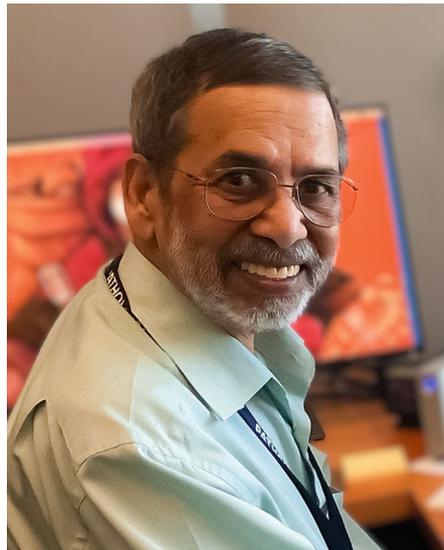


# Nilabh Shastri 1952–2021

**N**ilabh Shastri, a leader in the field of antigen processing and presentation, died 22 January 2021. Nilabh's passion to understand the molecular mechanisms underpinning immune surveillance led him to develop several methodologies that enabled breakthrough discoveries. These pioneer methods include the combined use of T cell hybridomas and chromatographic isolation of major histocompatibility complex (MHC) class-I-associated peptides to identify the amino acid sequences of antigenic peptides and the genes that encode these peptides. Nilabh also developed biochemical peptide modifications that permitted visualization of the intracellular conduit of ribosomes, heat shock proteins and enzymes that transform proteins into antigenic peptides for the T cell antigen receptor (TCR). Among Nilabh's most significant discoveries were the identification of unconventional ribosomes that generated antigenic peptides by performing "cryptic translation" and the discovery of ERAAP (endoplasmic reticulum aminopeptidase associated with antigen processing) and its role in shaping the MHC class I peptide repertoire.

Nilabh's extraordinary mentorship, teaching prowess and dedication to education were inspirational to many. Nilabh was humble and approachable, his humanity centered in his deep-hearted philosophy that education can be transformative and is an opportunity deserved by all. Nilabh saw the potential in people, a potential perhaps not yet realized by the individuals themselves. He made great efforts to connect with trainees and to support each by offering a rigorous round of scientific discussion. Nilabh's life is a testament to how one person can make a real difference, as we recount below.

**J.C.S.** Nilabh's lectures were legendary, and in recognition he received the University of California-Berkeley's Distinguished Teaching Award. As an undergraduate in the early 1990s, I was privileged to take his immunology course. At the time, I was a directionless Cal junior, intrigued by scientific research but unsure which aspect of biology I wanted to study. Nilabh's course cemented my decision to devote my career to understanding the immune system. I clearly recall hanging on his every word, as he made the Janeway textbook come alive for me—from Jenner's original



Credit: Photo courtesy of Amita Shastri

smallpox observations in milkmaids, to the latest understanding of MHC peptide presentation, to the challenges of designing a protective vaccine against pathogens like HIV. I credit him with driving my research interests during those formative years and providing much-needed inspiration and guidance. His legacy lives on in all of his trainees and colleagues each time we have the responsibility of teaching the next generation of scientists about the amazing aspects of the immune system.

**S.R.S.** Nilabh transformed my life. I was at the University of California-Berkeley working towards a PhD in the Energy and Resources Group. I had never particularly liked biology, but from an air pollution engineering course I became interested in asthma, so I enrolled in Nilabh's undergraduate immunology course. I was captivated. Nilabh's lucid explanations of how discoveries were made remain fresh in my mind to this day (for example, the TCR was identified using two assumptions: T cells are not B cells, and the receptor will rearrange). Nilabh learned the name and face of every student in that large introductory course. One day, I was sitting under a tree reading Kuby's textbook and Nilabh stopped to ask how things were going. This kind gesture gave me the courage to ask to volunteer in his lab. His answer changed my world. Nilabh was

patient as it inexplicably took me months to do my first large-scale DNA prep. He mentored his lab members to think and communicate clearly, to take no dogma for granted, to create whatever methods we needed to answer our questions, and to train an army of undergraduates. He made sure we remembered that science is done by people. Our weekly journal club began with a description of each author on the paper; while I don't miss researching the seventh author at 1 a.m. the morning before lab meeting, I will always miss Nilabh's fundamental kindness, sense of honor and duty, and endless support.

**G.E.H.** Nilabh Shastri gave me my first real community. My original community was one in which my skin color made me an outsider. I was told my skin looked like manure, that I was not as valuable as other people, and that black skin and academic excellence didn't go together. My Black and Latinx race was always a factor in how I was treated or accepted, and my start of graduate school in 2000 was no exception. However, my first meeting with Nilabh showed me that this did not have to be the case. He went out of his way to meet with me and discuss a lab rotation. I knew nothing of his work, and yet he wanted to engage this aspiring scientist. Nilabh's lab was a place of diversity with women, men, international, LGBTQIA and Latinx scientists. In Nilabh's lab I knew I was evaluated and rewarded on my merit. Nilabh and his lab became my community, a place where my race did not inherently make me an outsider. Nilabh taught me to relentlessly pursue scientific excellence and gave me the humility to realize that to be truly successful we must lift up the next generation of scientists. "Everyone," he told me, "must be trained. This is our most important responsibility." Nilabh's deep commitment to equal opportunity and access to training was why I experienced freedom to maximize my scientific potential. Many scientists today struggle against exclusion and racial or cultural bias in the lab, institution and scientific community. I am overwhelmingly thankful for Nilabh's mentorship and proud to instill his philosophies of scientific excellence, training and equality in the next generation.

Nilabh Shastri was a transformative scientist, educator, and mentor who will be missed by all. □

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