

**The UCI Interdisciplinary Center for  
the Scientific Study of Ethics and Morality**

*presents the 2005*

**Paul H. Silverman Awards**

*to*

**F. Sherwood Rowland  
and Kimberley Anderson**

**F. Sherwood Rowland.** It is most fitting that Sherry is the first senior recipient of the Paul H. Silverman Award for, like Paul Silverman, Sherry Rowland is a dedicated scientist who has directed his work to the betterment of mankind and is unflinching in his judgment of its significance in spite of exceptional outside pressures. Rowland has received numerous scientific awards for his research, including the Nobel Prize in Chemistry in 1995 for work in atmospheric chemistry, particularly concerning the formation and decomposition of ozone.

Sherry Rowland and Mario Molina's work on the depletion of the ozone layer caused by chlorofluorocarbons is now recognized as being among the great achievements in science. These seminal studies have had a significant global impact, indeed, even on the future of life itself. Were it not for Rowland's moral judgments concerning the significance of this work, its impact on the environment and on society would have suffered. He clearly recognized that the results of the Rowland/Molina studies would undermine a worldwide multi-billion dollar industry and that incredible industrial and political pressures were to be faced if policy changes were forthcoming. Rather than retrench to his laboratory, as many scientists might, Rowland assumed the leadership role in pushing for changes. Because of his persistence, courage, and intellect he was able to educate policy makers and guide them to initiate positive changes.

We admire Rowland for many reasons, not the least of which is his courage in showing the world that man's behavior can have most serious global consequences. Perhaps the most important message to stem from his work is that the progress of such damages can be reversed with judicious ethical choices.

**Kimberly Anderson.** Dr. Anderson has a unique background fueling her young career in spinal cord injury (SCI) research. When she was seventeen years old she was involved in a motor vehicle accident that left her with a spinal cord injury. She is a quadriplegic and has experienced all of the aspects associated with SCI for the past sixteen years. After graduating from high school on time, despite being in the hospital for half of her senior year, Anderson obtained a Bachelor of Science degree in Marine Biology from Texas A&M University, which provided her with a solid background in comparative biology. Becoming more interested in pursuing a career in research, she went on to earn a Ph.D. in Biomedical Sciences from the University of New Mexico in 2000. During her graduate training she developed expertise in the biochemical and molecular regulation of certain growth-cone molecules essential to the proper development of the nervous system and which are also re-expressed following injury to the peripheral and central nervous systems. Her spinal cord injury led her to pursue a career in SCI research and she went on to become a post-doctoral fellow at the Reeve-Irvine Research Center at UCI, which is named after actor Christopher Reeve and specializes in SCI research. While there, she received a National Research Service Award to study gene regulation in cervical SCI animal models. She also developed quantitative behavioral assessments of forelimb dysfunction resulting from cervical SCI in mice and rats.

As she became more involved in the SCI basic science field, Anderson noticed a discrepancy between the focus of outcomes in SCI basic science and the needs of the population living with SCI. At the time, the majority of animal models focused on recovering quadrupedal locomotion following a thoracic SCI. She took it upon herself to conduct a survey of the SCI population to identify what they felt were the most important functions to recover that would have the greatest impact on improving quality of life. Their priorities were: 1) regaining arm and hand function for quadriplegics, 2) regaining sexual function for paraplegics, and 3) recovering bladder and bowel function for both quadriplegics and paraplegics. During the past year, the basic science community has embraced these results and many more studies are now addressing multiple aspects of SCI instead of just locomotion.

As a result of those experiences, Dr. Anderson is actively pursuing a career in translational research and bridging the gap between basic science and clinical science, in relation to spinal cord injury. As a new Assistant Adjunct Professor in the UCI Department of Neurological Surgery and an associate with the Reeve-Irvine Research Center, she is in a position to forge that career. She recently was accepted as a member of the World Spine Society, which is an international, multidisciplinary organization focused on improving spine health worldwide.

Her first-hand experience of living with SCI provides her with intimate knowledge that, though unfortunate, can be obtained only from direct experience. Anderson has chosen to draw from her personal situation and is dedicated to conducting research that will lead to the reduction of disability and improvement in the quality of life for the rest of the population living with spinal cord injury. It is absolutely essential that research regarding health issues address the clinically relevant problems the people living with that disease face on a daily basis, especially when that research is funded by federal or state tax revenue. The best way to find out information about such problems is to go directly to the people living in that situation. This can be done in a rigorous manner so that meaningful results can be obtained. In doing this, Anderson's professional actions reflect a critical theme in the literature on ethics, i.e., the idea that empathic involvement with another makes us more sensitive to other's needs. Her work embodies the commitment to rigorous scientific research with an ethical component that is the essence of the Silverman Award.