Dear Friends,

As physicians and researchers, we are steadfast in our goal of providing optimal care to patients and also developing new treatments aimed at reversing injury, ending disease, and prolonging life. To that end, Axon Advance Foundation was founded in 2012 as the philanthropic arm of our New Jersey-based nerve institute, the Center for the Treatment of Paralysis and Reconstructive Nerve Surgery (CPRNS).

There have been some recent, stunning medical advances and scientific breakthroughs in combating disease and illness, from brain mapping to genetic treatments for cancer. At Axon Advance Foundation, we are proud to join the medical community in spearheading life-changing discoveries and procedures for those living with various forms of paralysis, nerve disorders, and spinal cord injury.

As a multidisciplinary team of physicians and staff skilled in the management of patients with various forms of nerve disorders, paralysis, and spinal cord injury, we are dedicated to the treatment of these conditions using existing surgical methods. We are also clinical researchers (with more than 10 active clinical trials), hoping to continuously improve upon current methods and expand the realm of conditions for which our skill sets may provide a benefit.

We have many ideas and innovations that have the potential to greatly enhance existing therapies or provide new hope to those with conditions we currently do not treat. For example, we believe there may be opportunities to help stroke patients recover function of a paralyzed arm, or to maintain independent breathing activity in individuals suffering with ALS (Amyotrophic Lateral Sclerosis or Lou Gehrig’s disease).

Thank you for your interest in our foundation and for joining our efforts to better the lives of those living with nerve disorders, paralysis, and spinal cord injury. We ask for your support in helping us achieve these goals, and emphasize that 100% of your contribution goes to patient care, community outreach, and clinical research.

Sincerely,

Matthew R. Kaufman, M.D., F.A.C.S.

Director and Co-Founder
Axon Advance Foundation
The Axon Advance Foundation has been established to promote research designed to improve treatments for patients with peripheral nerve disorders and spinal cord injury. The Foundation works closely with the W.M. Keck Center for Collaborative Neuroscience at Rutgers University and its focus on spinal cord injury. From bench top to clinical research, the goal of the Foundation is to improve treatment options for patients.

The physicians of The Institute for Advanced Reconstruction and Axon Advance Foundation are recognized leaders in the field of nerve reconstruction and microsurgery and represent a practice that is a primary destination for surgical treatment for problems often overlooked in the medical community. Their more than 50 years of combined experience and successful team approach in medicine results in the highest possible quality of care and the ability to help patients who could not otherwise be helped.

Patient Success Stories

Axon Advance Foundation Sponsors Paralyzed Patient for Successful Surgery

Following an auto accident that left him paralyzed, Andrew Brown had enormous difficulty breathing, often requiring mechanical ventilation, which put him in the hospital every month last year. In fact, in January 2014, his mother Gloria reports, “The doctor didn’t expect him to live.”

With the financial assistance of the Axon Advance Foundation, On December 5, 2014, the now 34-year-old Lacy Springs, Alabama resident underwent surgery with Dr. Matthew Kaufman and Dr. Andrew Elkwood both of The Institute for Advanced Reconstruction in Shrewsbury, NJ, and Dr. Adam Shiroff, Chief of Trauma Surgery, at Jersey Shore University Medical Center in Neptune, NJ. Dr. Kaufman, the only known surgeon to perform surgery on the phrenic nerve, completed a phrenic nerve graft while installing a diaphragm pacemaker with Dr. Shiroff.

Dr. Elkwood, one of few experts worldwide doing certain specialized microsurgery procedures, did tendon transfers to Brown’s right arm, which is permanently bent at a 45-degree angle. Tendon transfer surgery can restore functional movement to a hand and arm that has been paralyzed due to quadriplegia. This surgery is performed with the goal of improving lost function. During this surgery, Dr. Elkwood shifts a functioning tendon from its original attachment to a new one in an attempt to restore the action that has been lost. The fact that Andrew Brown now has some movement in the thumb of that hand is a remarkable result in a paralyzed limb.

There was a time when Andrew Brown couldn’t even sit up in his wheelchair and had to spend most of his time reclining. Today, he breathes freely with the aid of his pacemaker, and he may one day be able to breathe completely on his own. In the meantime, he spends so much time powering his wheelchair that the battery runs out.
These are some of the amazing developments at our Institute over the past year:

Pudendal Nerve Decompression Surgery

Dr. Andrew Elkwood has been having tremendous success in using nerve surgery techniques to treat a chronic condition called pudendal neuralgia that results in debilitating pelvic pain. In Dr. Elkwood’s experience, using minimally invasive surgery to decompress the nerve structures is highly effective, with many patients either symptom-free or with a significant relief of symptoms. There are few physicians in the country, other than Dr. Elkwood, who offer this groundbreaking treatment. Reversal of this condition using nerve surgery can truly be life-changing.

Diaphragm Muscle Replacement Surgery

To expand the possibilities for successful treatment of diaphragm paralysis (breathing muscle paralysis) we have developed a new procedure, called diaphragm muscle replacement surgery. Diaphragm muscle replacement surgery transfers healthy muscle from the patient’s body into the chest cavity, replacing the irreversibly damaged diaphragm, and restoring functional breathing activity. Although this procedure has been described previously in children with congenital diaphragm problems, we are the first in the world to offer it to both children and adults suffering from diaphragm paralysis.

Presentations at National and International Spinal Cord Meetings

This past year has been an overwhelming success for acceptances to various national and international spinal cord injury meetings. We presented an abstract about successful use of simultaneous nerve transfers and diaphragmatic pacemakers for ventilator dependency in cervical tetraplegia at the May 2014 meeting of the American Spinal Injury Association in San Antonio, TX. Specifically, we emphasized how our center is the only location in the world performing this procedure with any regularity, demonstrating how it can be helpful for patients who would otherwise be mechanically ventilated for the rest of their lives. We also presented an educational series at the September 2014 meeting of the American Spinal Cord Injury Professionals in Toronto, Canada. The topic of discussion was on management of the paralyzed upper extremity in patients with spinal cord injury. The presentation highlighted our experience and success performing nerve reconstruction and muscle transfers for these debilitating conditions.

Management of Post-Traumatic Headache

We are one of only a few centers nationally offering nerve decompression surgery for the treatment of debilitating headache conditions (e.g. migraine, occipital neuralgia, cervicogenic headache) especially when there is a preceding history of trauma. Virtually all of our patients had failed medical therapy and were suffering tremendously, many unable to work, exercise, or engage in social activities. Although surgery is only offered to certain headache sufferers, it seems that when the onset of the headache is subsequent to head and neck trauma, there is often a favorable response to nerve decompression surgery. In some of our patients, there was complete resolution of their headaches.