

# SOUTHWESTERN NEWS

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## WELCH FOUNDATION AWARDS \$3.24 MILLION IN GRANTS TO 21 UT SOUTHWESTERN SCIENTISTS

DALLAS – June 19, 2002 – Twenty-one scientists from UT Southwestern Medical Center at Dallas have received \$3.24 million in grants from the Welch Foundation, more than at any other Texas medical institution.

The Welch Foundation, one of the nation's oldest and largest sources of private funding for basic chemical research, gave \$19 million in three-year grants to 126 scientists. Each research grant is renewable and provides a minimum of \$150,000 over a three-year time period.

Two UT Southwestern scientists – Dr. Johann Deisenhofer, 1988 Nobel laureate in chemistry, and Dr. Elliot Ross – received \$180,000 grants from the foundation.

Deisenhofer, professor of biochemistry and an investigator in the Howard Hughes Medical Institute at UT Southwestern, is studying the structure of DNA photolyases and cryptochromes using X-ray crystallography.

“We want to grow crystals of photolyases, enzymes that use light energy to repair certain types of damage in DNA. We want to fully understand the mechanisms of their interactions with damaged DNA,” said Deisenhofer.

“Proteins very similar to these enzymes are also involved in other responses to light. In plants, they control growth phases. In mammals, they are involved in the maintenance and synchronization of circadian rhythms. Structural studies of these proteins are quite difficult problems, and we are very grateful to the Welch Foundation enabling us to pursue our research.”

Ross, professor of pharmacology, received a grant to continue his studies in heterotrimeric G-proteins, which are common signaling molecules serving as a “signal relay” system for multiple cellular responses – including sensory transduction, neural transmission and muscle contraction.

“It is hard to find a disease process that does not involve G-proteins in some way,” Ross said. “We are studying how G-proteins are stimulated, regulated, the binding of GTP and its

(MORE)

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hydrolysis. Most importantly, we want to learn how they interact to control the timing and intensity of the signal output. Each mechanism has several components, and these components influence others. The coordination of these inputs is central to how a cell can respond to several dozen incoming signals and translate them into a coordinated course of action.”

Two UT Southwestern associate professors of pharmacology receiving \$165,000 grants are Dr. David Corey, to study the enhanced recognition of DNA and RNA by chemically modified nucleic acids, and Dr. Margaret Phillips, to study substrate control in eukaryotic ornithine decarboxylase.

Another 17 faculty members received grants of \$150,000. They are: Dr. Paul Blount, assistant professor of physiology; Dr. Scott Brady, associate professor of cell biology; Dr. Yuh Min Chook, assistant professor of pharmacology; Dr. Melanie Cobb, professor of pharmacology; Dr. Jef De Brabander, assistant professor of biochemistry; Dr. Kevin Gardner, assistant professor of biochemistry; Dr. William Garrard, professor of molecular biology; Dr. Richard Gaynor, director of the Harold C. Simmons Comprehensive Cancer Center; Dr. Joel Goodman, professor of pharmacology; Dr. Mark Henkemeyer, assistant professor in the Center for Developmental Biology; Dr. Sandra Hofmann, associate professor of internal medicine; Dr. Michael McPhaul, professor of internal medicine; Dr. Michael Rosen, associate professor of biochemistry; Dr. Paul Sternweis, professor of pharmacology; Dr. Helen Yin, professor of physiology; Dr. Hongtao Yu, assistant professor of pharmacology; and Dr. Yingming Zhao, assistant professor of biochemistry.

Established in 1954 by the estate of Robert A. Welch, an oil and minerals entrepreneur, the Welch Foundation has contributed more than \$465 million to basic research in chemistry in the form of research and departmental grants, lectureships, special projects and awards.

“The Welch Foundation is proud of its mission to support basic research in chemistry, which leads to advancements in such areas as medicine, biochemistry, technology and the environment,” said Richard J.V. Johnson, chairman of the foundation. “Our lives and the world around us are ultimately improved through the exploration of the most fundamental questions of chemistry.”

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