



Faces of Technology

MEDICAL MIRACLES – some would say they happen every day, when a child is born or a life is saved – but it’s rare to be involved in creating one from the ground up. As director of product development for AxoGen™ Nerve Regeneration, Marlo Tan Walpole is doing just that.

Alachua-based AxoGen is a startup founded on technology from the University of Florida, and highly promising not only for its breakthrough technology, but for the fact it is helmed by Jamie Grooms, the visionary co-founder of Regeneration Technologies Inc., one of the state’s biggest biotech success stories.

AxoGen provides surgeons with solutions to repair and restore nerve function to patients who suffer peripheral nerve injury. “In general, peripheral nerves are all of the nerves outside the brain and spinal cord,” says Walpole. Her company estimates that more than 300,000 people suffer major traumatic peripheral nerve injuries each year, but only a small percentage are treated due to difficult or low-efficacy treatment options. That’s about to change.

In July 2007, a plastic surgery team at the Mayo Clinic used one of AxoGen’s products to conduct the first-ever processed human nerve graft implant, helping a 38-year-old patient potentially regain use of his facial muscles following traumatic injury.

“We can address all sorts of injuries,” says Walpole, “including many that may not be life-threatening but impact your everyday life. Imagine if you lose the nerves that allow you to smile, or feel for change in your pocket, or know that you need to let go of something because it’s hot?”

AxoGen’s first product, the AVANCE™ Nerve Graft, is the result of proprietary processing of donated human tissue. “Our breakthrough technology is based on recognizing the normal process of nerve regeneration

Hurt Feelings

Restoring nerve function



>> Marlo Tan Walpole

– Director of Product Development

AxoGen™ Nerve Regeneration

• www.axogenic.com

in the body and being able to mimic parts of it with our manufacturing process,” says Walpole. Important benefits include sparing patients from undergoing additional surgery to harvest nerve tissue or eliminating the need for immunosuppression drugs typically required to prevent implant rejection.

“Think of a nerve in terms of a trans-Atlantic cable,” says Walpole. “You have one giant cable filled with many wires bundled and sheathed together, carrying electrical signals. When a nerve is cut, everything after the injury point has to be cleaned and removed to make room for the new nerves. And, if you take out too much, the nerve doesn’t have as much potential to regenerate. That’s why it’s important to preserve the three-dimensional aspect. We can preserve that critical 3-D structure and inherent growth promoters in the nerve while selectively clearing growth inhibitors and the cells which can lead to immune rejection.”

Growing up in California, Walpole planned to be a pediatrician, but an internship changed her mind and her interest in applied science steered her toward a BS in biology and a Master’s in Biomedical Engineering. She moved to Gainesville for a job with a biotech firm in 1997, intending to return to California, but found too much opportunity to leave. “I’ve really seen the industry grow in the ten years I’ve been here,” she says. ●