Vascugenix Assists Cardiovascular Surgeons in the Operating Room

John Buday (University of Massachusetts, Amherst)

KEYWORDS: Entrepreneurship, student entrepreneurs, efest2019.

EDITOR'S NOTE: This is the seventh in a series of articles featuring past winners of e-Fest, EIX's undergraduate business plan competition, and their journey since then.

Cardiovascular surgeons need speed, efficiency and steady hands – usually two of them -- when they use guidewires that help catheters navigate their way through blood vessels to a blockage. But a new device, made by e-Fest(https://eix.org/e-fest-guide/) (https://eix.org/e-fest-guide/) 2019 third-place winner Vascugenix, now makes this procedure faster and more efficient than ever before.

Vascugenix(https://www.vascugenix.com/), co-founded by University of Arkansas student Noah Asher, developed the Speed-Torque, a device that holds the guidewire firmly enough in place to let the surgeon use one hand instead of two while guiding the wire through the blood vessels. This frees up the surgeon to give more attention to the patient rather than focusing solely on guiding the wire.

The company, which aims to develop new products that improve safety and efficiency in interventional cardiovascular procedures, recently announced (https://www.newswire.com/news/vascugenix-prepares-to-launch-speed-torque-device-21215242) a partnership with the development and manufacturing contact company Gilero to commercialize the Speed-Torque. The device's commercial debut was October 1, 2020, when it launched in six of Vascugenix's partner hospitals. Two days later, a surgeon used the Speed-Torque successfully to treat a a patient having a myocardial infarction -- a heart attack in which timely intervention can mean the difference between life or death.

Normal guidewire procedures often prove frustrating to even the most experienced surgeons.

"It can sometimes be really difficult to get the guidewire where you need to go," said Asher, who serves as the firm's CEO. "Particularly when you're dealing with someone who has a lot of blockages due to plaque buildup, or if you're trying to perform an emergency procedure on someone who's had a heart attack or stroke." He added that the device has saved a significant amount of time on cardiovascular procedures so far.

Asher credited fellow co-founder Dr. Dwight Chrisman as the "brains behind the company."

Chrisman is a leading interventional cardiologist in Little Rock, Arkansas and the director of the cath lab at Baptist Health Care System, the state's largest health care system. He noticed the difficulties with regular guidewires and came up with the idea for a new torque device some time around 2016. Chrisman and Asher would partner together two years later.

Prior to launch, the team also sent market-ready Speed-Torques along with surveys for feedback to 20 interventional physicians around the U.S. About 75% or more of these physicians were based outside of Arkansas, with no relationship to the company before then.

Physicians gave them consistently favorable reviews.

Vascugenix wholesales to Medline, one of their largest distributors. Medline determines much of the final cost for the device, which is packaged with an inflation device or angioplasty tools to be resold to hospitals.

Baptist Health Medical Center in Little Rock is their largest investor, and Asher calls them a "fantastic partner."

Since its inception, Vascugenix has grown to a five-person team and has developed several hundred Speed-Torque prototypes for bench testing, mechanical

validation and clinical validation.

Asher said the $20,000 in prize money won at e-Fest (https://eix.org/e-fest-guide/) (https://eix.org/e-fest-guide/) 2019, EIX's undergraduate entrepreneur competition, helped greatly with early development cost, marketing and sales expenses, salaries for early stage employees, fees for attorneys and FDA consultants, and other expenses.

The Vascugenix CEO wanted to thank the other members of his team for their dedication to helping the company navigate COVID.

"I'm really proud of the Vascugenix team," Asher said. "They had to do a lot more with less, and they showed a lot of resilience and grit in making a lot of key pivots during a challenging and unprecedented time."

Here's the progress the company has made since e-Fest 2019.

EIX STARTUP SNAPSHOT

The Product:

The Speed-Torque is a guidewire device meant for interventional cardiology procedures such cardiac catheterization: opening a blocked artery.

It prioritizes both speed and efficiency. With its non-slip grip and unbending wire, the Speed-Torque breaks from the main problems with traditional guidewires, allowing the surgeon added room to watch the patient rather than concentrating solely on guiding the wire.

The device also enables single-handed use rather than using both hands, as is often the case with traditional guidewires.

