President Biden announces up to nearly $23 million for Tulane to develop revolutionary cancer ‘moonshot’ project

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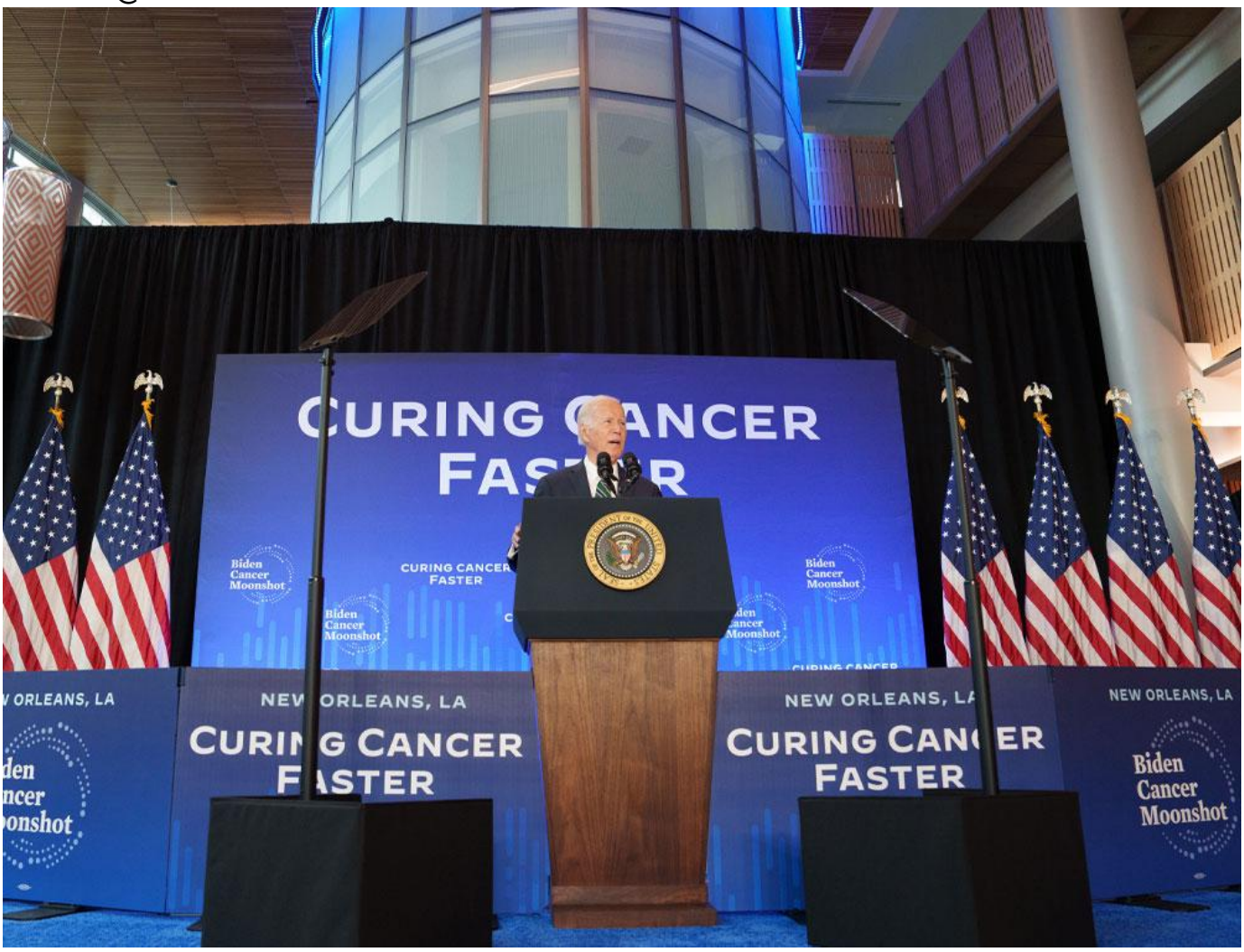

On Tuesday, President Joseph R. Biden Jr. announced that Tulane was awarded up to nearly $23 million in funding to create a machine-learning-assisted imaging system capable of identifying even the tiniest remnant of cancer during surgery. The announcement took place at the Goldring-Woldenberg Business Complex on Tulane’s uptown campus. (Photo by Kenny Lass)

President Joseph R. Biden Jr. and First Lady Dr. Jill Biden visited Tulane University Tuesday to celebrate a project that promises to bring a new kind of magic to the world of cancer treatment — a groundbreaking initiative that could save lives by dramatically enhancing the ability of surgeons to remove cancer from the body.

Tulane President Michael A. Fitts kicked off Tuesday's ceremony, introducing the Bidens as "relentless champions in the battle to end cancer."

"You have inspired and empowered the research community to take risks that can produce transformative changes in cancer research and care," Fitts said.

