RESTORE– Biology of Glia

Research Grants:
University of California at San Francisco researchers are refining ways to identify molecules that may be capable of stimulating myelin repair in people with MS.

Title: "A Functional High-thoughput Screen for Remyelination: Muscarinic Receptors Regulate Oligodendrocyte Differentiation and Myelination"
Term: 10/1/2014 - 9/30/2017

Lead Investigator: Jonah Chan, PhD
University of California, San Francisco, San Francisco, CA

Dr. Jonah Chan is an accomplished neuroscientist who is Associate Professor and holder of the Debbie and Andy Rachleff Endowed Chair in Neurology at UCSF. He received his training in Neuroscience at the University of Illinois and held a postdoctoral fellowship in Neurobiology at Stanford University. He earned a PhD in neuroscience at the University of Illinois at Urbana-Champaign. Dr. Chan was awarded a National MS Society career transition fellowship that successfully took him to his first faculty position at the Keck School of Medicine, University of Southern California, where he also won a National MS Society Harry Weaver Neuroscience Scholar Award. He moved to UCSF in 2010. In 2013 Dr. Chan became the first recipient of the Barancik Prize for Innovation in MS Research. Dr. Chan serves as a scientific peer reviewer for the Society, and on the Board of Directors for its Northern California chapter.

Background:
In MS, myelin, the fatty substance that surrounds and protects nerve fibers, is attacked and destroyed. Myelin is required for nerve fibers to function properly and it may protect them from damage caused by MS attacks. Thus, strategies to repair myelin, a natural healing process that is generally inefficient, are likely to improve function in people with MS. However, no therapies are available to promote myelin repair in MS.

The Study:
Jonah Chan, PhD, of the University of California at San Francisco, received a research grant from the National MS Society to refine and enhance technology that provides a rapid method to screen for substances that promote myelin repair. With the first generation of this technology, the team identified a group of candidate molecules capable of promoting myelin growth. The team is further refining the screening method and then investigating how the identified candidates work in mice with myelin damage, to identify ideal characteristics and versions of these candidates for future testing in people with MS.

What's Next?:
Identified compounds that promote myelin repair are candidates for new therapies that could be clinically tested for their ability to repair myelin in people with MS. Currently Dr. Ari Green, Clinical Director of the MS Research Group at UCSF, has initiated a clinical trial for remyelination in relapsing-remitting MS with a compound identified by the screen (reBUILD, http://multiplesclerosis.ucsf.edu/research/rebuild).