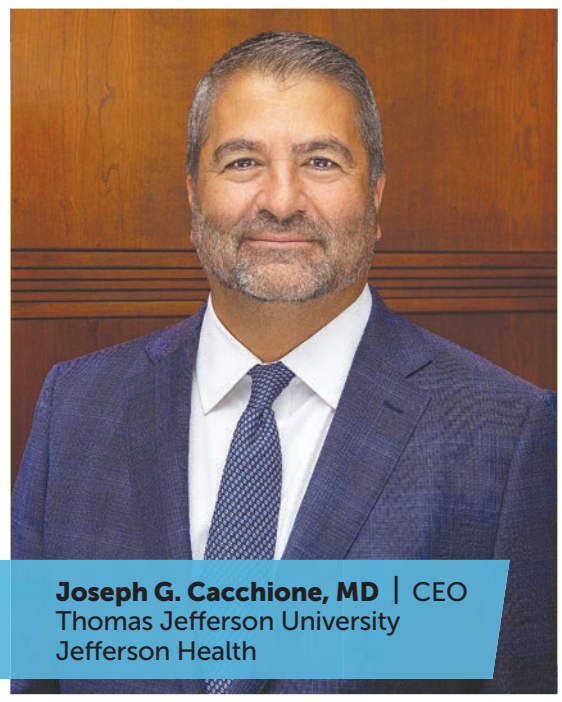
HELLO JOE

From our family
to yours,
we welcome you
to Jefferson!



Joseph G. Cacchione, MD | CEO
Thomas Jefferson University
Jefferson Health

> **With Joe Cacchione's impressive background and experience, he is exactly the right enterprise CEO to lead Jefferson as we near our 200th anniversary of delivering exceptional higher education, patient care and health coverage.**

Patricia D. Wellenbach, BSN, FCPP
Chair of the Board of Trustees
Thomas Jefferson University & Jefferson Health

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IN PURSUIT OF A GREATER TOMORROW

To the Community,

When I learned Jefferson selected me as its next CEO, I was thrilled and humbled — thrilled to return to Pennsylvania, where I was raised and received my medical degree, and **humbled to lead an institution with a legacy of transforming how it teaches students and cares for patients.**

Jefferson is a special place, with nearly 200 years of tradition, but **forward-thinking in its approach to higher education and patient care.** This is what drew me here — the rich culture and diversity, the spirit of innovation, and the quality and passion of Jefferson's faculty, healthcare providers and staff.

Equally important, is what Jefferson stands for. **It is committed to improving lives**; reimagining health, education and discovery to create unparalleled value; putting people first; being bold and thinking differently; and doing the right thing. **Translating these qualities into meaningful, equitable and inclusive healthcare and education solutions that benefit all communities has been my life's work.** I look forward to partnering with the Thomas Jefferson University and Jefferson Health leadership teams, and all of you, to continue this important mission, and to map out Jefferson's bright future.

I am excited to be back home and look forward to reconnecting with this great city and all of our surrounding communities.

Joseph G. Cacchione, MD | CEO
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As a leading institution in the region, we are called to be part of sustainable solutions that will address health and academic equity in all communities. As we welcome Joe Cacchione, MD, as Jefferson's new CEO, and look to celebrating our 200th Anniversary in 2024, the board and he are united in our commitment to be a convener and collaborator to improve lives; all lives.

We envision a healthier community in which all members are included. It is not enough to provide excellent clinical care, we must do more in terms of addressing and understanding barriers that prevent people from getting the care they need and deserve.

We envision a well-educated community in which all members are included. Our University provides a professions-focused academic experience that must be made even more available to underrepresented students.

We envision further expanding cutting-edge programmatic, clinical and applied research, as well as scholarship and discovery that ensure excellence in our academic and clinical offerings.

We envision being part of the solutions that lift up families and communities to achieve better lives. We must do more about neighborhood violence, food insecurity, and advocating for marginalized communities.

The highest and most important calling of a board is the hiring of a CEO. In Joe, we have found a leader who will help me and my fellow trustees envision and deliver on such a future for the Delaware Valley.

Stories are important. The stories about Jefferson on the following pages of the newly designed *Philadelphia Inquirer* demonstrate why we are optimistic.

We look forward to doing our part, in collaboration with all others, to be a visible force for change; regionally, nationally, and internationally.

