

AS A MASTER'S STUDENT, CHENGJIE XI (AT RIGHT) COLLABORATED ON RESEARCH WITH BROWN NEUROSCIENCE PROFESSOR JUSTIN FALLON.

# Master's Students: Essential to Research

By Debra Bradley Ruder '80

Master's degree students expand Brown's research capacity by creating new scholarship and contributing to faculty-led projects across fields.

In the laboratory of Brown neuroscience professor Justin Fallon, Chengjie Xi '24 Sc.M. has conducted groundbreaking experiments on a signaling pathway that regulates the birth of new neurons in the adult brain. The research holds promise for developing drugs to treat Alzheimer's disease, depression and other neurological conditions. Xi, a standout master's student and now the Fallon Lab manager, presented her discoveries at an international conference and co-authored scientific papers emerging from the lab.

"I chose Brown's biotechnology master's program because it has a research thesis component, and I hoped to accumulate more

research experience for my career goal, to pursue a Ph.D. in the biomedical field or neuroscience," says Xi. "I love doing research. Hopefully, my work will contribute to the development of new treatments."

Master's degree students like Xi play an essential role in research and discovery at Brown, conducting high-impact studies across the life and physical sciences, social sciences, arts, and humanities that address urgent societal issues, from cancer to climate change. These students produce their own scholarship — master's theses, capstone projects, novels and more — and apply their skills to advance faculty-led research.

"Master's students are a critical part of Brown's research enterprise," says Marty Scholtz, deputy vice president for research. "Their dual role as new researchers and as contributors to ongoing research ensures that they are trained to build new knowledge and participate in the greater process of how knowledge helps improve our world. These are powerful experiences that draw and retain students, staff and faculty alike."

Brown has roughly 3,500 graduate students, including almost 1,700 pursuing master's in 30-plus academic fields such as engineering, data science, literary arts, urban education policy and public health, notes Joel Revill, deputy dean for academic and student affairs in the School of Professional Studies. The University also offers executive master's programs for working professionals in health care leadership, technology leadership, and management (MBA).

Students carry out research across many of these master's programs, which are taught in on-campus, online and hybrid formats.

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"Master's students bring academic learning to the 'real world' rapidly and effectively," Revill says. "The research they do at Brown informs how companies and nonprofits around the world conduct business. Master's students are one of the fastest routes for cutting-edge research to have an impact."

On campus, master's students expand Brown's research capacity through their scholarly projects and contributions to faculty research, observes Thomas A. Lewis, Graduate School dean and a professor of religious studies. "For many faculty, they are important interlocutors,

providing feedback on early ideas and pursuing experiments to test emerging hypotheses." Lewis says master's education is integral to Brown's current effort to aggressively grow its research and scholarship portfolio by investing in students, space, faculty, staff and support services.

## Wide-Ranging Research

The varied topics examined by Brown master's candidates last year included: the health effects of exposure to PFAS chemicals; gendered activism in the Middle East; the impact of urban heat islands; systems for prioritizing emergency shelter bed placements; reproductive health care delivery; ovarian cancer growth; stretchable films for high-performance gloves; union organizing; artificial intelligence for sleep apnea detection; and the benefits of early Head Start, plus many more.

One master's student, in technology leadership, developed an innovative approach for improving care for people with autoimmune diseases, which affect millions of Americans. Another, in public health, investigated hearing loss among truck drivers in California. A third, in physics, earned accolades for his cutting-edge research on spin-based electronics.

While pursuing her master of public affairs degree at Brown last year, Jessica Saenz Gomez '23, '24 MPA, joined a research team studying the impact of U.S. state election laws on voter turnout in the 2022 midterm elections. Saenz Gomez, who had previously worked on Latinx voter outreach in Arizona, embraced the chance to collaborate with faculty, students and staff at Brown's Watson Institute for International and Public Affairs, which hosts the MPA program.

"This opportunity allowed me to deeply analyze and understand the intricate ways in which the state's voting regulations intersect with and potentially disenfranchise underserved communities," Saenz Gomez said in a Watson Institute article. She is now applying her skills at Brown's Swearer Center, overseeing a fellowship program that promotes student engagement with Providence and Rhode Island communities.

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