Progressive MS, diet and lifestyle research, and myelin repair strategies took center stage during the American Academy of Neurology’s (AAN) annual meeting held in Washington, DC in late April. Nearly 13,000 neurologists and other researchers, including many whose careers have been launched and sustained by National Multiple Sclerosis Society support, convened to share progress in finding solutions to MS. Below are highlights from the numerous presentations aimed at the Society’s goals of stopping MS, restoring lost function and ending MS forever:

**CAN A TREATMENT FOR EPILEPSY WORK IN MS?**
A trial funded in part by the Society evaluated whether phenytoin, an oral therapy for epilepsy, could protect against nerve damage in the eye. The trial involved 86 people with optic neuritis. Those who received phenytoin had 30% less damage to the nerve fiber layer compared to those who received placebo. The results raise the possibility of “repurposing” a therapy already on the market to protect the nervous system from damage.

**CAN ANTI-LINGO REPAIR MYELIN?**
Promising results were reported from a phase 2 clinical trial of the myelin repair strategy called anti-LINGO. The study involved IV infusions or placebo to 82 people who had a first episode of optic neuritis. Those who had been given anti-LINGO had faster nerve signals along the optic nerve than before being given the therapy. The speeding up of signals is thought to be an indication of myelin repair. Another phase 2 trial is ongoing in people with relapsing MS.

**GUT REACTION**
Support from the Society helped launch a consortium of researchers focused on the relationship between microorganisms in the body, referred to as the microbiome, and MS. Early findings from an analysis of these microorganisms, which often live in places like the skin and intestines, showed differences in gut bacteria between those with MS and without MS. The team has a new Collaborative MS Research Center Award from the Society to expand this promising research and inform potential probiotic strategies to treat MS.

With close to $900 million in research investments since our founding, the National MS Society has transformed the pace of MS research progress and has set the stage for breakthrough solutions that will change the world for people with MS. To learn more about the exciting MS research progress reported at AAN, visit the Society’s blog at MSconnection.org.
STIMULATING PROGRESS AROUND THE GLOBE

The pace of MS research is accelerating. This vital progress is given a boost at critical scientific meetings where researchers from around the world convene to share new insights, develop new approaches and stimulate collaboration around solving MS.

Advances being made in priority areas like nervous system repair and progressive MS are exciting and encouraging. As you’ll read in the pages of this NOW Quarterly, promising results from several clinical trials testing therapies with the potential to restore function lost to MS and protect against future progression were reported at the recent American Academy of Neurology meeting. In addition, important leads in understanding MS progression and identifying novel treatment approaches were discussed at the most recent International Progressive MS Alliance meeting and next steps are underway.

The Society works relentlessly to galvanize the world around finding answers and speeding life-changing solutions to people with MS. With an anticipated $53.3 million in research investments this year — including support to three new Collaborative MS Research Centers – and our work to steer the attention of the MS research community towards the issues that matter most for people with MS, we are transforming the pace at which life-changing research discoveries are made.

As we enter into the homestretch of our groundbreaking NOW MS Research Campaign, please continue your critical support so that we may push the boundaries of discovery even further and help people live their best lives now. Together, we can prevent MS from impacting future generations.

Yours truly,

Cyndi Zagieboylo
President & CEO,
National MS Society

REPURPOSED THERAPIES SHOW PROMISE FOR MS

By cutting years of development time, repurposed therapies are a promising approach to speeding faster treatments for people with MS.

• Researchers at the University of Chicago report that the blood pressure medication guanabenz increases the survival of myelin-making cells and reduces symptoms in MS-like disease in mice. Sharon Way, PhD, was funded in this work by a postdoctoral fellowship from the National MS Society supported in part by gifts from the Dave Tomlinson Research Fund. The medication is now being tested for its potential to treat people with MS.

• Researchers at the University of Buffalo funded by the National MS Society show that a medication approved by the FDA to treat overactive bladder stimulates myelin repair in mice. Administering the medication blocked a molecule that prevents myelin-making cells from developing. Blocking this molecule led to improvements in myelin formation and nerve impulse conduction.

WE’RE IN THE HOMESTRETCH!

