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Biosketch

Darshan Trivedi, PhD(biochemistry/biophysics/physiology)

Dr. Darshan Trivedi is a Life Science Research Scientist in the Department of Biochemistry atStanford University. He received his B.S. in biotechnology (2005) and M.S. in biochemistry(2007) from India. He then earned his PhD in Physiology (2014) Pennsylvania State University. In 2015, he joined the laboratory of Dr. James Spudich at Stanford as a PostdoctoralFellow and was subsequently promoted to a Life Science Research Scientist in 2019.

Dr. Trivedi's research for his M.S. degree was on the structural and functional analysis of the protein ubiquitin. This was where herealized the immense potential of interdisciplinary research of biophysics and biochemistry, leading him to join a lab working on the biochemistry of myosin motors for his PhD research.Dr. Trivedi has spent more than a decade understanding the biochemistry and biophysics ofmyosin motors. For his PhD work at Pennsylvania State University, hestudied the mechanism by which the unconventional myosin, myosin V, transduces chemicalenergy into force production.Dr. Trivedi used myosin V as a model system to map communication pathways inthis highly allosteric molecule using fluorescence spectroscopy, transient kinetics, and otherbiophysical tools.

For his thesis project, Dr. Trivedi was awarded a two-year prestigiousAmerican Heart Association Pre-doctoral Fellowship. Dr. Trivedi has six important publications and two invited book chapters from hisgraduate research work on myosin motors. His PhD work resulted in 14 poster/oral presentationsat various conferences, including the Annual Biophysical Society Meetings where he hasconsistently presented his work as a lead author since 2009. He has also presented his work as aninvited oral session and as a poster at two Gordon Research Conferences.

In addition, Dr. Trivedihas received numerous awards and fellowships as part of his graduate career. He received theprestigious Student Research Achievement Award from the Biophysical Society for his graduatework, several awards from the Pennsylvania State University including an Alumni EndowedScholarship, and an award for outstanding performance by a PhD candidate. Notably, hereceived an endowed Graduate Fellowship as an outstanding recruit to the Pennsylvania StateUniversity Physiology program.

Dr. Trivedi was also selected as a student representative to be partof a scientific taskforce to address challenges in scientificfunding. He represented the academic setup and met withSenators and Representatives at thePennsylvania Capitol.

For his postdoctoral work, Dr. Trivedi continued his quest to understand myosin motors,now pivoting to applied research and focusing on the clinically relevant human beta cardiacmyosin. His work lead to two significant breakthroughs in understanding and treating hypertrophic cardiomyopathy (HCM). Soon after joining the Spudich lab, his work elucidatedthe molecular mechanism of cardiac hypercontractility typically seen in patients with HCM. Hiswork uncovered a critical, energy-conserving off-state of the beta cardiac myosin which isdisrupted

when HCM-causing mutations occur in the myosin molecule. These mutations causemyosin to adopt more of an on-state which constitutively generates force even when it is notrequired. This work opened an arena of novel research to therapeutically target this energyconserving state of myosin molecule in the heart to develop targeted inhibitors and activators.

Appropriately, his follow-up work included uncovering the mechanism of action of mavacamten,a small molecule cardiac inhibitor currently in phase III clinical trials by MyoKardiato treat HCM.Dr. Trivedialong with a team of researchers from two companies and four academic institutions discoveredthat at the molecular level, mavacamten shifts the equilibrium of the 'on-and off-state' myosinmotors, causing the mutated, constitutively 'on' myosin motors to adopt more of an 'off-state'.This leads to a reduction in contractility of the hypercontractile heart.

As a postdoctoral fellow, Dr. Trivedi haspublished seven manuscripts since 2015. He has received multiple research fellowships including a Postdoctoral Fellowship fromthe Lucile Packard Children Health Research Institute at Stanford University, and a two-yearAmerican Heart Association Postdoctoral Fellowship.

Dr. Trivedi has presented his postdoctoral research at multiple scientific forums. He was also selected to attend an intensive workshop on "Managing Sciencein the Biotechnology Industry" organized by the American Society for Cell Biology. Dr. Trivedihas received several awards during his tenure as a postdoctoral fellow at Stanford. Notably, hereceived the "Outstanding Research Award" twice at the Stanford Drug Discovery Symposiumin 2016 and 2018, was awarded the "Best Manuscript Award" from the Cardiovascular Institute atStanford University in 2019 for his work on mavacamten, and also received a YoungInvestigator Award by the European Muscle Society in Budapest, Hungary in 2018.

Besides research, Dr. Trivedi has actively assumed leadership and membership roles inseveral professional and social organizations. He served asa Founding President for Association of Indians at Hershey, an organization in PennsylvaniaState University raising funds to support social development and community projects in the USand India. He was on Pennsylvania State University's Dean's Council on Diversity, and arecipient of the Diversity Champions Award for fostering cultural diversity education oncampus. Most recently he was an organizing member of the Association of Industry-MindedStanford Professionals, and continues to be actively involved as a volunteer and project co-manager for the Association for India's Development, a non-profit organization working onsocial projects pertaining to, education, healthcare, women empowerment, social justice, andnatural resources conservation in India.