JoVE Bioengineering

Dr. Sang-Hyun Oh - University of Minnesota

Sang-Hyun Oh obtained his B.S. in Physics from KAIST, Korea, and Ph.D. in Applied Physics from Stanford University, in 1996 and 2001, respectively. After postdoctoral research at Bell Laboratories in Murray Hill and the University of California at Santa Barbara, he joined the Department of Electrical and Computer Engineering at the University of Minnesota, Twin Cities in 2006. He is currently an Associate Professor of ECE, Graduate Faculty of Biomedical Engineering, and runs a lab focused on nano-optics, biosensing, membrane biophysics, and nanofabrication. He is a recipient of the young faculty awards from DARPA, Office of Naval Research, National Science Foundation, American Chemical Society Petroleum Research Fund, and 3M.

JoVE Clinical and Translational Medicine

Dr. Thierry Léveillard- University of Pierre and Marie Curie

Dr. Thierry Léveillard is a Research Director for the Vision Institute (Institut de la Vision) at the University Pierre and Marie Curie in Paris, France. Dr. Léveillard completed his PhD in 1989 at the Université de Rouen followed by post-doctoral positions at UCSD, the Salk Institute, IGBMC and the Laboratoire de Physiopathologie Rétinienne. The main objective of Dr. Léveillard's research is to identify molecules that protect cones from degenerating as a therapeutic strategy aimed at preventing the cone loss and consequently the central vision loss in patients suffering from retinitis pigmentosa (RP). His group originally started by searching for the physiological signal from rods to cones that may explain the secondary degeneration of cones in RP, since in a significant number of cases the causal mutation lies in a gene that is not expressed by cones. The Léveillard group used a high content screening of a retinal library on a model of cone-enriched cultures to identify a gene encoding RdCVF, then later its paralogue RdCVF2 (Léveillard *et al.*, 2004; Chalmel *et al.*, 2007; Jaillard *et al.*, 2010). Altogether, the Léveillard group has shown that the RdCVF signaling in the retina is a model of a neuronal defense response against progressive oxidative condition resulting from exposure to environmental factors. This signaling may be relevant to other neurodegenerative diseases. Currently, they are studying the likely interaction of the trophic activity of the truncated thioredoxin RdCVF with the thioloxido-reductase activity of the enzyme RdCVFL and its role in the physiology of the retina (Léveillard and Sahel, 2010).

JoVE Environment

Dr. Igor Sharakhov- Virginia Tech

Igor V. Sharakhov serves as an Associate Professor in the department of Entomology at Virginia Polytechnic and State University (Virginia Tech) in USA. He was appointed to the Virginia Tech faculty as an Assistant Professor in 2004. He leads an internationally recognized research program focused on the comparative and evolutionary genomics of arthropods of medical importance. He received his Ph.D. degree in genetics in 1996 from the Institute of Cytology and Genetics in Novosibirsk, Russia. He received a University Diploma magna cum laude, majoring in biology from Tomsk State University, Russia, in 1989. He joined a laboratory at the Department of Biological Sciences at State University of New York at Buffalo, USA in

1999 as a Research Instructor, where he undertook research on molecular cytogenetics of African malaria mosquitoes. In 2001, he was appointed as a Research Associate at the Department of Biological Sciences of the University of Notre Dame, USA where he completed research on the comparative genome mapping of African malaria mosquitoes. Dr. Sharakhov's research is funded by grants from National Institutes of Health. He serves on editorial boards of the Journal of Insect Science, Journal of Visualized Experiments (JoVE), PLoS ONE, and the Scientific World Journal. In 2012, Dr. Sharakhov received *Excellence Award in Basic Research* from College of Agriculture and Life Sciences, Virginia Tech.

JoVE Neuroscience

Dr. Margaret Saha- The College of William & Mary

Dr. Margaret Somosi Saha received her Ph.D. in Developmental Biology from the University of Virginia. Following a postdoctoral position at UVa, she accepted a position at the College of William and Mary in 1993 where she is now a Chancellor Professor of Biology. Her research, funded by the National Science Foundation and the National Institutes of Health, focuses on the early stages of neural development in vertebrate model systems, in particular Xenopus laevis and Zebra Finch. More specifically, the research is focused on the molecular mechanisms by which the early nervous system is able to respond to genetic, physical, and environmental perturbations and eventually recover. Ongoing projects are investigating the limits of embryonic neural plasticity following genetic perturbation of the Notch signaling pathway and physical perturbation of the the anterior-posterior axis. Dr. Saha also teaches Developmental Biology, Genomics and Proteomics, Developmental Neurobiology, and Introductory Biology at the College of William and Mary.