UC SANTA BARBARA

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For Pioneering Contributions

Sreenivasa Rao Jammalamadaka considers himself an “accidental statistician.” He finished high school just shy of 15 years old; however, in India, the engineering colleges required 17 years of study, so that wasn’t an option for him. But the renowned Indian Statistical Institute in Kolkata had just opened new degree programs in statistics. He enrolled and set out on a path that would see him become a gifted statistician.

Now, several decades later, Jammalamadaka, a distinguished professor in UC Santa Barbara’s Department of Statistics and Applied Probability, has earned a prestigious commendation: recognition from the Indian Society for Probability and Statistics (ISPS) “for his pioneering contributions to statistical theory and applications,” for which the society has presented him with the C.R. Rao Lifetime Achievement Award.

“I am very honored and pleased that the ISPS selected me for their highest honor, which is given only once every 3 to 5 years,” said Jammalamadaka. “Two aspects of this award strike me as very special. One, that it is for ‘lifetime achievement,’ for contributions over a sustained period of several decades. And secondly, that- it is named after my own teacher and mentor, Professor C.R. Rao, whose birth-centenary we are celebrating this year.”

Jammalamadaka joined UCSB in 1976. He is one of the faculty members who co-founded what would become the university’s Department of Statistics and Applied Probability, and served as its first chair from 1989 through 1993.

"We are very proud to have Sreenivas recognized with this lifetime achievement award," said Department Chair Mike Ludkovski. "Over his 43 years and counting at UCSB, he has been a major presence in the department and on campus. His important work in circular statistics and spacings has been internationally recognized with multiple awards, and he continues to engage in creative and wide-ranging research, and collaborate with colleagues around the world."

By his own accounts, Jammalamadaka's contributions to the field have been quite broad. "My publications include not just on statistical theory and methods, but collaborative publications in top journals in geology, biology, economics, etc."

However, he made a name for himself with his innovative techniques for approaching directional phenomena, which don't conform to traditional statistical methods, such as the arithmetic mean and variance.

"Answers to a dizzying array of scientific questions in many disciplines such as biology and medicine (biorhythms, ornithology, chronotherapy), geology (paleocurrents, paleomagnetism), and ecology (wind-direction), just to name a few topics, come from data which is in the form of directions in two, three and higher dimensions," Jammalamadaka explained.

Tackling these questions requires novel models and methods that are not part of standard statistics textbooks. Jammalamadaka has been a leading scholar in this particular area of directional statistics with close to 100 research publications, a highly cited text and a software package called CircStats written under his guidance by a former student. He even has his own statistical techniques named after him — Rao's Spacings test and Rao's Homogeneity tests — coined when he still went by the name J.S. Rao.

Jammalamadaka has applied his expertise to a variety of scientific questions, from studying the migration patterns of monarch butterflies to the topics of Earth's magnetic pole reversal. He's currently collaborating with researchers investigating how Optical Coherence Tomography data around the retina may shed light on glaucoma.

Over the course of his career, Jammalamadaka has mentored over 45 doctoral students, and was recognized in 2017 with the university's Outstanding Graduate Mentorship Award. According to him, the students are part of the reason for his eclectic work. "I tell my potential Ph.D. students to bring their own topics, and have

helped them in research on nearly 20 quite distinct topics in statistics and probability,” he said.

About UC Santa Barbara

The University of California, Santa Barbara is a leading research institution that also provides a comprehensive liberal arts learning experience. Our academic community of faculty, students, and staff is characterized by a culture of interdisciplinary collaboration that is responsive to the needs of our multicultural and global society. All of this takes place within a living and learning environment like no other, as we draw inspiration from the beauty and resources of our extraordinary location at the edge of the Pacific Ocean.