

Laser therapy offers new hope for stroke victims

Going to medical school gave him the chance to fly Navy jets. Flying Navy jets piqued his interest in medical research. Medical research is putting him on the cutting edge of discovering an effective treatment for stroke victims.

Thus has been the career of Jackson Streeter, '83 (biology), '88M.D., who founded PhotoThera, a privately owned biomedical company pioneering the emerging field of infrared energy therapeutics. He started the company in 1997 after becoming intrigued by the possibilities of using infrared energy for therapeutic applications during his service as a Navy flight surgeon and pilot.

Streeter, a third generation Nevadan, is the son of longtime Reno residents, Jack, '43 and Vera Streeter. As the son of Nevada's most highly decorated World War II veteran, Streeter wanted to fly jets since he was a

teen attending Bishop Manogue High School in Reno. He earned his bachelor's degree at Nevada and, still gung-ho to become a pilot, started asking how to go about it.

He heard from a friend's brother who

Anne McMillin, APR, is a public relations specialist for health science communications.

was a Navy pilot that the Navy would pay for medical school in return for several years' commitment to the sea service.

Streeter, a Reno native himself, started looking at medical schools to attend on his Navy scholarship.

"I liked the northern Nevada lifestyle with its skiing and outdoor activities. My friends and family were here and I heard that the University of Nevada School of Medicine was good with smaller classes where you know everyone and have direct and easy access to professors," he says. "Although, I almost went to Tulane."

Lucky for Nevada, he chose to stay close to home. In the summers between his years at the University of Nevada School of Medicine, Streeter served as an active-duty ensign in the Navy and a reservist on the weekends during the academic years.

After graduating in 1988, Streeter joined the Navy full-time to serve his military



Photo Courtesy of PhotoThera

Jackson Streeter, '83 (biology), '88M.D., founded PhotoThera, a biomedical company pioneering the emerging field of infrared energy therapeutics to treat stroke victims. Here he demonstrates the NeuroThera® device that seeks to improve neurological outcome via delivery of laser energy into the brain. The technology also has medical applications in non-invasive and nonsurgical treatments for soft tissue damage and neck strain injuries.

obligation. He completed his medical residency in surgery at Portsmouth Naval Hospital in Virginia, one of the busiest military hospitals in the country, according to Streeter. From there he spent a decade in the service, ending at the famous TOPGUN fighter pilot training school at Fallon, 60 miles east of Reno, where he served as a flight surgeon: a medical doctor who is also a trained pilot.

During his time as a flight surgeon, he treated pilots with injuries stemming from flying combat jets and became intrigued with theories for treating those injuries.

"I saw a lot of cervical neck strain injuries in the senior pilots who were treated at the time with drugs," Streeter says. "From there

I became interested in the technology of treating such injuries."

Streeter wanted to look into non-invasive and nonsurgical treatments for the soft tissue damage and neck strain injuries he was seeing in his military patients, and which also might have a therapeutic effect on stroke victims.

"I looked into some research being done in Europe on mitochondria and wanted to do more research so I got out of the service and founded PhotoThera," he said.

In the past 10 years, PhotoThera, which is based in Carlsbad, Calif., has invested significant scientific and engineering resources into the development of NeuroThera® System, an investigational device that seeks to improve neurological outcome

via delivery of near-infrared energy (a laser) into the brain.

He borrowed from family members, sunk his own savings into his dream and sought venture capital to keep his company afloat in an atmosphere in which most were skeptical about the possibility for a positive outcome due to years of failures in the field.

“It was a major challenge to try to fund a medical device company in the late 1990s when the dot-com boom was all the venture capital community was interested in,” Streeter says. “The company nearly went out of existence but at the last moment in 2001, I was able to get Hamilton Ventures in San Diego to lead a series of funding with California Technology Ventures participation. It was really thanks to partners Paul Bouchard and Kerry Dance, who were willing to take a risk with me as a first time entrepreneur and on a very new technology.”

In the hands of a trained clinician, the hand-held NeuroThera device delivers a specific wavelength of energy at a controlled power density in combination with a thermal management system to 20 predetermined treatment sites on the scalp over a period of about an hour.

The goal is to stimulate mitochondria, small bits of protein that serve as the power supply to the brain’s cells, following a stroke and keep them alive until the blockage in the artery can be removed.

NeuroThera held its first clinical trial overseas last year and based on its success, Streeter convinced the Food and Drug Administration to give him the go-ahead for a clinical trial in the United States. That trial is currently underway and should wrap up this year.

With his company’s funding secured, Streeter now works on the execution of the clinical trial for stroke.

“I spend a huge amount of time going to our clinical trial centers. We have 52 sites in the U.S. including Stanford, UCLA, University of California, San Diego, Duke University, University of North Carolina, Cleveland Clinic, University of Massachusetts, Loyola and six sites in Europe.”

The current clinical trial, is blinded so

results aren’t yet known, but Streeter isn’t discouraged.

“Many of our clinical sites are reporting some really good anecdotal cases to us with better outcomes in several patients than they may have expected. We have many of the world’s experts in stroke involved in the trial,” he said.

While racking up the frequent flyer miles (more than 300,000 last year), Streeter tries to focus some of his time working on the next application for his company’s technology.

He hopes to apply to the Food and Drug Administration next year for approval to put his technology and product on the market in 2010.

“The FDA process is very rigorous and the application review can take a while. We will also be raising additional funding, possibly through an initial public offering, prior to a market launch,” he said.

Streeter’s interest in medical research and particularly, stroke, was spurred on by the death of his mentor and fellow flight surgeon,

George Romano, who died after suffering a stroke in the late 1990s.

“[Stroke] is the third leading cause of death and the number one cost for disability in the U.S.,” he says. “There has been very little success in the treatment of stroke and the only drug available has a very narrow time window [for treatment] of three hours post stroke. Today, over 95 percent of stroke victims go without any treatment other than rehabilitation.”

Streeter believes his company’s success stems from his ability to remain focused on what is most important, the patient.

“I hope to be able to offer something more to stroke patients and their families and hopefully to victims of traumatic brain injury as well, which is another devastating and largely unmet medical problem.”

While PhotoThera’s current trial results are still pending, Streeter is confident those results hold great promise for a new approach to treating stroke victims where previous therapies and pharmaceutical solutions have failed. **N**



Models demonstrate the use of Jackson Streeter’s NeuroThera® device, which delivers energy in combination with a thermal management system to 20 predetermined treatment sites on the scalp over a period of about an hour. The goal is to keep the cell’s mitochondria alive until the blockage in the artery can be removed.

Photo courtesy of PhotoThera