FOR IMMEDIATE RELEASE

Scientist at The Scripps Research Institute Named Recipient of The King Faisal International Prize for Science

La Jolla, CA. March 8, 1995 — K. Barry Sharpless, W. M. Keck Professor of Chemistry at The Scripps Research Institute, is to receive one of the scientific world's biggest awards, The King Faisal International Prize for Science.

The King Faisal Foundation, named for Saudi Arabia's third monarch, described Sharpless as "one of the most creative and intuitive organic chemists of his generation...whose contribution led to the development of catalytic asymmetric synthesis." He will receive a gold medal and $200,000 from King Fahd during ceremonies in Riyadh later this month.

Since its creation in 1983, this is only the third time the King Faisal Prize for Science has been awarded for chemistry. In 1990 the prize was shared by R. U. Lemieux, F. A. Cotton and M. A. El-Sayed. Michael Berridge won it in 1986.

Sharpless is best known for using metal catalysts to create useful new methods for synthesizing organic chemicals. The Sharpless Asymmetric Epoxidation, discovered in 1980 and the Sharpless Asymmetric Dihydroxylation, developed several years later, quickly became essential tools for chemists. He is credited both with unleashing the broad powers of catalytic asymmetric synthesis and with continuing to lead the explosively growing field.

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Without asymmetric methods, organic chemical reactions produce fifty-fifty mixtures of "left-handed" and "right-handed" enantiomers (three-dimensional isomers). These paired molecules are identical in every way except for being mirror images of each other, like left and right hands. The broad scope of the Sharpless reactions transformed organic chemistry by making it possible to use general methods to synthesize highly pure batches of such "handed" molecules.

This has special significance for the pharmaceutical industry, since a quarter of the drugs on the market today are actually fifty-fifty mixtures of two enantiomers. During chemical reactions with other "handed" molecules, these enantiomers react differently. Because all living systems are "one-handed," a drug's beneficial effect usually comes from just one enantiomer. Thus a patient frequently takes twice as much medication as is necessary, and the unwanted enantiomer may actually cause harmful side effects. Sharpless's work paves the way for the cost-effective production of more single-enantiomer drugs.

According to K. C. Nicolaou, Chemistry Department Chairman at TSRI and Darlene Shiley Professor of Chemistry, "This award represents deserving recognition of Dr. Sharpless's pioneering work. He is a genius at discovering new reagents and reaction processes useful to the pharmaceutical and chemical industries, as well as to other researchers in chemistry and biology."

Sharpless received his B.A. from Dartmouth College in 1963 and a Stanford University Ph.D. in 1968. In 1970, following postdoctoral studies at Stanford and Harvard Universities, he joined the Massachusetts Institute of Technology (MIT) faculty. After three years at Stanford

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in the late 1970s, he returned to MIT as Arthur C. Cope Professor of Chemistry. He joined the TSRI faculty in 1991.

Sharpless was elected to the National Academy of Sciences in 1985. Other significant honors include the Tetrahedron Prize, the American Chemical Society's Award for Creative Work in Organic Synthesis and their Arthur C. Cope Award; the Prelog Medal (Switzerland); the Janssen Prize (Belgium), and the Scheele Medal (Sweden).

Established in 1976, the King Faisal Foundation seeks to preserve Islamic values, make education and health facilities available to those who might not otherwise have access, promote cultural programs and science, and raise the standards of living for the less fortunate, particularly in developing countries. To acknowledge significant individual achievement in these areas, the Foundation annually awards five international prizes for: service to Islam, Islamic studies, Arabic Literature, science and medicine.