

New York Tech Researchers Secure Major Grants for Biomedical and Space Exploration Projects

February 5, 2025



New York Tech researchers have secured significant funding for a range of innovative projects spanning biomedicine, physics, and engineering. These projects, totaling \$1,473,706, will not only advance scientific knowledge but also provide valuable research and mentorship opportunities for students.

“Aligned with New York Tech’s strategic goal of achieving R2 status, the Office of Sponsored Programs and Research remains committed to providing faculty with the necessary support to develop and manage successful research proposals,” says Vice Provost for Research Jared Littman, Ph.D. “We congratulate these researchers on their outstanding achievements and look forward to supporting the scholarly community on additional projects that contribute to the institution’s growing research enterprise.”

Improving Quality of Life for Spinal Cord Injury Patients

A groundbreaking study led by Research Associate Professor of Biological and Chemical Sciences Hesham Tawfeek, MBBCh, is set to receive a three-year grant of \$1,053,315 from the Department of Defense. This research aims to investigate new treatment options for individuals living with spinal cord injury (SCI).

SCI, often caused by traumatic events such as accidents, can result in severe lower limb paralysis, leading to significant bone loss. This bone loss, which can exceed 41% within the first year, significantly increases the risk of fractures and limits the effectiveness of mobility aids.

Dr. Tawfeek’s research will focus on understanding the molecular mechanisms that contribute to bone loss in SCI patients. By investigating the role of the sympathetic nervous system and its impact on immune function, the research team aims to identify potential therapeutic targets, such as immune and sympathetic modulator medications, to prevent bone loss and improve the quality of life for individuals living with SCI.

Advancing Space Exploration with Innovative Optical Technologies

Two NASA MOSAICS (Mentoring and Opportunities in STEM with Academic Institutions for Community Success) grants have been awarded to New York Tech researchers, supporting projects that will advance space exploration.

Professor of Physics Ben Ovryn, Ph.D., has received funding for his project, “Pathways from Undergraduate

Research to the Habitable Worlds Observatory.” This project will explore optical engineering challenges associated with the Habitable Worlds Observatory, a telescope designed to search for signs of life on exoplanets.

Associate Professor of Mechanical Engineering James Scire, Ph.D., has also received funding for his project, “Point-Diffraction Interferometer for Digital Holography.” This research aims to develop a new optical system to study acoustic levitation and other fluid mechanics phenomena, with potential applications for future space missions.

These projects not only contribute to significant scientific advancements but also provide valuable research and mentorship opportunities for undergraduate and graduate students at New York Tech.