Patricia D. Wellenbach, BSN, FCPP | Chair of the Board of Trustees
Thomas Jefferson University & Jefferson Health

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THIS IS YOUR JEFFERSON

Dedicated to reimagining health, education and discovery to create unparalleled value

Thomas Jefferson University was founded in 1824 as Jefferson Medical College, and in the following year opened the country's first college clinic dedicated to providing care to the poor. Today, Jefferson is a thriving professions-focused national research university with 10 colleges, four schools and an academic health system with 18 hospitals.

While we have grown — employing over 42,000 — our mission has never changed. It's in our DNA. We are committed to improving lives — for those we teach, care for, and employ, and for those we support with hundreds of community outreach programs throughout the region, and around the world.

Annually, Thomas Jefferson University and Jefferson Health contribute:

$13+ billion
to the region's economy

$600 million
in charitable care and community benefit

$172 million
in sponsored basic science, clinical and applied research funding

8,400 Total diverse student population hailing from 25 countries and 26 states

COVID-19 vaccine doses administered within our communities **132,000**

200 Total undergrad/grad programs in architecture, business, design, engineering fashion & textiles, health, medicine, science and social science

Telehealth visits during the height of COVID-19 **500,000+**

96.5% Undergrad success rate in securing jobs or attending graduate school

Sidney Kimmel Cancer Center's position as one of only 70 NCI-designated cancer centers nationwide **1/70**

25+ Nationally ranked programs in architecture, medicine, fashion design, occupational therapy, fashion merchandising and management, design, nursing and more

Jefferson Health specialties nationally ranked by *U.S. News & World Report.* Three in the top 10: Ophthalmology (Wills Eye Hospital), Orthopedics (Rothman Orthopaedics at Jefferson Health and Philadelphia Hand to Shoulder Center at Jefferson Health) and Rehabilitation (MossRehab) **10**

SENDING RESEARCH TO SPACE

Three projects from Thomas Jefferson University became part of the first-ever private mission to the International Space Station.

Earlier this year, the Rakia space mission was the first to send space tourists to the international space station, along with 44 research projects to help scientists explore a broad range of topics. Three experiments were contributions from Thomas Jefferson University research collaborations.

The Rakia Mission, led by the Ramon Foundation and the Israeli Space Agency at the Ministry of Science and Technology in Israel, carried Eytan Stibbe - a former fighter pilot, one of the founders of the Ramon Foundation, and only the second Israeli to go to space. Jefferson is collaborating with researchers from Sheba Medical Center in Israel, and other institutions, to develop experiments possible for non-scientists to perform.

Jefferson's research projects included examining how low gravity in space might change an astronaut's urinary microbiome before, during and after a mission. Urinary-tract infections and retention can be serious problems during space missions. The second experiment monitored stress and sleep while testing stress interventions on novice space travelers – to seek a better understanding of how the stress of a space mission affects the human body.

The final experiment studied the effects of space travel on the immune dysfunction. Most astronauts suffer from changes in their immune system - from heightened immune reactions, to reactivation of viruses that normally lay dormant in the body.

The Rakia Mission successfully launched on April 8, 2022.

TO READ MORE VISIT: JEFFERSON.EDU/SPACE

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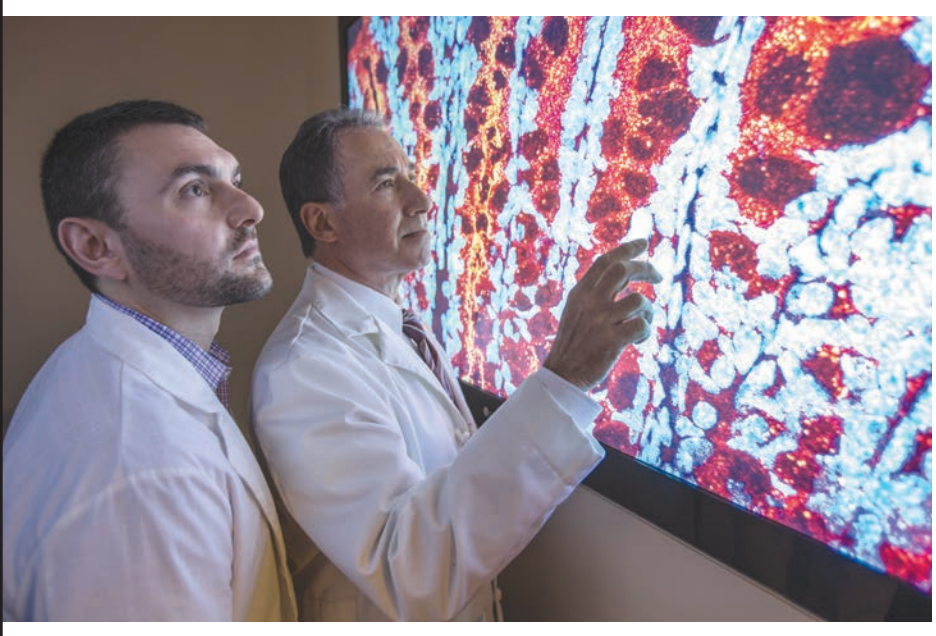
RESEARCH & DISCOVERY

