



Mesa-based Guided Therapy Systems uses ultrasound technology to help in diagnoses and surgeries. The firm has 200 patents issued or pending. MARIA POLLETTA/THE REPUBLIC

# Mesa tech firm is still innovating 20 years on

**Maria Polletta**

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Humans have been performing surgeries in the same basic way for more than 2,000 years, according to Michael Slayton.

“We cut, open, cut and then sew it back up,” he said. “It’s invasive, and we’re still doing it.”

Twenty years ago, the Tempe resident and founder of Mesa-based Guided Therapy Systems decided to use his diagnostic-imaging background to pursue an alternative.

“Anybody who has a kid or has had some problems themselves, ultrasound is now just as common as X-ray. So we can see inside the body, no problem,” he said. “Well, if you can see it, wouldn’t it be nice to be able to ... push the button and destroy it if you want? Or cut, or change it?”

“Basically, what we created is a non-invasive scalpel,” he said. “We can see what we want to see, and what we can see, we can concentrate the ultrasound beam and destroy in a very precise manner.”

The technology, known as intense therapeutic ultrasound, builds on the fact that when sound waves pass through tissue, they’re partly absorbed and con-

verted to heat. By focusing that heat, physicians can spare other pieces of tissue.

Guided Therapy Systems first used the tool on cancer tumors that couldn’t be removed with traditional surgeries. Since then, the 22-employee research-and-development-driven company has discovered more applications geared toward repair and restoration.

The first group is largely cosmetic — cellulite treatment, fat reduction, skin improvements — and prompted the creation of two spin-off companies.

Guided Therapy Systems founded Ulthera, also Mesa-based, in 2004 to tweak intense therapeutic ultrasound technology for use in professional aesthetic medical devices. The federal Food and Drug Administration has approved that technology for use in non-invasive eyebrow and other lifts.

Xthetix, which focuses on skin-care devices for home use, followed in 2006.

Now, Guided Therapy Systems has set its sights on alleviating musculoskeletal pain, from tennis elbow and jumper’s knee to problems related to the Achilles tendon and sole of the foot.

“We’re doing it the same way we do other things: We are creating a project,

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and we're working on that project until it's successful to a point, until it's ready to commercialize," Slayton said. "Then, we'll create a new entity."

Slayton talked with *The Republic* about the history and future of Guided Therapy Systems, which has partnered with international giants despite its modest size, and why smaller is better for the company and its Mesa home.

**Question:** Why did you decide to start your own business? Why in Mesa?

**Answer:** I had worked on both sides, starting out at a small company and then working for a very large company (before I started Guided Therapy Systems). I had a very nice salary and a nice life and had a bunch of international companies I was responsible for. But it was boring. You can spend your life doing that if you like that sort of thing. I didn't. The majority of the innovation comes from small companies.

I chose this location (at Main Street and Sycamore) for a couple of reasons. One of them is a good proximity to the airport and freeways. Plus, the employees more or less worked and lived in the area.

**Q:** Why does this technology work?

**A:** It doesn't matter where the "scalpel" cuts, whether you cut out cancer or whether you do some other things that help the body to restore. Because we don't just destroy. What we do in many ways, in many cases, is create small lesions or small burns inside the body without breaking the skin. And the body's immune system restores it and builds new collagen, builds new tissue that fills up those voids.

We turn on the mechanism of repair that the body already has. You scratch yourself, you grow new skin, and nobody's surprised about that. Well, if you do something inside, unless the damage is massive, it does the same thing. We can also control the pain to a certain degree, and it goes away faster.

**Q:** Why have you kept Guided Therapy Systems small?

**A:** This is an R&D company, and by its nature, you have to keep it small or it's going to outgrow its usefulness. Except for two people, all the employees are technical, capable of doing their own work, need minimum supervision. They're experts in what they do, with a lot of years of experience. We're capable of doing a lot of things without amassing a bunch of people.

People who come here are not looking for career growth in terms of titles.



**Michael Slayton believes smaller is better for his Mesa firm.** GUIDED THERAPY SYSTEMS

They're looking for the work that they like. They're paid reasonably well. We don't yell at each other. The idea when I started the company was, you come to work and you don't have the feeling of, "Oh... I have to go there again." So people here enjoy it, and they stay.

If I needed more employees, it wouldn't be so difficult for me to triple the number of workers. But it's about preserving the culture and what we do here. It's a creative environment where you can ... do things without having three layers of supervision over you. We can make a decision in half an hour, whereas a large company may take six months. That's a huge competitive advantage of a smaller company. The speed with which we do things is pretty remarkable.

**Q:** Do you keep your spin-off companies small as well?

**A:** That's where the additional employees come in. The way we've expanded was not in growing the employees but starting new companies, using Guided Therapy Systems almost as an incubator.

We have more than 200 patents and patent applications. We also create hardware, software. We make things. We put them through the clinicals, because the majority, if not all, of our applications have to do with medical applications. From that point on, when we see it working and working well, we try to commercialize it. We find somebody who markets and sells well. Ulthera has about 200 employees now, for example.

Or, alternatively, somebody comes in and buys that project. And there's a very high possibility that that (acquired company) stays here because the expertise is here. One way or another, it benefits the state and the Valley.