



American Society for Investigative Pathology  
*Investigating the Mechanisms of Disease*  
[www.asip.org](http://www.asip.org)

## Jonathan H. Lin, MD, PhD, Receives the ASIP 2009 Excellence in Science Award



The ASIP Excellence in Science Award recognizes outstanding achievements at the earliest stages of a career in biomedical research. Accomplishments include, but are not limited to, publications and presentations as well as volunteered service to the ASIP or other professional societies, institutional committees, and the pathology community. This award is funded through the generous support of the A.D. Sobel-ASIP Education Fund. Dr. Jonathan H. Lin is the first recipient of the Excellence in Science Award.

Building on his studies of unfolded protein response (UPR) with Dr. Peter Walter at the Howard Hughes Institute, Lin saw that the molecular behavior of the UPR that he observed in his cell culture studies could be extended to genuine protein misfolding disease *in vivo*. With this in mind, Lin began working with Matthew LaVail in the departments of Ophthalmology and Anatomy at UCSF to examine the role of the UPR in photoreceptor cell death due to misfolded rhodopsin expression, using animal models of retinitis pigmentosa (RP) developed in the LaVail lab. He demonstrated that these same signaling processes that controlled cell survival after protein misfolding in his tissue culture studies were also activated in multiple animal models of retinal degeneration due to misfolded rhodopsin expression in photoreceptors. This is a very important finding because, despite the extensive body of data that shows some RP-associated rhodopsins are misfolded it has been a mystery

how these mutant rhodopsins lead to retinal photoreceptor cell death and ultimately blindness.

Lin's findings provide an exciting molecular link between rhodopsin misfolding and photoreceptor cell death. He has begun a series of genetic experiments in which he is transferring the chemical and genetic tools he devised to control the UPR in cell culture into mice, with the intention of exploring how artificial manipulation of the UPR in animals affects retinal degeneration. His research was published in a full-length article in the journal *Science*. Lin is also a recipient of a prestigious K08 grant from the National Eye Institute.

Lin has started his own research group at UCSD where he will continue his studies into the role of the UPR signaling pathways in the pathogenesis of human diseases as well as develop a new molecular eye pathology service as part of the clinical enterprise. Dr. Marilyn G. Farquhar, Ph.D., Professor and Chair of the Department of Cellular and Molecular Medicine at UCSD, has this to say of Dr. Lin: "As a colleague, Jonathan has been a real treat with whom to work. He brings tremendous enthusiasm, insights and new ideas that he wants to share with others. As evident by the multiple collaborators on his *Science* paper, Jonathan easily interacts with other researchers at all levels, whether by simply sharing data and reagents, or by coordinating joint experiments. Given the association of protein misfolding and UPR signaling in many diseases, Jonathan's professional endeavors will be a tremendous asset for the larger biomedical community."

In addition to his outstanding research accomplishments, Dr. Lin has contributed to the pathology discipline by his service as a reviewer for many journals, as a grant reviewer, as a participant in his residency program's interview process, and as the medical student editor of the *Journal of the American Medical Association*.

Dr. Lin presented his award lecture, "Endoplasmic Reticulum Stress in Disease Pathogenesis," on Saturday afternoon, April 18, 2009 and was awarded the Excellence in Science Award on Monday, April 20 at the ASIP Annual Meeting at Experimental Biology.