A New Home For Scientific Research

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|
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The Steven and Jann Paul Hall of Science and Engineering will connect students, scientists and entrepreneurs in pioneering research and interdisciplinary learning.

In the midst of a cold snap in January 2024, the future of Tulane discovery — the Steven and Jann Paul Hall of Science and Engineering — came to life.

The new state-of-the-art building on Tulane's uptown campus stands five stories tall and has 76,000 square feet of laboratories, classrooms and collaborative spaces for faculty, staff and students. It is located on the Academic Quad between Stanley Thomas Hall and Donna and Paul Flower Hall, at the heart of the uptown campus's science district.

“Paul Hall is one of the most ambitious and significant expansions in Tulane’s history,” said President Michael A. Fitts. “It is a place where students, scientists and entrepreneurs will join together in pioneering research, in interdisciplinary learning and in making discoveries that can then be brought to the marketplace faster and improve lives worldwide.”

Construction on the building began in 2020 after a lead gift of $10 million from Tulane graduates Steven and Jann Paul. In making the gift, the couple said Tulane’s creative and curious science and engineering students deserve the best resources possible. Steven Paul is a graduate of the Tulane College of Arts and Sciences (’72) and the School of Medicine (’75). He is a physician-neuroscientist and entrepreneur whose career has spanned both academia and industry. Jann Paul is a graduate of the Tulane School of Social Work (’72).

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Michael A. Fitts, President of Tulane University

Standing five stories tall with 76,000 square feet of laboratories, classrooms and collaborative spaces, Paul Hall opened to students and faculty in January 2024.

Interdisciplinary Spaces

The spaces in Paul Hall include an auditorium with over 200 seats, connecting bridges to Flower Hall on three floors, an animal research facility, core facilities where researchers can share services and equipment, student gathering areas and a top floor with critical mechanical and electronic equipment. Rain gardens on either side of the building are designed to collect rainwater and mitigate flooding.

“This building was designed to support path-breaking, multidisciplinary research and innovative, engaged teaching and is an exciting and inspiring embodiment of our ambitious vision for the future of the sciences and engineering at Tulane,” said Robin Forman, senior vice president for academic affairs and provost.

The modular lab benches, shelves and drawers can be moved around the labs as research needs change.

Paul Hall is home to researchers in physics and engineering physics, computer science, psychology, cell and molecular biology and many other fields.

In addition to setting the scene for rigorous studies in biomedicine, materials science, engineering and numerous fields of science, Paul Hall will give students and faculty the opportunity to learn the complexities of technology transfer and intellectual property, as well as the tools to help their innovations succeed. The Scot Ackerman MakerSpace next door will allow for researchers to quickly develop and test prototypes. The MakerSpace is a design and construction space that contains

equipment like 3D printers and laser cutters and is available to trained members of the Tulane community.

The interdisciplinary labs on the second, third and fourth floors have large windows where passers-by can look in on the research taking place. The labs are designed with longevity and flexibility in mind. The lab benches, shelves and drawers are modular and able to be moved around the lab as needs change. Electrical outlets and other utilities hang from the ceiling so that equipment placement is not beholden to the location of the nearest wall socket. This will allow researchers to adapt the labs to best suit their research and their teams for years to come.

Settling Into a New Home

Faculty, staff and students are already making Paul Hall their home. Lab notebooks and colorful decorations are sprinkled across the desks of graduate students. Research posters line the hallways. Family photos grin out from faculty offices, sitting on bookshelves with textbooks and awards.

Researchers with the Tulane Brain Institute have new labs and offices on the second floor, which has a walkway connecting to Flower Hall, where other Brain Institute labs and researchers have been housed since its opening in 2018. The Brain Institute is a university-wide transdisciplinary entity that covers neuroscience-related research, including cell and molecular biology, psychology and biomedical engineering. The new labs are an extension of those in Flower, allowing for easier, freer collaboration between researchers.

