

**1997 SSR RESEARCH AWARD
DOUGLAS M. STOCCO**



Dr. Douglas M. Stocco is the 1997 recipient of the SSR Research Award, which is given annually by the Society for the Study of Reproduction to someone who has demonstrated research excellence during the previous six years. Dr. Stocco received his Ph.D. in biochemistry from the

University of Toronto in 1972 and undertook a two-year postdoctoral fellowship at the University of California, Los Angeles. In 1974 he accepted a position at Texas Tech Health Sciences Center as Assistant Professor of Biochemistry. He moved through the ranks to his present position as Professor of Cell Biology and Biochemistry. In 1997, he became the Grover E. Murray Distinguished Professor at Texas Tech Health Sciences Center. This award recognizes Dr. Stocco's independent discovery, purification, and characterization of the steroidogenic acute regulatory protein (StAR), which represents a novel advance in our understanding of steroidogenesis. For more than three decades, it was known that there is a protein factor that triggered ligand-induced steroidogenesis. Its role was in transfer of the steroid substrate, cholesterol, from the outer to the inner mitochondrial membrane, for its consequent conversion to pregnenolone by the side-chain cleavage complex. But the nature and mode of action of the putative protein were a mystery. By careful and methodical biochemical investigation, Dr. Stocco, in collaboration with Dr. Barbara Clark, first isolated a 30-kDa mitochondrial protein that appeared associated with ligand-induced stimulation of steroidogenesis. They then cloned and sequenced the complementary cDNA. It proved to be a novel protein, and its essential role in steroidogenic function was confirmed by "nature's knockout," a human disorder known as congenital lipoid adrenal hyperplasia, an autosomal recessive disorder resulting from several mutations of the StAR gene that render the protein inactive. Following isolation of the StAR protein, Dr. Stocco showed that its transfection into COS cells

rendered them steroidogenic, that StAR was important in embryonic development, and, in collaboration with others, that StAR was present in the placenta and that it played a role in steroidogenesis in the testis and the adrenal. He has further investigated the upstream elements that regulate the expression of the StAR gene. Dr. Stocco has an outstanding record of scientific productivity. In the three years since his landmark 1994 publication of the StAR sequence, he has been senior author on more than 24 articles and reviews, and a coauthor of another 20. These papers are in the best journals including *Biology of Reproduction*, *PNAS*, *Nature*, *Science*, *Journal of Biological Chemistry*, and *Molecular Endocrinology*. Dr. Stocco has received a number of other awards and honors for his scientific work, including the Texas Tech President's Academic Achievement Award and the ARCS Distinguished Scientist Award. He presented the William A. Sadler Lecture in 1997 and is an NIH Merit Grant Awardee. A highly significant aspect of Dr. Stocco's achievements is that they have been accomplished with an admirable level of collegiality and cooperation with other scientists. He has always been open and helpful, and he is always ready to share his expertise and his laboratory materials. He has been particularly generous with his time and reagents to students and young investigators. Dr. Stocco personifies the scientist who considers the science more important than the credit. His attitude is refreshing in these times of fierce competition for ever-decreasing funding. Dr. Douglas M. Stocco is a worthy recipient of the SSR Research Award, not only for the fine science that he has accomplished over the last six years, but also for his exemplary and unselfish collegiality.