A Path Toward Digital Equity

When her parents got COVID-19, Chelsea Torres, home from college, helped them transition to telemedicine—setting up their online accounts, mobile devices and more. They were clearly uncomfortable with the technology, but it seemed they also didn't trust accessing it for health care.

For emergency medicine physician, Kristin Rising, MD, it was clear that many of her patients weren't comfortable using telehealth, but why? Dr. Rising, also the director of the Center for Connected Care, formed a partnership with Esperanza Health Center to engage Latino community focus groups to address three questions: Does a person have access to technology and have the skills to use it; does a person believe the technology is relevant; and does a person trust it?

Chelsea, who was working as a community research assistant at Esperanza, signed up to lead these focus groups. The goal: to understand their mistrust, and build a toolkit to help physicians and community organizers address their healthcare needs. To reassess and improve their work to date, Dr. Rising and others are convening a symposium in September with leading experts to share best practices and gain national consensus on how to achieve digital equity.



Booster for Colon Cancer Vaccine Improves Protection

Colorectal, pancreatic, esophageal and stomach cancers have high recurrence even after successful surgery or radiation treatment. To combat these treatment-resistant cancers, researcher Adam Snook, PhD, designed cancer vaccines that would train patients' immune systems to seek out and kill cancer that comes back.

Typically, the vaccines are made with modified viruses or modified bacteria. But new research from Dr. Snook's lab shows that in an animal model of colorectal cancer, using a combo booster of both viral and bacterial vaccines is safe and far more effective at fighting the cancer than either vaccine by itself. The researchers are starting a Phase I clinical trial to test the approach in patients next year.

Decolonizing African Studies

Thomas Jefferson University professor, Marcella McCoy-Deh, PhD, had known about the need to decolonize African Studies, but hadn't understood the problem's depth nor its effects on African scholars. A Fulbright Scholar at Ghana's Kwame Nkrumah Institute of African Studies, Dr. McCoy-Deh found that source material for courses on slavery and colonization were authored by non-African scholars. The materials included skewed interpretations and omissions, or were dominated by European and colonial perspectives.

For Dr. McCoy-Deh, this telegraphed how knowledge is defined and distributed. She learned that the high-quality research of African scholars was not published in accessible journals and textbooks, and through

international databases like JSTOR and Google Scholar. Her work led to a project called Africa in First Person, which aims to become an online repository of work by African scholars, writing on the African experience. Dr. McCoy-Deh's hope is that it can become a bridge to creating new research collaborations, and connecting scholars with publishing organizations.

TO READ MORE VISIT:
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MIND OVER MATTER

A stroke patient's journey to help researchers understand if brain implants connected to a robotic arm brace can help restore movement.

On the morning of January 20, 2019, Holly Ulland found her son, Aaron, on the floor by his bed. Terrified, she noticed his left arm dangling at his side. At only 39 years old, Aaron had suffered a stroke. That morning completely changed the lives of mother and son. The stroke, impacting two major parts of his brain, had paralyzed Aaron's left side, making it difficult to speak, swallow, walk and see. Although intensive rehabilitation helped him regain many abilities, Aaron, like so many other stroke survivors, lost his ability to work, and a good deal of independence.

