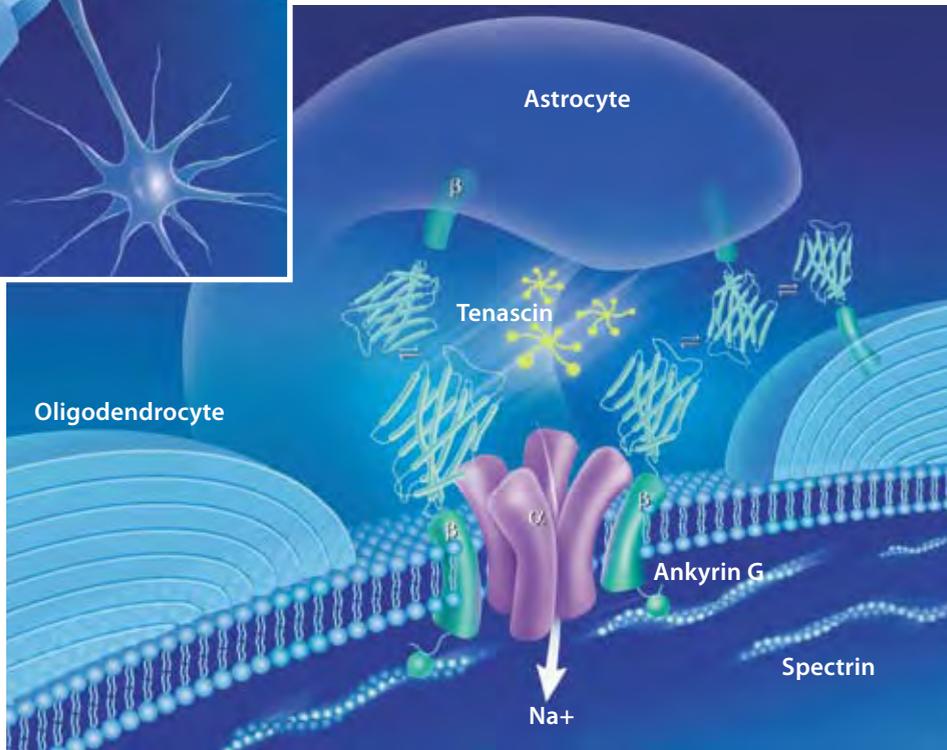




Limiting the tiny channels (shown here) by which sodium (Na<sup>+</sup>) passes through nerve cells may be key to protecting these cells in MS (see text).



LORI L. ISOM, PH.D., AND MICHIGAN PRODUCTIONS, UNIVERSITY OF MICHIGAN

MS research for the first time. Ultimately, they are using this knowledge to develop ways to enhance mitochondrial function and hopefully protect nerve fibers from injury. They'll also be able to rapidly test such therapies in rodent models and then in early clinical trials in people with MS. This is a talent-packed collaboration that we are pleased to count among our Collaborative MS Research Centers.

Our peer reviewers rank research proposals according to their scientific excellence and

their relevance to MS. This year's most highly-ranked project was submitted by Daniel Goldberg-Zimring, PhD (Harvard Medical School, Boston), an investigator who is new to the National MS Society. He's looking at various imaging technologies to determine how we can observe—in people at high risk for MS—those changes that predict which people will indeed develop MS. This winning study is crucial as more treatments are approved for preventing the progression to clinically definite MS. Because of its ranking, this grant was dubbed this year's Stephen C. Reingold Award, in honor of my predecessor here at the MS Society.

Repairing nervous system damage is the goal of Gianvito Martino, MD (San Raffaele

## New explorations launched

by John R. Richert, MD

The selection of new research grants for funding is an exciting event for us at the National MS Society. The grant applications are reviewed by our volunteer peer reviewers and recommended for funding. The men and women who are starting their new projects this spring and summer—61 in all—epitomize the possibilities of MS research today.

Take the new Collaborative MS Research Center being launched by Dennis Bourdette, MD (Oregon Health Sciences University), which pursues a novel direction in MS research—the role of mito-

chondria in nerve fiber damage. Preliminary research has revealed that mitochondria—the energy factories of cells—play a key role in calcium balance within nerve fibers. It is known that abnormal calcium levels are toxic to nerves. Thus, this research may be key to preventing the progressive disability that occurs due to the gradual loss of nerve fibers in MS.

This research team includes scientists with expertise in clinical trials, magnetic resonance imaging, developing and investigating rodent models of MS, and in mitochondrial function; some are lending their expertise to

Scientific Institute, Milan, Italy). Dr. Martino's team broke new ground a few years ago when they showed that stem cells from adult brain tissue, when injected into the blood stream of mice with the MS-like disease EAE (experimental allergic encephalomyelitis), promoted repair of myelin, decreased damage to nerve fibers, and reversed clinical disease. In a new project Dr. Martino is tackling a major question in MS research: why does the brain's natural ability to repair itself fall short in people with MS? His team is focusing on what might be happening to the reservoirs of these neural stem cells in rodent models of MS.

Another new grant is focusing on **protecting** the nervous system from MS damage. A team led by Lori L. Isom, PhD (University of Michigan, Ann Arbor) is investigating tiny pores along the surface of nerve fibers, called sodium channels, which are responsible for nerve signal firing. (See illustration, page 71.) Her team is exploring a subunit that plays an important role in determining where, and how many, channels are present along the nerve fibers. When myelin is damaged in MS, more sodium channels are produced in the body's attempt to improve nerve conduction. This may make nerve fibers more vulnerable to injury. While drugs that block the sodium channel may be effective, they cause system-wide effects. Dr. Isom is investi-

gating how to regulate the subunit to protect nerve fibers from injury. This novel study should inform the development of new drugs that block only a portion of the sodium channel to protect nerve fibers from damage.

### Nurturing new researchers

This is just a sampling of the approximately 440 new and ongoing research projects that the Society is funding.

One of our top priorities is to ensure that there are young, bright scientists and physicians who are well trained and devoted to finding a cure for MS.

That's why our research fellowships are so important. It's always a pleasure to welcome a new group of fellows—these young men and women fuel the possibilities of MS research.

Take Christopher A. Severson, MD (Brigham and Women's Hospital, Boston), a new National MS Society-American Academy of Neurology Clinician Scientist Award winner. Dr. Severson is further investigating the exciting findings of the International Multiple Sclerosis Genetics Consortium, which identified two new genetic variations associated with MS. Dr. Severson is investigating the variation in the gene for "interleukin 2-receptor

alpha," to determine what may make people who carry it more susceptible to developing MS.

Another important training program is our Mentor-Based Rehabilitation Fellowship Program, designed to increase the quality and quantity of rehab research. Marcia Finlayson, PhD (University of Illinois at Chicago), who has made several key findings in the field, is one of two new recipients of this award. She is establishing a program to train researchers to conduct "self-management" research.

Self-management programs can teach people with MS to manage fatigue or provide strategies for dealing with cognitive changes. This is a sure way to help many people address the challenges of living with MS.

Speaking of fellows, we are quite proud to welcome seven new Sylvia Lawry Physician Fellows—the most ever approved in one year. This program trains young clinicians in the intricate and complex ways of planning and conducting MS clinical trials.

It's important for us to maintain this influx of new talent and make sure that they can eventually establish their own research programs to defeat this disease.

Dr. John Richert is executive vice president for our Research and Clinical Programs.



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