He joined the Bidens and Quincy Brown, PhD, Tulane associate professor of biomedical engineering and leader of MAGIC-SCAN, a new Tulane project that aims to create a machine-learning-assisted imaging system capable of identifying even the tiniest remnant of cancer during surgery. The project is one of eight included in a $150 million funding initiative announced Tuesday to develop novel technologies that will allow surgeons to remove cancerous tumors with higher accuracy. If successful, these technologies will revolutionize surgeries, dramatically reducing rates of repeat procedures.

Tulane's portion of the Biden Cancer Moonshot project will be funded with an award of up to $22.9 million from the bipartisan Advanced Research Projects Agency for Health, also known as ARPA-H, a federal funding agency established by the Biden Administration in 2022 to rapidly advance high-potential, high-impact biomedical research.

Biden, whose son Beau died of brain cancer in 2015, announced the award at a ceremony in the Marshall Family Commons, an expansive atrium on the ground floor the Goldring-Woldenberg Business Complex on Tulane's uptown campus. A sign emblazoned with the words "Curing Cancer Faster" served as a backdrop along with eight American flags.

"We believe anything is possible in America," said Biden, whose daughter Ashley graduated from Tulane. "Anything we set our minds to is possible. We are the land of possibilities. That's who we are. And that's what you're doing here at Tulane."

Biden's words drew loud applause and cheers from the audience, which consisted of Tulane leaders along with researchers and administrators from the School of Science

and Engineering and the School of Medicine. Other attendees included former Louisiana Governor John Bel Edwards, New Orleans Mayor LaToya Cantrell, former Mayor Mitch Landrieu, New Orleans City Council President Helena Moreno, Cedric Richmond, a former senior advisor to Biden, former U.S. Senators John Breaux and Mary Landrieu, Shalanda Young, director of the Office of Management and Budget, and Renee Wegrzyn, director of the ARPA-H.

The project is co-led by Brian Summa, PhD, associate professor of computer science. Both Brown and Summa are also affiliated with the Tulane Cancer Center. Over the next five years, the two will create an imaging system that will give doctors the ability to scan a tumor during surgery and determine within minutes whether any cancer tissue has been left behind.

Before their remarks, the Bidens met privately with Fitts, Brown, Summa and other researchers for a demonstration on how the system would work. Biden said he was amazed at what he observed.

“It’s incredible,” he said. “It’s a roadmap doctors can follow during surgery; unlike anything they’ve seen before. It's a promising step to reduce the need for follow-up surgeries and improve treatments. We’re moving quickly because we know all families touched by cancer are on a race against time.”

First Lady Dr. Jill Biden said the death of Beau moved the couple to turn their pain into purpose. “And as president, Joe has brought his own relentless optimism to the Biden Cancer Moonshot to end cancer as we know it. It's ambitious, but it's also within our reach. Maybe not yet, but one day soon, very soon, because of the people in this room, including Dr. Quincy Brown.”

The award will enable researchers to overcome the technical computing and engineering challenges to make such a device a reality within five years. Receiving the full award will require the team to reach certain milestones in their work.

“Together, we will be tirelessly working to transform cancer surgery as we know it, for every American,” Brown said. “Many of us know either personally, or through a friend or family member, the fear and anxiety that precedes a cancer surgery, wondering will the surgeon be able to remove all of the tumor? It is a hard job, one which is made harder by the fact that there are no good technologies that can help them to determine whether the surgery has been successful until days later, when it is too late to change the surgery.”

Brown said often that patients have to return for a another potentially harmful surgery, extending the anxiety of the cancer coming back.

MAGIC-SCAN is an acronym for Machine-learning Assisted Gigantic Image Cancer margin SCANner. It would be one of the world's fastest high-resolution tissues scanners, capable of detecting residual cancer cells on the surface of removed organs within minutes. The system would be trained on thousands of clinical scans so that it can accurately highlight cancer at cellular level as it renders a highly detailed 3D map of the surface of the tumor.

Tulane researchers have already been working on developing this technology using prostate and colorectal cancer patients – two of the most difficult kinds of tumors to remove – and they've managed to get the detection time down to about 45 minutes.

Collaborating with Tulane will be researchers from the University of Georgia and the University of Utah. Clinical validation of the device will be accomplished with partners at Cedars-Sinai Medical Center in Los Angeles, Southeast Louisiana Veterans Hospital and East Jefferson General Hospital.

The Tulane-spinout company Instapath Inc. will help the team develop FDA-compliant versions of the new scanner. The project is part of a broader initiative by ARPA-H to develop Precision Surgical Interventions (PSI) that improve surgical accuracy and reduce errors.

News of the ARPA-H award arrives as Tulane is experiencing unprecedented momentum in every dimension of university life – including record-breaking research funding, historic levels of interest from the nation's top students and a once-in-a-generation physical expansion, especially on its downtown campus. A report announced last week revealed that through its current momentum Tulane has become an economic and community powerhouse for New Orleans and Louisiana, making an annual $5.2 billion impact on the state's economy.