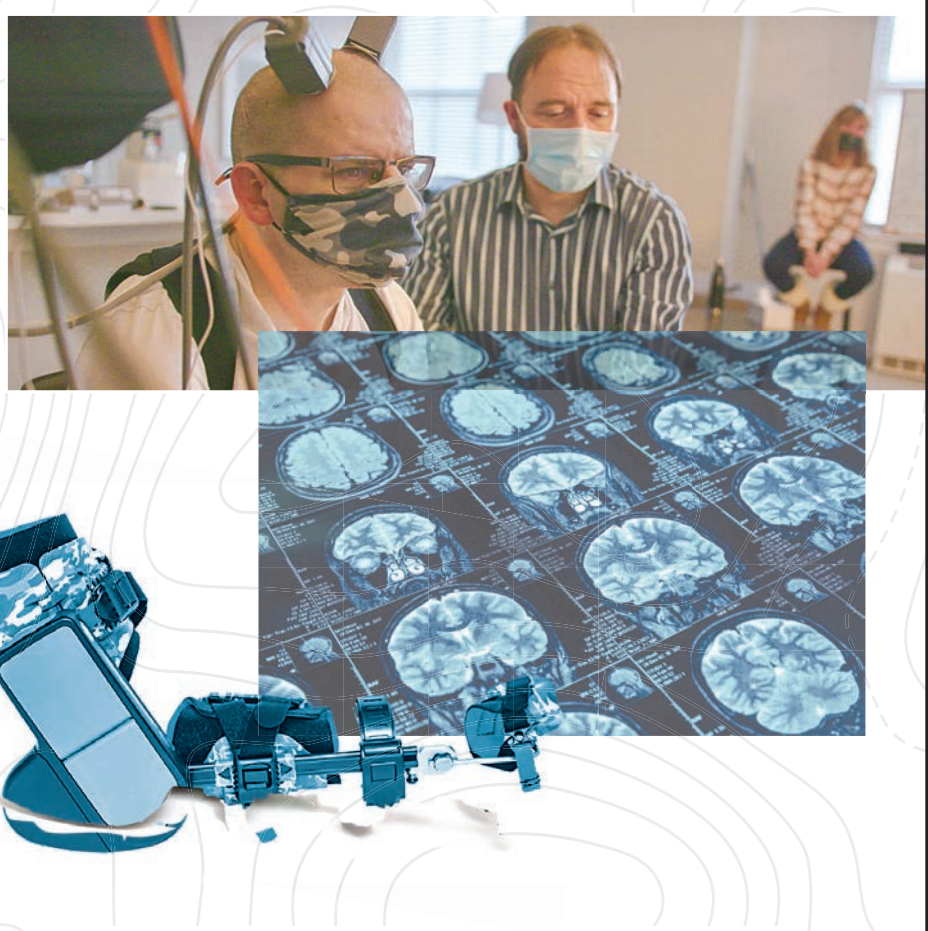
Aaron didn't know it then, but in two years, his life would again change dramatically, through his participation in a breakthrough clinical trial. He would become the first person with this common type of stroke to be implanted with brain electrodes – a brain computer interface — that would send signals from his brain to a robotic arm brace that would move his weaker left arm.

But before that future could become reality, Jefferson researchers would need to test if it was possible to find usable brain signals near the stroke-damaged areas that were still capable of controlling movement in someone like Aaron. First, he would have to undergo brain surgery, to implant the electrodes, three months of intensive physical therapy requiring him to live near the hospital, and much more.

> "We were asking Aaron to agree to brain surgery and then spend three months of his life with us, so we could monitor him closely and he could train daily. That's a big commitment."
>
> **Mijail Serruya, MD**
> Principal Investigator, Assistant Professor
> Thomas Jefferson University

Post-surgery, Mijail Serruya, MD, principal investigator, and his team, met with Aaron for intense physical therapy and then to connect a computer to the ports on his head to record the signals from individual neurons just next to the area of his brain impacted by the stroke. Using artificial intelligence, the computer algorithms learned from Aaron as he controlled the movement of a small dot in a simple computer game – with his thoughts. The team then moved on to teaching Aaron how to control the robotic brace by first using his residual arm muscle to move it. Through weeks of learning, the breakthrough came. Researchers bypassed the muscle to control the arm brace and Aaron was able to move the robotic brace only with his mind.

This study serves as necessary bridge to future research that would use fully implanted wireless electrodes to improve movement in this type of stroke patient. Jefferson's research also lays the groundwork for answering a more intriguing question. Could an implant, coupled with intensive training and rehab offer more sustained improvements in mobility even after implants are removed? Jefferson continues its pioneering research in this area, thanks in no small part, to Aaron's bravery.



