

# STUDENT ROUNDS

## Intentionally Involved

NICHOLAS BRENNAN BALANCES CUTTING-EDGE RESEARCH AND MEDICAL STUDY WITH STUDENT LEADERSHIP TO BENEFIT HIS CAMPUS COMMUNITY.

It's been a big year for Nicholas Brennan. An MD/PhD candidate, Brennan is in his seventh year at Upstate, currently completing his doctorate in the Department of Biochemistry and Molecular Biology. His dissertation investigates a novel, bioenergetic-independent mechanism of mitochondria-induced muscle atrophy during aging.

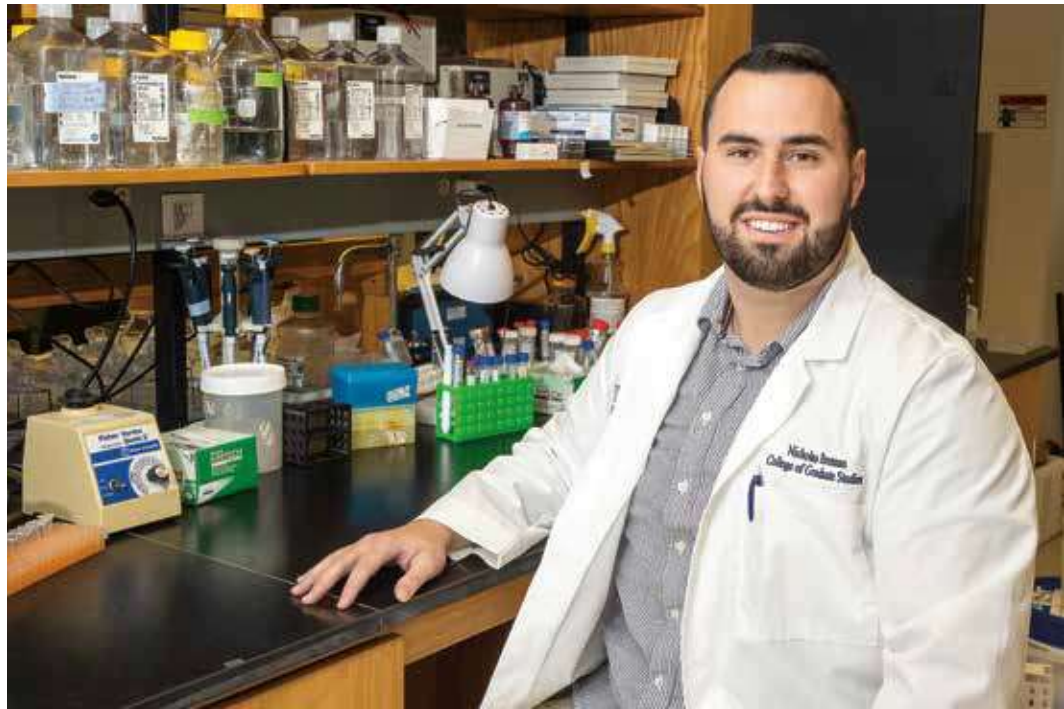
It's research that potentially could have important impact on healthy aging. In early fall 2023, Brennan was awarded the NIH Ruth L. Kirschstein National Research Service Award. The grant provides \$210,000 in funding from the National Institute on Aging over four years to support his doctoral research and tuition expenses.

Last spring, he was singled out for his research again, becoming one of 27 students selected for the 2024 SUNY Graduate Research Empowering and Accelerating Talent (GREAT) award. He was also honored by his undergraduate alma mater with the 2024 Emerging Leader Award from the SUNY Oneonta Alumni Association, given to graduates within the last 15 years that have demonstrated significant leadership to their profession and community.

This fall, Brennan was one of two doctoral students in the SUNY system to receive the prestigious SUNY ACT Annual Award for Excellence and Student Initiative Scholarship.

The scholarship rewards SUNY students for excellence in their academic performance and extraordinary commitment to their campus and community.