“What it’s going to let us do is bring together investigators who are working in the Brain Institute into one location, and I think that is going to be very valuable for the sort of collaborative research which is the goal of the Brain Institute,” said Matthew Dalva, presidential chair, director of the Brain Institute and professor of cell and molecular biology.

“The best science is done in those conversations in the hallway and shared space,” said Jill Daniel, the Gary P. Dohanich Professor in Brain Science and professor of psychology, whose lab is now in Paul Hall. “When you have a lot of people using the same space, it elevates the equipment you can have and the kind of research you can do.”

Students are also starting to embrace the space as a natural extension of their studies and life at Tulane.

First year students Arieana Talavera and Lauren Dion are taking advantage of the new spaces. “I like this space, it’s cool,” said Talavera, who studies biomedical engineering, as she gestured to the kitchenette and tables where the two were sitting. “I like to come in here to study.”

“Yeah, I always come to study and work here now,” added Dion, who studies chemical engineering.

“I haven’t used any of the labs yet,” said neuroscience junior Annabelle Shapiro, “but everything is really nice. It’s a good space for School of Science and Engineering students.” She has started using the communal areas as study spaces and has a class in the auditorium on the first floor.

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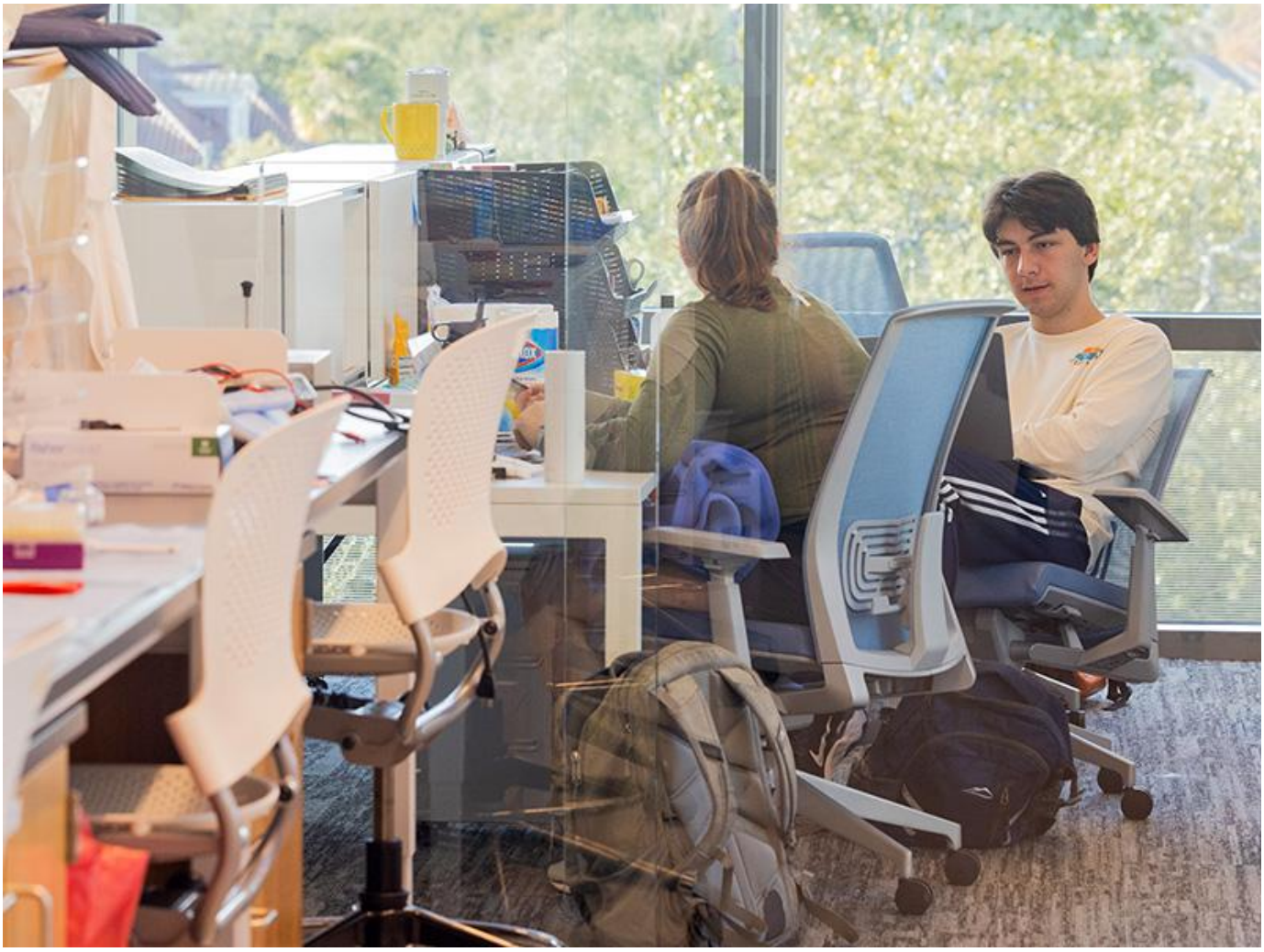