VIEW A DOCUMENTARY OF AARON'S JOURNEY
VISIT: JEFFERSONHEALTH.ORG/AARON

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PARK IN A TRUCK

Toolkit transforms empty lots into green spaces

Kim Douglas, director of the University's landscape architecture program, has been disrupting the status quo when it comes to high-quality green space in under-resourced neighborhoods. In 2018, she and her colleagues created the Park in a Truck program — converting empty lots throughout Philadelphia into community parks. Jefferson's first Park in a Truck green space was created in Mantua, and soon became a mini-catalyst for broadening the program which was later named a Fast Company finalist in the Social Good category in its Innovation by Design Awards. Four years later, Park in a Truck is releasing a toolkit to help others convert empty lots to green space.

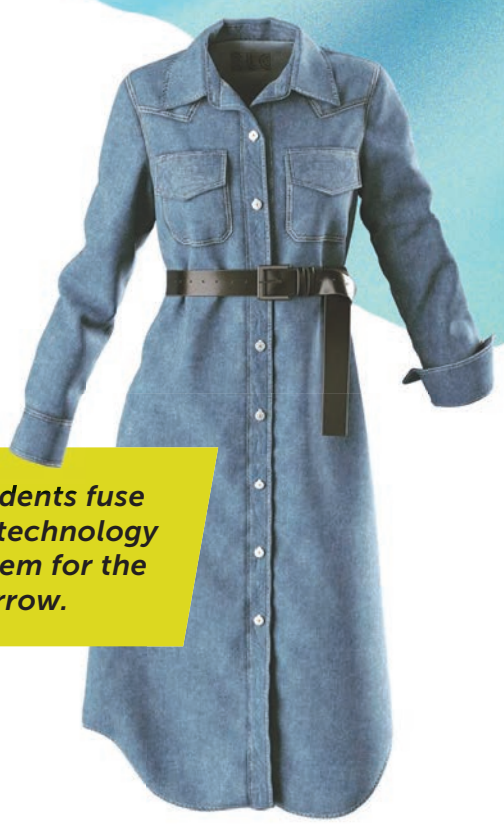
The toolkit, written with input from the Mantua community, helps people of all abilities turn empty lots into parks. The guide breaks down how to assess and acquire a lot; form a park committee; design the park; and build and maintain it. Through the efforts of Jefferson and the Mantua community, things are about to get greener.

TO READ MORE VISIT:
JEFFERSON.EDU/PARK

The Jefferson initiative helps to beautify neighborhoods across the city, and aims to make the template accessible across the country.

virtual FASHION

New design course embraces industry's future



Jefferson students fuse fashion with technology to prepare them for the jobs of tomorrow.

When the COVID-19 pandemic hit, the fashion world came to a standstill. Runway shows — the long-time lynchpin of the industry — went on an unsettling hiatus. Designers asked, how do I still present and sell my collection to my audience without them being physically able to touch the garment? The answer came by looking into technology, and another perhaps surprising industry — gaming.

The seismic shift caused by COVID-19 forced the fashion industry to adapt and evolve to survive. Thanks to new software, fashion designers can now create virtual pieces, such as dresses, shoes, suits and more. Thomas Jefferson University will embrace this trend with a new course in the spring semester called "3D Virtual Fashion Design."

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Specialized treatment and care put

FIREFIGHTER ON PATH TO RECOVERY

Volunteer firefighter Shawn Menear was trapped for 40 minutes in a burning home in Central Pennsylvania. What came after he survived is a remarkable journey of healing and support.

Shawn Menear found himself in a firefighter's worst nightmare. The 43-year-old volunteer firefighter was on the first floor of a burning home when he heard fellow firefighters call out a mayday. The second floor above Shawn was starting to collapse. Before he could react, the chimney fell and pinned him to the floor. It took 40 minutes to get him out.

Shawn was flown to Jefferson Health's Burn Center at Thomas Jefferson University Hospital, an accredited Level I Regional Resource Trauma Center. He needed immediate treatment for severe burns on his legs and lower torso, including removing dead tissue and applying grafts of healthy skin from his left leg — while preventing infection and controlling the pain.

