

[Wherever you look in Mercer County, innovation and technology continue to redefine the marketplace, helping to the improve quality of life for its residents while catapulting local residents, businesses and institutions to national and world prominence.]

The Future is Now

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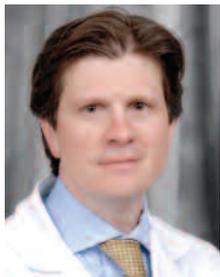
Led by a world-class surgeon, a highly-specialized medical team at Capital Health in Trenton is saving the lives of stroke victims with ground-breaking technology and an assist from doctors across the country using video cameras, while students at Thomas Edison College can pursue their dreams and earn credits anywhere at any time just by using their cell phones.



Henry Van Zyl



Matt Cooper



Dr. Erol Veznedaroglu

Wherever you look in Mercer County, innovation and technology continue to redefine the marketplace, helping to the improve quality of life for its residents while catapulting local residents, businesses and institutions to national and world prominence.

Dr. Erol Veznedaroglu, director of Neurosciences and Endovascular/Cerebrovascular Surgery at Capital Health, heads up an expansive, almost futuristic team of specialists that has been saving the lives of stroke victims by the dozens through the use of an innovative technology centered around a bi-plane machine that is used diagnostically and for treatment of acute stroke victims.

Veznedaroglu, one of only 60 physicians in the United States to perform the procedure utilizing the bi-plane technology previously headed a similar program at Thomas Jefferson Hospital in Philadelphia. His team of 25 doctors, nurses and support personnel moved to Trenton with him.

"We wound up in Trenton for two reasons," the doctor explained. "It's centrally located—60 percent of my practice was from central and southern New Jersey and also because Capital Health realistically understood the vision of the program and had the money to spend."

Capital Health has spent \$30 million this year establishing the bi-plane program, according to Veznedaroglu, which includes the bi-plane suite, other equipment, personnel and a fleet of three helicopters that fly in patients from throughout the region. Since January, Veznedaroglu and his team have treated 600 patients.

The facility is plugged into a nationwide 24/7 video-equipped phone link that allows attending physicians to consult with doctors who are stroke specialists, matching diagnostic and clinical expertise.

"When a patient comes in with symptoms, a video camera is put on them and a neurologist anywhere in the country evaluates the patient, has a discussion with the attending doctor, evaluates a CAT scan and makes a recommendation to get to a comprehensive stroke center," Veznedaroglu explained.

Once that determination is made, the call is transferred to Trenton.



The suite at Capital Health where they use the biplane angiography system.

"They speak directly to me or my partner in a conference call and we can have the patient here in 30 minutes," he said.

A network of ambulances also supports the center so that community hospitals throughout the state and the region not equipped to handle stroke cases can assure their patients will receive world-class care at Capital Health.

Expediency is of paramount importance with stroke victims. There is no time to waste, according to the physician.

"A state this size not having this level of care was obviously a real problem," Veznedaroglu continued.

"What we have built here is very exciting; other hospitals understand it's a very good thing for the state. We've attracted top doctors and nurses, not to mention we've counteracted the sieve to the north and south," a reference to the longstanding issue of New Jersey residents having to seek specialized care in New York or Philadelphia.

"Now, patients are coming from Philly, Delaware, Ohio, Florida, international patients are coming to Trenton, New Jersey."

The biplane technology enables Dr. Veznedaroglu to create a three-dimensional image of the brain within seconds of injecting a contrasting fluid into the vein, taking a photo, and rotating the photo for a full three-dimensional image. That improves the likelihood of an accurate diagnosis, and saves precious time. The 3D image locates every artery, vein and capillary, the aneurism and other trouble spots.

"That's important when you're dealing with a stroke," he said. "There's no such thing as a small bleed. The biplane allows me to take the pictures, see the catheter going into the aorta through neck into the brain and allows me to visualize the coils, glues, and the stents.

"I can snake a catheter into a small vessel and open the clot; without this technology the visualization is impossible," he added.

St. Francis Medical Center, which has been providing advanced diagnosis and treatment for Breast Health for years, and was among the first in the area to provide same-day diagnosis.

St. Francis boasts the GE Healthcare Senographe Digital Mammography system, which provides physicians with clear and precise all-digital images, rather than images on X-ray film. The system provides the largest field of view currently available, which can be extremely helpful for precision imaging of patients with diverse shapes and sizes.

Magnetic resonance imaging has emerged as an advanced problem-solving tool to assist in diagnosing and staging disease as well as monitoring response to therapy. In November, the Imaging Center at St. Francis will begin providing this service to patients.



The Mobile Learning Flash Drive at TESC.

"The new Breast MRI will revolutionize the way we diagnose breast cancer," says Beverly Rauenzahn, director of Radiology at St. Francis. "Now when a mammogram proves inconclusive, a breast MRI can be performed and give us the information we need to make an accurate diagnosis."

More than two decades after it pioneered the development of online college courses, Thomas Edison State College has launched a new course delivery system that enables students to complete courses regardless of their location and without the need for an Internet connection. All that's needed is a web-enabled cell phone and a flash drive no bigger than a thumb.

In spring 2009, students were able to select from 15 courses delivered entirely on a single two-gigabyte (2 GB) flash drive, a device smaller than a pack of gum. These new flash-based courses, called FlashTrack courses, are designed for independent learners and prepare students to take a pass or fail examination with-

out an Internet connection. They were part of the first phase of the college's Mobile Learning Initiative, which was made possible with funding from the Thomas Edison State College Foundation.

"The Mobile Learning Initiative has created new course formats that give students more flexibility to do their course work while commuting, on military deployment, sitting on the beach or in any instance where Web connectivity is not convenient or immediately available," said Dr. Henry van Zyl, vice provost, Center for Directed Independent Adult Learning at Thomas Edison State College. "The flash drive acts in much the same way a computer hard drive does, but it is portable, secure, reusable and completely self-contained.

"We're doing something here that I have not seen any other school do and I can say that with a lot of confidence," he added. "I've not come across anything remotely like what we have; yes, other schools are using flash drives but not in the way we do."

Matt Cooper, an instructional technology specialist who has worked on the enabling technology behind the Flash Drive system, said most courses offered at Thomas Edison State College would be available in that format within one year.

In July 2009, the college launched its next new course delivery format, which enables students to access 20 courses with any web-enabled cell phone or mobile device. The courses, known as Mobile Option e-Pack® courses, are also designed for independent learners and enable students to use smartphones to download and complete diagnostic quizzes that form part of the regular course work and prepare students to take a final exam.

The Mobile Option e-Pack® courses utilize the OutStart Hot Lava Mobile platform, distributed by OHE Associates, which gives students access to the quizzes anywhere, anytime, using a web-enabled cell phone or other mobile devices. OutStart Hot Lava created a conversion tool for the college that enabled the institution to flow quizzes instantly into mobile-compatible language, eliminating hours of programming cost and time.

"This is the ideal option for students on the go and who need access to quiz modules when they are not physically at a desk, or when they are unable to use a wireless network for laptop connectivity," Van Zyl said.

"Our goal is to develop better and more convenient ways to deliver our courses to our students, and that takes us beyond the Internet," he said. "From flash drives and leveraging the latest in wireless technologies, the sky is the limit for us."

Both men said their Flash Drive technology has drawn attention from educators around the world.

The school is working with publishers to incorporate electronic versions of textbooks on flash drives that would eliminate hard copies of textbooks, according to Van Zyl.

"It's a real game changer in terms of how we deliver our course content to our students," Cooper said.

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4BestBuy & 4BestSolar

Despite the downturn in the economy, Tom Rust and his partner Rich Albano launched two businesses earlier this year from their suite of offices in Robbinsville.

Both companies cater to the consumer, both rely heavily on new technologies and both enterprises are evidence of good old-fashioned American ingenuity.

The entrepreneurs went online with 4BestBuy.com in April, an Internet-based referral service for homeowners looking to hire home contractors, while 4BestSolar opened its doors in May.

As the saying goes, one thing led to another—one month apart.

The online referral service makes it simple for homeowners in need of home repairs to find qualified contractors. Rust and his partner put each contractor through a vetting process to insure their integrity, reliability and quality of work, checking references, insurance and credit worthiness. They determine what contractors will be sent leads after receiving inquiries from visitors to the website.

"We do the due diligence a consumer should do but they don't have time to," Rust explained.

A homeowner need only point and click on the website to narrow their search, describe the project and receive as many as four referrals from 4BestBuy.com; contractors pay a \$14 fee for each lead generated off the website. The service is free for the consumer. Contractors can choose not to pursue the lead, according to Rust.

"Before 2008 there was work so contractors didn't have to apply themselves to the marketing side of the business but times have changed, the economy has forced the contractor to be more marketing savvy. We represent that for them, we're endorsing what they do, what 4BestBuy.com is saying is 'we can help you find business you may not have gotten otherwise,'" Rust said.

Once a project is completed, 4BestBuy sends an email to the homeowner asking for feedback on the job with a five-point rating scale.

Rust said 4BestBuy.com is still in a growth stage, while 4BestSolar is generating more interest and more business.

"We're absolutely giddy right now," Rust said.

Positioned to take advantage of the pervasive "green" trend in America, 4BestSolar is a full-service solar energy company poised for rapid growth. Rust is excited by its prospects in a burgeoning industry that is tapping into and taking advantage of mandates from New Jersey and the federal government to apply new technologies that will improve energy efficiency, reduce costs and reduce reliance on fossil fuels and take advantage of unlimited energy sources like the wind and the sun.

In the process of putting together a roster of home contractors for 4BestBuy.com, the partners quickly realized there was tremendous opportunity for growth and success in the solar power business, according to Rust—and too few contractors in the Mercer County marketplace.

"We couldn't find any viable solar businesses for full service installation," Rust said. "My partner started selling systems to learn more about it and we realized there was an opportunity."

Both agreed the business would go beyond installation.

"The system to capture all the government money out there that is available to the homeowner is complex," he continued. "We looked at one another and said 'we need to do this, let's figure it out.'"

Homeowners in New Jersey have access to the best federal and state incentive programs in the country, according to Rust. A combination of federal stimulus refunds, state rebates and the New Jersey Solar Renewable Energy Certificates program enables homeowners to "Go Solar" and eventually save enough in annual energy costs make their electric meter run backwards, Rust said; 4BestSolar can help customers navigate the regulatory and application process and expedite installation of their custom-designed solar energy system, according to Rust.

To help educate consumers on the financial incentives, 4BestSolar sponsors seminars on a regular basis throughout Mercer County, with an up-to-date calendar on the website: www.4BestSolar.com. In addition to helping increase home value, other solar energy incentives include a no-cap Federal tax rebate of 30 percent and up to \$17,500 in rebates from New Jersey, according to Rust.

"We'll handle it all from end to end," Rust said. "We're hanging our hat on making certain the homeowner gets what they deserve which could pay for 100 percent of their system if set up properly," he added. "We review the design, installation, application and licensing on all levels to make sure those entities—the local, state and federal governments are satisfied and regulations are met." ■



Managing Partner Tom Rust at left with partner Rich Albano.



A groundmount solar panel installation.