On the second, third and fourth floors, graduate and postdoctorate researchers across disciplines have dedicated spaces to work.

The first floor has space for students to gather, study and collaborate.

Cleanroom for Nanotechnology

One of the facilities that will soon open in Paul Hall is a state-of-the-art cleanroom, thanks to $5 million in state and federal funding. Cleanrooms are used for delicate research and manufacturing, such as nanofabrication, the manufacture of structures on the scale of nanometers, tens of thousands of times smaller than the width of a human hair. This cleanroom is part of the statewide Core User Facilities network of advanced manufacturing and metrology centers. It is on the first floor of the building and will be available to researchers at Tulane, Xavier University, the University of New Orleans and others, with the goal of promoting rapid development of existing regional research collaborations.

“The new facility will enable us to do everything we do now but better,” said Matthew Escarra, an associate professor in physics and engineering physics at

Tulane, where he also serves as faculty director of the nanofabrication facility. “It will make it so much easier to get good yield, reliable results and project success, higher quality thin film deposition, better nanoscale fabrication and improved ability to measure materials and devices that our researchers are fabricating.”

Once the new cleanroom is complete, the current cleanrooms in Stanley Thomas Hall and Stern Hall will be combined into the new facility.

There is another cleanroom on the third floor of Paul Hall that will be used as an annex for additional equipment. The third floor is in part home to researchers in physics and engineering physics. Also on the third floor is a packaging lab, which will provide support for packaging and integrating the semiconductors and other related devices that researchers develop into more complex systems.

Steven Paul said he looks forward to the interdisciplinary research that will come with bringing together multiple disciplines under the same roof.

Psychology professor Jill Daniel said sharing a space with many other researchers, faculty and staff can elevate the kind of research you can conduct.

Looking Back to Look Forward

In providing the lead gift, Steven Paul cited his experience as an undergraduate working in the laboratory of Tulane professor Merle Mizell in Dinwiddie Hall.

“I look back at those days and see the foundations for my own career, and I want to contribute to similar formative experiences of other Tulane students,” said Paul. “If the last 50 years have taught us anything, it’s that the greatest advances happen at the interface of scientific disciplines.”

He added, “It is our hope that the new science and engineering building fosters this kind of interdisciplinary science by bringing together multiple scientific disciplines under the same roof. We also hope that it creates opportunities for many more young undergraduate students to conduct research under the mentorship of Tulane’s extraordinary faculty, just as I did.”

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Steven Paul, Tulane graduate, physician-neuroscientist and entrepreneur

Kimberly Foster, dean of the School of Science and Engineering (SSE), expressed her gratitude for the Pauls’ generosity that has led to this new home for SSE students, faculty and staff. “A facility such as this is vital in attracting the best students and researchers and empowering them to build the future and make the discoveries of tomorrow,” she said.

Located between Stanley Thomas Hall and Donna and Paul Flower Hall, Paul Hall overlooks the Academic Quad on the uptown campus.