Having spent almost nine weeks recuperating at Jefferson's Burn Center, Shawn was transferred to Magee Rehabilitation Hospital. There a multidisciplinary team of doctors, therapists, nurses and wound care specialists created an individualized rehab plan designed to improve Shawn's strength and mobility, while protecting healing wounds and preventing new ones from occurring. Magee specialists helped him learn how to walk again and strengthen his upper body to ensure that when he was discharged, he would confidently live independently.

On the day of Shawn's inpatient discharge, firefighters, family and neighbors gathered outside to celebrate his recovery. Then the long line of fire trucks fired up their engines to escort Shawn and his family on the 90-minute drive back to Central Pennsylvania.

Four months following his discharge, Shawn continues to make progress with his recovery. He undergoes physical rehab three times a week locally and is now able to walk with a cane and without assistance.

> "You really get to know people when you go through something like this. The community has been behind me 100%."
>
> Shawn Menear

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JEFFERSONHEALTH.ORG/SHAWN

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OVERCOMING EPILEPSY CHALLENGES THROUGH MARTIAL ARTS

Jessie Lentz recently celebrated two years seizure-free and reflects on how martial arts has helped her overcome the challenges of living with epilepsy.

On 2011, Jessie Lentz, an emergency technician, experienced an epileptic seizure lasting more than five minutes, known as a status epilepticus. Diagnosed with epilepsy in 2005, Jessie had never experienced anything like this.

Neurologist, Michael Sperling, MD, director of Jefferson's Comprehensive Epilepsy Center, recommended a surgical evaluation, as Jessie's medication was not controlling her seizures. Testing showed Jessie was a good candidate and she underwent surgery, led by neurosurgeon Ashwini Sharan, MD, to remove part of the temporal lobe of her brain.

As Jessie recovered, she challenged herself to try martial arts to learn how to defend herself and get in better shape. For years, her seizures were controlled and she excelled in Tang Soo Do. But later, Jessie experienced a grand mal seizure which induces muscles to stiffen and causes loss of consciousness and muscle spasms. An MRI later revealed that she had also suffered a massive stroke. Jessie was weak on her left side and had a limp. She would experience more seizures.

Dr. Sperling advised Jessie to have additional surgery, as her quality of life began slipping away. She underwent mapping of the brain to identify the source of her seizures, and another resection surgery was performed to remove an additional portion of her temporal lobe. Jessie gradually regained her strength and was able to resume everyday activities, including returning to work and eventually resuming her martial arts training.

Today, Jessie has her third-degree belt in Tang Soo Do, and is two years seizure-free. While epilepsy has been a major part of her life, Jessie is determined not to let it define her.

> **"I have a tattoo on my arm that says, 'I was only given this life because I am strong enough to live it,' and they are the words I live by. Yes, I may have epilepsy but it doesn't have me."**
>
> Jessie Lentz

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PROSTHETIC DESIGN HELPS SURFERS

CATCH A WAVE

Two Jefferson industrial design students create a low-cost, waterproof prosthetic that increases ankle mobility and grip for adaptive surfers.

A near fatal accident cost a surfer his leg and his hobby, until two Thomas Jefferson University industrial design students decided to help. Many traditional prosthetics lack the range of motion, pop-up flexibility and grip needed for surfing. Plus, sand and salt water can be corrosive, and insurance often doesn't cover waterproof devices. Created with materials intended for the ocean, the student-designed Swell Surf Foot prosthetic also can be easily adjusted at the beach, allowing surfers to fine-tune the device. Importantly, Swell could sell for just $500 to $600, a relatively affordable price point in the world of prosthetics.

The product was developed by students Zachary Samalonis and Yuhan Zhang as part of their Capstone project, which culminates their studies at the University. They took home high profile awards for their design. They won first place in the sports and recreation student category from the Core77 Design Awards competition. This prestigious competition honors excellence across the design field, with other winners coming from industry heavyweights like Microsoft, Google and Johnson & Johnson. And they earned gold in the student category

for the Industrial Designers Society of America's International Design Excellence Award (IDEA). Apple's original iPhone, Tesla's Model S and the Oculus Rift are three past IDEA winners.

Zachary and Yuhan graduated in 2020 and credit Jefferson for preparing them for their future endeavors. Today, they continue their work with amputees to get prototype feedback that will inform their next design.

> **"At Jefferson, I learned every part of creating a project – the marketing, the research and the business side. I feel like I can start a company by myself with all these skills."**
>
> Yuhan Zhang

TO READ MORE VISIT:
JEFFERSON.EDU/PROSTHETIC

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