

SUSTAINING MEMBER

UNIVERSITY OF SOUTH FLORIDA

Veterans' Champion and Pioneer in Regenerative Medicine, NAI Fellow Niketa Patel is Transforming Treatments for Devastating Disease and Injury

Diabetes, traumatic brain injury and Alzheimer's disease remain among the top global health issues of our time. Niketa Patel, Ph.D. has made major discoveries advancing understanding of the causes of these diseases and developed innovative compounds and methods to improve both their prognosis and diagnosis. Her seminal research has also advanced the understanding of military exposures and chronic diseases in Veterans including diabetes, obesity, and neurodegenerative diseases—especially innovative methods to develop RNA-targeting compounds for diagnosis and management of diabetes and Alzheimer's disease.

A professor in the Department of Molecular Medicine at the University of South Florida Morsani College of Medicine, and simultaneously Research Career Scientist at the James A. Haley Veterans Hospital (JAHVH), Tampa, Florida, Dr. Patel is a leader in the field of cellular and molecular mechanisms of neurodegenerative and metabolic disease. She was among the first to demonstrate that insulin regulates pre-mRNA (Messenger RNA) alternative splicing—a key signaling pathway between the body's DNA genome code and individual cells, especially for developing the proteins that are the building blocks of life. The discovery that alternative splicing can be regulated by a hormone established a paradigm shift in the field, opening broad new avenues for prevention and treatment of a host of diseases, including type 2 diabetes – a silent killer.

Additionally, as a multiple-award-winning Research Career Scientist at the JAHVH, she has applied her research to help improve Veterans' quality of life, especially in wound healing and brain repair after traumatic brain injury. For example, she demonstrated that exosomes from adult human adipose-derived stem cells can be used for treatment of traumatic brain injury and open wounds. This innovation is among her current 13 U.S. Patents, nine of which are parent/priority, representing breakthrough patents in the field.

Dr. Patel has also dedicated her life and her career to mentoring others, inspired by her father. "He was a pharmacist and an early industry developer of the disposable diaper in the U.S., and I always wanted to be able to be as innovative and inventive as he was," she recalls. "When I asked him if he thought I could be an inventor too, and have many patents, he told me, 'All you need is the passion to do it, and you can do anything.' I try to pass on that message and encouragement to others to help them on their own innovation journeys."

For example, Dr. Patel serves as a research mentor for medical students in the distinguished SELECT Program, MD, at USF. She is a founding member and past chair of the Mentor Program at JAHVH Research Service, promoting research and innovation in clinicians, residents, and hospital staff along with translational scientists. The JAHVH's mentoring program provides the framework and support infrastructure to promote early-career investigators. She also works to integrate U.S. Veterans into research and advance their independent careers in science.

She is actively engaged in the research culture at USF at every level, encouraging and mentoring students in their research endeavors. She served as a judge for the USF Young Innovators Competition, the USF Undergraduate Research Symposia in the Genshaft Honors College, Post-doctoral Research Poster Competition, and the USF Health Annual Research Day. She also serves as a mentor in the Judy Genshaft Honors College. The post-doctoral researchers she has mentored in her lab have gone on to successful clinical and/or research careers.

Dr. Patel is a charter—and continuing—member of the NAI and the USF Chapter of the NAI. She is a longstanding member of the Executive Committee of the USF NAI Chapter (2016-present), and served as its President and Vice President, and is currently Member-at-Large. She was elected NAI Fellow in 2023.