The NOW campaign has launched more promising MS research and has driven more life-changing progress than any other time in history. Due to the commitment and generosity of donors like you, we are so close to reaching our groundbreaking $250 million goal! Your continued support is vital to reaching this significant milestone on our relentless journey to stop MS, restore lost function and end MS forever.
Eighty scientists and clinicians from around the world were convened in Boston in early March by the International Progressive MS Alliance to identify the best strategies to develop new treatments aimed at stopping progression and restoring function for the estimated 1 million people who live with a progressive form of MS.

Over the course of two days, experts from diverse fields shared their research on different aspects of progressive MS including forces driving progression, approaches to repair and leveraging technology, all with the goal of stimulating progress. Highlights included:

- **Microglia: bad, good, or both?** The brain has its own resident immune cells, called microglia, that can become activated to contribute to the inflammation and nerve damage that occur in MS. German experts discussed the possible role of microglia in MS progression, but also their beneficial activities such as removing debris and stimulating myelin repair. Understanding these roles could lead to ways to ramp up their good activities and inhibit the bad ones.

- **How might fatty substances be involved?** Lipids (fats) have been hard to study, but US experts described new technologies to examine their role in MS. Myelin is about 80% lipids, and sometimes these and other lipids may be converted to toxic substances called ceramides. Some ceramides have been shown to be at abnormally high levels in secondary-progressive MS, and so may represent a new target for therapy.

- **Can skin cells be useful in repair?** Converting human skin cells into stem cells that are transplanted into mice creates conditions that turn off inflammation, promote myelin-making cell survival and stimulate myelin repair, reported Italian experts. In addition, the team has grown these cells in the lab to create “MS in a dish” as a potential means of screening therapies that may protect against damage or stimulate repair.

- **Which disease mechanisms are most relevant?** Among the different mechanisms that sustain disease progression, US experts described a path forward for identifying those with the highest impact on the disease process. By using sophisticated software tools to analyze biological data and combining them with confirmatory experiments in the lab, it is possible to examine networks of biological interactions in complex diseases and identify bottlenecks that are key to their development. This approach may reduce the number of potential therapeutic targets for addressing progression, thereby increasing the chances of success.

Outcomes of the meeting will inform ongoing research priorities and will be summarized in a white paper to share ideas with the larger scientific community. By bringing the world’s scientific knowledge and determination to the task of better understanding progression and therapeutic targets, the Progressive MS Alliance will accelerate the development of treatments that change the world for people with progressive MS. To stay updated on the work of the Alliance, visit progressivemsalliance.org.
For the Slifka family, finding solutions for people living with chronic illness has been a longstanding and shared commitment. Richard Slifka and his late brother Fred had their first experience with MS as children when their mother, Sonya, was first diagnosed. The impact of her illness on the family generated a great sense of compassion and responsibility for others in her sons.

Richard Slifka has served as a passionate and generous volunteer leader for the National Multiple Sclerosis Society since 1981, and Richard and Fred have impacted lives worldwide through their support of groundbreaking research and critical initiatives. One example is their critical role in the launch of the Sonya Slifka Longitudinal Study, named after their mother, which integrates the clinical information, health-care practices and socio-economic data of 2,000 people with MS to track their disease course over time and address a variety of research questions.

As philanthropic-minded businessmen, Richard and Fred found great value for their company, Global Partners, LP, to also support the movement to create a world free of MS. The company has sponsored numerous Society fundraising events and has leveraged its business relationships to bring significant support to the table.

“Helping the Society help people with MS was natural for me and for Fred, because we saw firsthand the impact MS had on our mother,” said Richard.

The family’s next generation of leaders, including Richard’s son, Andrew, and Fred’s son, Eric, have now moved into positions of responsibility within Global Partners. Andrew is the Executive Vice President of Global Partners, and President, Gasoline Distribution and Station Operations, and Eric is the President and Chief Executive Officer of Global Partners. They are following the example their parents set by driving philanthropic support for multiple sclerosis as well as cystic fibrosis.

We are nearing the end of our groundbreaking $250 million NOW MS Research Campaign! Your continued support will be essential to reaching our goal and changing the world for people with MS. Give today. www.nationalMSsociety.org.

“Philanthropy is something that we just do,” said Andrew. “Through example, my father and uncle taught Eric and me the value of generosity and the rewards that come with it.”

In Richard’s words, “Seeing my son, Andrew, and my nephew, Eric, take on the cause as their own is a very rewarding feeling, because it means the work will continue and people’s lives will be changed.”