberry Professor of Earth and Environmental Sciences at Columbia University, where he also is a senior research scientist at Lamont-Doherty Earth Observatory, was selected "for his innovative and pioneering research on the operation of the global carbon cycle within the ocean-atmosphere-biosphere system, and its interaction with climate," the award citation said.

Every year the Crafoord Prize, which carries a purse of \$500 000, recognizes someone in one of the fields of astronomy and mathematics, biosciences, geosciences, or polyarthritis research. The prize-awarding ceremony will be held this month in Lund.

The academy, which also bestows the Nobel Prizes annually, said Broecker's most important contribution to knowledge about the interaction between the atmosphere, the oceans, ice, and living organisms has been his study of the global carbon cycle. It noted that 35 years ago, Broecker developed an important flow model based on the interaction of land, atmosphere, and the oceans that boosted understanding of the link between carbon dioxide levels in the atmosphere and the oceans' chemistry.

The academy said Broecker also played an important role in developing the theory of large-scale ocean currents and matching it with the interactive Earth system. He was ahead of his time in the 1960s when he linked rapid climate changes during the last glacial cycle with changes in global ocean circulation patterns, the academy said.

King Faisal honor goes to Stoddart

Work in molecular recognition and self-assembly garnered UCLA professor J. Fraser Stoddart the King Faisal International Prize for Science.

Stoddart, director of the California NanoSystems Institute and UCLA's Fred Kavli Chair in Nanosystems Sciences, received the prize for chemistry. According to the foundation's website, he was recognized because his "introduction of quick and efficient template-directed synthetic routes to mechanically interlocked molecular compounds is of seminal importance. It has changed dramatically the way chemists think about molecular systems and how they can be used in the fabrication of molecular switches and machines such as molecular elevators and shuttles."

Stoddart and the other six prizewinners for 2007 were announced on 16 January by Prince Khalid Al-Faisal of Saudi Arabia, director of the King Faisal Foundation, which bestows the honors. The awards were distributed in a March ceremony held in Riyadh under the auspices of the king of Saudi Arabia. Each prizewinner received a leather-bound certificate in Arabic calligraphy describing the work for which he was awarded the prize; a 24-carat, 200-gram gold medallion; and 750 000 Saudi riyals (\$200 000).

Wolf, Japan Prizes to be presented

Achievements in physics, chemistry, and mathematics, among other fields, will be honored by the Wolf Foundation, which has awarded a half-dozen prizes in the sciences annually since 1978. Six of this year's award recipients do physics-related work.

Two of those recipients have also been recognized by the Science and Technology Foundation of Japan, which administers the Japan Prize.

The Wolf physics prize will be shared by **Albert Fert**, professor of physics at Université de Paris-Sud and scientific director at the CNRS/Thales Joint Physics Unit in Orsay, France, and **Peter Grünberg**, a research scientist at the Institute for Solid State Research in the Jülich Research Center in Germany. They will receive the award, according to the citation, "for their independent discovery of the giant magnetoresis-

tance phenomenon (GMR), thereby launching a new field of research and applications known as spintronics, which utilizes the spin of the electron to store and transport information." GMR revolutionized the magnetic recording industry by allowing "an enormous increase in the storage capacity and reading speed of magnetic hard-disk drives," the foundation said.

For their work, Fert and Grünberg were also named co-recipients of the Japan Prize for 2007 in the category of Innovative Devices Inspired by Basic Research. "The new paradigm of spin-electronics pioneered by Prof. A. Fert and Prof. Dr. P. Grünberg triggered a great advance in basic research that linked the electrical transport and the magnetic phenomenon, as well as in innovative applied research such as non-volatile memory making use of the finding," the Japan Prize award committee said. The prize consists of a certificate of merit and a commemorative medal in addition to a cash award of ¥50 million (\$415 000), which the two will share. The award will be presented in a Tokyo ceremony in April 2008.

Jointly receiving the Wolf mathematics prize will be **Harry Furstenberg** and **Stephen J. Smale**. Furstenberg, a mathematics professor at the Hebrew University of Jerusalem, was cited "for his profound contributions to ergodic theory, probability, topological dynamics, analysis on symmetric spaces, and homogenous flows." The foundation called him "one of the great masters of probability theory, ergodic theory, and topological dynamics."

Smale, professor emeritus in the mathematics department at the University of California, Berkeley, will be honored "for his groundbreaking contributions that have played a fundamental role in shaping differential topology, dynamical systems, mathematical economics, and other subjects in mathematics," according to the citation. The foundation cited Smale's proof of the Poincaré conjecture for dimensions bigger or equal to five "as one of the great mathematical achievements of the 20th century."

The Wolf chemistry prize will be jointly awarded to **George Feher**, a professor in the physics department at UC San Diego, and **Ada Yonath**, the Martin S. and Helen Kimmel Professor of Structural Biology and director of the Helen and Milton A. Kimmelman Center for Biomolecular Structure and Assembly, both at the Weizmann Institute of Science in Rehovot, Israel. They received the honor "for [their] ingenious struc-