"I enjoy staying busy, and if I can do so while also benefiting my campus community and enhancing the student experi-



MD/PhD student Nicholas Brennan has been honored by SUNY for his scientific research, which investigates mitochondrial dysfunction and muscle loss, and for his contributions and initiative as a student leader.

ence, it's a win-win," says Brennan, who jumped into campus life as a first-year medical student in 2018.

He served as vice president of his medical school class, president of the Campus Activities Governing Board, and is currently serving his fourth term as president of Upstate Student Government (USG). He has been involved with USG for seven years, during which he hosted numerous campus-wide town hall meetings to identify student needs and collaborated with administrators and fellow student leaders to develop and implement practical solutions.

During his tenure, he helped imple-

ment a grocery store shuttle service to combat food insecurity among students and played a key role in establishing a program that has allocated over \$25,000 in conference travel funding for students. He is most proud of supporting an initiative led by medical students to provide affordable and accessible family planning resources through a vending machine on campus.

"Upstate became the first SUNY school to have one of these vending machines on campus," he says.

Brennan also serves on several university committees, including Admissions, the Student Learning

Outcomes Committee, Honorary Degree Committee, Distinguished Professor Committee and the Advisory Committee on Campus Safety. At the state level, he was elected to the SUNY Student Assembly Executive Committee and chaired the Doctoral Granting Institutions Graduate Caucus for two years.

All this while he's finishing his dissertation and preparing to defend it in early 2025.

Brennan says his passion for making an impact on his community began as an undergraduate at SUNY Oneonta. A chemistry major, he was a member of the student government executive committee, conducted undergraduate research, volunteered at Stony Brook University Hospital, and became trained as an EMT, volunteering over 800 hours. And he graduated magna cum laude.

After graduation, he spent two years conducting biomedical research at the NIH National Institute on Aging, where he investigated the clinical manifestations of mitochondrial dysfunction in the aging population. He'd already applied to medical school, but Brennan says the physician-scientists he worked with were instrumental in modeling the advantages of an MD/PhD program to integrate his interests in research and medicine.

Shortly after beginning medical school at Upstate, he applied and was able to transfer into Upstate's MD/PhD program.

Brennan works under the supervision of Xin Jie Chen, PhD, whose lab focuses on how mitochondrial damage causes cellular stress and affects cell fitness and organismal survival. It's a great fit.

Brennan's work at the NIA prior to medical school delved into understanding how mitochondrial dysfunction impacts

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aging muscle. Now, his dissertation investigates a unique form of mitochondrial stress and the mechanism by which this stress induces muscle wasting with age.

“Sarcopenia—age related muscle loss—is a complex process that is accompanied by morbidity and a loss of independence,” he says. “My hope is that one day this work will contribute to identifying a therapeutic target to treat muscle wasting in the setting of disease and normative aging.”

In October, Brennan traveled to Italy to present his research at a conference on skeletal muscle development, metabolism and repair sponsored by the European Molecular Biology Organization in Catania, Sicily. “I’ve previously showcased my research through poster presentations at international conferences, but this was my first time being selected for an oral presentation,” he says.

Brennan anticipates resuming his medical studies in March 2025. He looks forward to experiencing clinical rotations to help zero in on the best clinical fit. “I’m still exploring which clinical specialty I’ll pursue, but I know I want to run a research lab while continuing to treat patients,” he says.

He plans to apply to physician-scientist training programs with the goal of a career in academic medicine.

Meanwhile, he has more time to help enhance the student experience through Upstate Student Government. Brennan says one of the best things about his extracurricular involvement is developing role models outside of the lab and classroom. He counts Norton College of Medicine Dean Lawrence Chin, MD, Dean of Student Affairs Julie White, PhD, and Upstate President Mantosh Dewan, MD, among his mentors. Balancing extracurricular commitments with the rigorous demands of medical and graduate school can be challenging but Brennan says it has taught him valuable lessons in time management and prioritization.

“I’ve learned to be very intentional with my time. Academics have always been my priority, but the opportunity to contribute to the well-being of my peers and the larger community has been incredibly fulfilling, and it’s this sense of fulfilment that motivates me to stay engaged,” he says. “Ultimately, my involvement outside of academics provides me with diverse perspectives and experiences that I believe will make me a more compassionate and well-rounded physician-scientist.”