Founding University:

Interventional cardiologist Dr. Dwight Chrisman came up with the idea for the Speed-Torque in 2016. He would partner with future CEO Noah Asher and his team from University of Arkansas in 2018.

The Potential Market:

Doctors who perform interventional cardiovascular procedures involving a guidewire, like cardiac catheterization.

Vascugenix' commercial launch on October 1 involved six partner hospitals, including the Prairie Heart Institute of Illinois, San Antonio's UT Health Science Center, St. Bernards Medical Center and the Baptist Health Extended Care Hospital.

Vascugenix wholesales to

DOI:

Medline, one of their largest distributors, who then determines much of the final cost for the device to be resold to hospitals.

The Minimum Viable Product (MVP):	The commercial version of the Speed-Torque, released October 1, 2020 serves as Vascugenix's final product.
Stage of Development:	A market-ready version of the Speed-Torque has received FDA approval and been rated by 20 different interventional physicians around the U.S. Launched in six hospitals Oct. 1, 2020 and used in surgery for the first time Oct. 3. CEO Asher reports the device so far has saved a significant amount of time on cardiovascular procedures.
Annual Sales:	Not disclosed
Source of Idea:	Normal guidewire procedures in interventional cardiology often prove frustrating to even experienced surgeons. Dr. Dwight Chrisman, interventional

DOI:

cardiologist in Little Rock and the director of the Baptist Health Care System's Cath lab, took note of the difficulties with regular guidewires and came up with the idea for a new torque device sometime around 2016.

As printed on the Speed-Torque Product Info Sheet (https://secureservercdn.net/198.71.233.51/5xj.a88.myftpupload.com/wp-content/uploads/2019/12/vascugenix_product_info_sheet.pdf) : "Having to release the wire in order to reposition the torque device was a key issue Dr. Chrisman addressed with the Speed-Torque."

Traction:

Winning the third place prize of $20,000 at e-Fest 2019 went a long way in paying early development cost, marketing and sales expenses and other costs.

Their Speed-Torque device also received consistently favorable reviews from 20 interventional physicians, most categories scoring above a nine out of 10, or an 8.5 on average across all categories.

Since its inception, Vascugenix has grown to a five-person team and developed several hundred Speed-

DOI:

Torque prototypes for bench testing, mechanical validation and clinical validation.

Biggest Challenge:

The COVID-19 pandemic has impacted the entire medical community. Vascugenix has dealt with delays in lab testing, manufacturing difficulties and supply chain problems.

"We had to go back and, like with every industry, it brought a barrage of new unique challenges on top of the already challenging task of trying to launch a product in a very heavily regulated market," Asher said.

How they're dealing with the challenge:

Asher credited the entire Vascugenix team for their grit and determination in making key pivots at the right times despite the challenges brought by the pandemic. "With everything going on, we were still able to bring this product to launch in 2020 and really push it through," he said.

DOI:

Teammates:	CEO Noah Asher, COO Martial Trigeaud, CTO Emilie Darrigues, and Chief Medical Officer and President Dwight Chrisman. Fellow University of Arkansas graduate Abigail Resendiz also served as Director of Business Development.
Mentors and Advisors:	Martial Trigeaud was also an advisor to the Vascugenix team before joining as COO.
Resources at college that helped:	While run by the state rather than the University of Arkansas itself, Asher called the Arkansas Small Business Technology Development Center located on campus a "fantastic resource."
Honors and Accolades:	Vascugenix raised a seed round of $600,000 at the beginning of November, 2019. They also won first place in the undergraduate division of the Delta Plastics Arkansas Governor's Cup Collegiate Business Plan Competition earlier that year, along with $25,000 in prize money. The company also placed as a finalist in the 2019 Rice Business Plan Competition.
Advice for aspiring Student Entrepreneurs:	Asher recommends looking beyond resources in the college setting, to state departments of economic development and other state resources for starting small businesses. "Be willing to step outside your comfort zone and try new things. Look for older experienced people who have been down your particular road before and ask for help and advice," he said.

Learn More

Past e-Fest Winners Continue Innovating (https://eiexchange.com/content/past-efest-winners-continue-innovating)

DOI: