

# PROMOTING A MISSION



**Center for Innovation furthers its mission of promoting young engineers & new health care concepts by partnering with Christian Brothers University**

**B**right young minds, problems in need of a solution, and space to hash out ideas: it's a winning combination that benefits both Regional One Health and Christian Brothers University.

The two organizations recently embarked on a partnership that will give CBU students a chance to contribute their engineering knowledge to projects at our Center for Innovation. It's a perfect fit for the innovation center's mission of bringing disrupting thinking to the health care industry while improving medical services for patients in Memphis and beyond.



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ALEJANDRA ALVAREZ  
Center for Innovation Director

Center for Innovation Director Alejandra Alvarez said partnerships like the one with CBU help achieve those goals: “Regional One Health cares for some of the most traumatic and challenging cases and has research orientation and commitment to innovation, and the Center for Innovation is able to bring those two worlds together to fuel disruptive health care innovation,” she said.

For Michael “Sean” June, PhD, associate professor of mechanical engineering at CBU’s Gadomski School of Engineering, the relationship gives students real-world experience they can carry with them into their careers. Since he teaches many first-generation college students from demographics that aren’t traditionally well-represented in engineering, it’s a way to open doors.

“As a teaching university, our mission is to take these kids and develop them into engineers. We’re not here to screen them, but to develop them,” Dr. June said. “We take a holistic approach so that they leave CBU as productive, experienced engineers.”

The Center for Innovation is supporting that by giving his students the opportunity to apply their engineering expertise to real-world endeavors. Their first project, aimed at protecting health care providers at the height of a pandemic, couldn’t be more timely.

Earlier this year, Alvarez approached Dr. June with that first initiative – an intubation tent that shields providers from respiratory droplets during airway procedures. Regional One Health Certified Registered Nurse Anesthetists Frank Williams and Mary Farris-Conley had created a prototype and were working with the Center for Innovation on testing, refining and scaling.

Alvarez knew her innovation center team had the expertise needed to help them refine their idea through testing and feedback. For years, the center has worked with external and internal innovators on a series of successful projects aimed at improving health care, such as a new device to heal bone fractures and a Manuka honey-based wound care product.

At the same time, she also knew involving the CBU students would enrich that process while helping her accomplish another key part of her mission. Students could provide engineering perspective on the nuts and bolts of incorporating



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**MICHAEL JUNE, MD**

Associate professor of mechanical engineering at Christian Brothers University

feedback into an improved prototype, and she would get to promote new engineers who can be part of a bright future for innovation.

“One of our underlying objectives is building the Memphis ecosystem to attract innovators, so this is a perfect fit for our work. Engineering students are essentially the inventors of the future,” Alvarez said.

To kick off the partnership, Alvarez and Dr. June tasked students with finding ways to make the intubation tent portable, easy to use and easy to store. Students reviewed existing products, including the one created by the Regional One Health providers, then worked on their concepts.

“There are different ways to innovate, and I don’t necessarily tell the students which approach to use,” Dr. June said. “Our partnership with Regional One Health exposes them to really good, creative ideas, and it gives them a chance to collect and channel those ideas.”

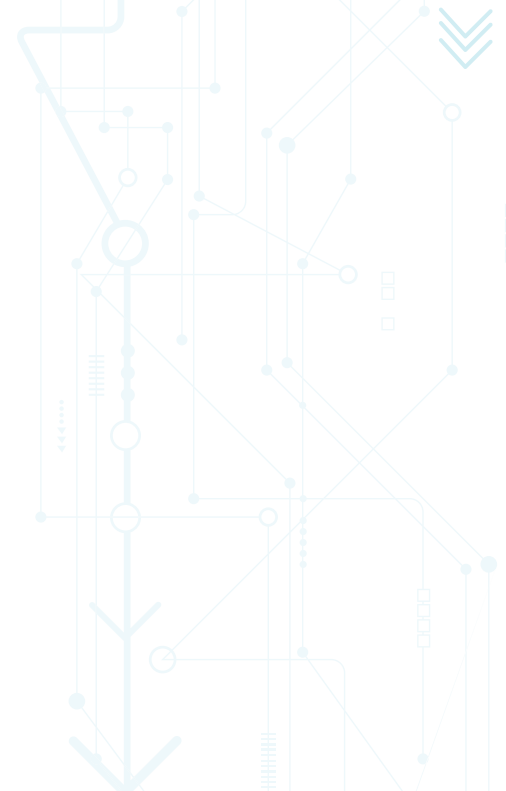
Students start with a brainstorming process that Dr. June bases on his time as a master inventor at IBM, where he obtained 25 patents. “IBM’s ecosystem and support structure ensures you can be innovative. I’m bringing that ecosystem and methodology to CBU,” he said. “Our environment is intellectually safe, and that gives me an opportunity to teach this innovation mindset.”

Dr. June’s process, coupled with the framework and methodology at the Center for Innovation, lets students play a meaningful role in real-world projects and in supporting Memphis’s growth as an innovation hub. In doing so, they learn about all aspects of the engineering process.

“My generation built model airplanes and took apart stereos. This generation has wound up not doing those things as much,” Dr. June laughed. “We see a lot of students in engineering programs without the skills you need to do simple prototyping, such as soldering, measuring and cutting. Those skills are important, and allow us teach them through project-based learning.”

“It’s very valuable for the students,” he added. “We’re building a long-term relationship that gives students a chance to work on real-world problems. Regional One Health and the Center for Innovation are an important partner, and we look forward to being in it for the long haul.”

Alvarez agrees. “We’re always looking for high-performing partnerships that help us move ideas forward,” she said. “We look forward to a fruitful relationship with more projects in the future. The possibilities are as endless as the types of ideas that come through our doors!”



**Regional One Health  
Center for Innovation**

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# WHAT IS THE FUTURE OF HEALTH CARE?

Regional One Health doctors and patients are helping answer that question thanks to the Center for Innovation.

**R**egional One Health's Center for Innovation opened in 2016 based on the idea that thinking outside the box is uniquely important in health care, where finding a better way can improve how doctors care for their patients and reveal new ways to provide hope and healing.

It was a bold move for a health care system to make, but it is thriving thanks to support from senior leadership and the Regional One Health Foundation.

"It's outside the norms to give access to innovators," said Alejandra Alvarez, Center for Innovation Director. "Health care is typically a closed environment. But we believe care is not just about what's good for Regional One Health, it's about what's good for the industry."



**We want to build an ecosystem in Memphis that attracts innovators to improve health care and help the city grow. We're successful if they're successful.**

**ALEJANDRA ALVAREZ**  
Center of Innovation, Director

It's a philosophy that is proving attractive to entrepreneurs. The center's spirit of discovery first caught the attention of Cast21, a company that had created a new orthotic to heal bone fractures without the inconvenience of a traditional cast. Their sleek webbed sleeve – which is breathable, waterproof and lightweight – had earned certification as an FDA Class I medical device. The time had come to test and refine it.

## CAST21

**Cast21 CEO Ashley Moy** said the Center for Innovation stepped up to the plate. Over the past year, Regional One Health has given her company a chance to not only see real doctors and patients use the orthotic but to also learn about everything from how hospitals vet and purchase products to how they train their staff to use them.

"Feedback is extremely valuable to us," Moy explained. "We've already made changes in light of what they've said."

Moy and VP of Engineering Veronica Hogg started by training surgeons to apply and remove the product, a simple process that takes only 10-15 minutes and leaves the patient with an effective – and cool-looking – protective device in a color of their choosing.

When the surgeons raised questions, such as how to apply the sleeve on a trauma patient who is lying flat rather than sitting, Moy and Hogg found answers. Soon enough, the device was ready to be used on patients, who were also encouraged to provide feedback.

Marijo Cox welcomed that opportunity after she broke her wrist in a car accident. Marijo was initially fitted with a splint from her fingers to over her elbow: "It was big and cumbersome," she said, remembering how much she had been dreading being stuck in it for weeks.

Then she was offered the Cast21 device. "The doctor brought it in and told me it's much more comfortable, it's lighter, you can shower in it, and asked me if I'd be interested. I took one look at the big cast I was wearing and one look at the one in his hand and I said, 'Yes, please!'"

Marijo said her experience was excellent, and the only problem was minor irritation around her fingers. Based on her feedback, the Cast21 team again jumped into action, making changes to enhance patient comfort.

As they get closer to taking their product to market, Moy said they are in a better position thanks to the access they received at Regional One Health.

As Cast21 moves forward, so too does the Center for Innovation.



Alvarez recently announced a partnership with SweetBio, which bioengineered a new material using Manuka honey and created a wound care device with the potential to combine the effectiveness of an advanced dressing with the convenience of a traditional dressing.

At Regional One Health, they'll test the product on the management of wounds such as ulcers, surgical sites and more.

**Kayla Rodriguez Graff, SweetBio cofounder and CEO**, calls it the next phase of her company's story – and one that wouldn't happen without the Center for Innovation.

Alvarez is equally excited, noting it's another step toward the center's ultimate goal of creating an environment where Regional One Health takes the lead in turning Memphis into a hub for creating the health care of the future: "We want to build an ecosystem in Memphis that attracts innovators to improve health care and help the city grow. We're successful if they're successful."



## Regional One Health Center for Innovation

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# CRASH, TEST PROGRAM

After a scary car accident, Marijo Cox healed with the help of innovation and compassion at Regional One Health

**W**hen Marijo Cox was rushed to Regional One Health's Elvis Presley Trauma Center after a head-on car crash, she was scared – but that didn't stop her from taking part in a unique program to test a product that could improve care for patients with broken bones.

Marijo says the compassion and professionalism she found at Regional One Health made it easy to trust the medical team when they offered something new.

She never doubted their expertise. She could tell they cared, and that they had her best interests at heart.

**Besides, the device they wanted her to try looked really, really cool.**





It all started with the terror of heading to the trauma center after her vehicle was struck near Coldwater, Mississippi when another driver crossed over the double yellow line.

"I have lived in Desoto County for 10 years, and the other 54 years I've lived within 100 miles of Memphis, so I'm very familiar with the trauma center and the shape people are in when they're taken there," she said. "So I was terrified."

The Elvis Presley Trauma Center is designated as a level-one trauma center for Tennessee, Mississippi and Arkansas, the only facility in a 150-mile radius that can treat the most severely injured and ill patients. Marijo's worry was understandable, but quickly put to rest: "From the minute I got there, I received the best nursing care I've ever experienced, not just personally but having spent time with others in the hospital," she said.

Today she can even laugh when she remembers the moment doctors gave her the option to try a new device to heal her broken wrist.

She'd initially been fitted with a splint that went all the way from her fingers to over her elbow: "It was big and cumbersome," she said, and she dreaded the thought of having to wear it for weeks. "I had never broken a bone before, but my daughter broke both of her arms at the same time, so I know how awful a cast can be."

Now, here was a trauma surgeon showing her a light, sleek webbed sleeve that would let her skin breathe. She could get it wet, he told her. If her skin itched, she could scratch it.

"The doctor brought it in and told me it's much more comfortable, it's lighter, you can shower in it, and asked me if I'd be interested," she said. "I took one look at the big cast I was wearing and one look at the one in his hand and I said, 'Yes, please!'"

The device Marijo was presented with was created by the medical startup Cast21. It is being used by surgeons and patients at Regional One Health as the first Incubator Project in the health care system's Center for Innovation, which opened in 2016 to



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MARIJO COX





give innovators a place to test products and ideas that can improve the quality of care for patients.

For Marijo, it was an example of how Regional One Health isn't just about compassionate and attentive treatment – it's about innovative care as well.

Marijo, who also suffered a fractured sternum, broken ribs and chip in her left heel in the crash, said she's grateful for the treatment she received at Regional One Health, and never for a second regretted her choice to test Cast21's product.

The device was easy from the start. She was fascinated as she watched doctors slip the webbed sleeve over her arm and fill it with a colorful resin that in a matter of minutes hardened to protect her fractured bone. "Watching them put it on was just cool," she said. "Seeing them pump that polymer in there and watching it change colors was really neat."

While wearing the device, she could use a computer, shower, do chores, etc. "I'd go outside to sit and read, and I could just come back in and wash the sweat off my arm," Marijo said. "It was fabulous. It wasn't heavy or bulky – it was light and breathable."

The only problem was some rubbing against her fingers, but that was easily addressed: "The sweet nurse in intensive care said, 'We can fix that.' She



put moleskin around it, and I was fine. After a while, it didn't bother me at all."

Better yet, the Cast21 team would also take steps to address Marijo's concern, a testament to how they're using feedback they received through the Center for Innovation to make patients' experience with their product even better.

For Marijo, it already deserves rave reviews. After a couple months, doctors removed the device – "He just snipped three things and it was off – just amazing," she said – and her wrist had healed completely. "I would highly recommend it," she said. "I'd give it an 11 on a 1 to 10 scale. I don't know why they don't put it on everything!"



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