

## **Peddada honored by Indian statistical society**

*By Eddy Ball*

This winter, NIEHS biostatistician [Shyamal Peddada, Ph.D.](#), received a prestigious award from the Indian Society of Agricultural Statistics (ISAS).

During the 67th [ISAS](#)  
(<http://isas.org.in/>)

annual conference Dec. 18-20, 2013, at Banaras Hindu University in Varanasi, India, Peddada was awarded the 2013 Professor P.V. Sukhatme Gold Medal Award *in absentia* for significant contributions to the field of statistics or agricultural statistics. ISAS recognized Peddada's career-long work in statistical theory and methods, as well as his collaborative research in cell biology, environmental health, fibroid growth in women, the microbiome, and toxicology (see [text box](#)).

"This award is a testament to the impressive range of Shyamal's research," said Clarice Weinberg, Ph.D., head of the NIEHS Biostatistics Branch. "It also underscores his valuable contributions to interdisciplinary research in the environmental sciences."

### **Building on a grand tradition of (bio)statistics**

Peddada readily acknowledged the influence that some of the outstanding thinkers in 20th century statistics have had on his own work. He also expressed his gratitude for the intellectually stimulating environment at NIEHS.

"Each award that I've received is special in its own way," Peddada said, "and this one is special because it is named for an eminent statistician, P.V. Sukhatme, who made fundamental contributions to the field of survey sampling, which is widely used in the agricultural sciences, epidemiology, social sciences, and many other areas. Foundations for some commonly-encountered terms, such as stratified sampling, multistage sampling, double sampling, and nonsampling errors, are rooted in Sukhatme's publications in the 1930s to 1950s."

According to Peddada, statisticians, such as Sukhatme, developed a broadly applicable statistical methodology that is central to his own approach to scientific research. Peddada's training with one of the greatest statisticians of the 20th century, C.R. Rao, Ph.D., Sc.D., a fellow of the Royal Society and a member of the National Academy of Sciences, also helped shape his approaches to statistical theory, design of experiments, and the practice of statistics.

"Rao provided the foundations for various aspects of statistical theory and methodology as practiced today," Peddada said. "For example, virtually every textbook on the foundations of statistics contains Rao's fundamental theorems and methods."

"My research program in constrained, or order-restricted, inference is influenced by Rao's interest in solving scientific problems by exploiting all available information," Peddada explained. "Many scientific problems have implicit constraints or structure, and by making use of such constraints, we arrive at solutions that not only honor the underlying structure, but also result in a powerful methodology."

During his nearly fifteen-year career as a government scientist, Peddada has taken advantage of that powerful methodology to advance environmental science research, working with teams of NIEHS and NTP epidemiologists, statisticians, biologists, and toxicologists.



*Peddada credits NIEHS with helping his career flourish. "I think that it is a biostatistician's dream job to be working in a data-rich environment such as the one that we have here," he said. (Photo courtesy of Steve McCaw)*



*Peddada's award is named for Pandurang Vasudeo Sukhatme, Ph.D., D.Sc. (1911-1997), one of the leaders in the establishment of IASRI. In addition to his fundamental contributions to survey sampling, Sukhatme is recognized as a pioneer in the application of statistical methods in studying human nutrition. (Photo courtesy of Shyamal Peddada)*

## A distinguished career in academia and government

Peddada has received numerous awards for his professional accomplishments throughout his career, beginning with his selection as Junior Research Fellow by the Indian Agricultural Statistics Research Institute (IASRI), 1977-1979. He received the American Statistical Association (ASA) Outstanding Statistical Application Award in 1997, and was elected a fellow of ASA in 2005. He is also an elected member of the International Statistical Institute.

Prior to joining the NIEHS Biostatistics Branch in 2000, Peddada pursued a 17-year career in higher education that culminated in his tenured appointment as a full professor at the University of Virginia. Since 2004, he has also served as an adjunct full professor of biostatistics at the University of North Carolina at Chapel Hill, and is also currently an adjunct professor of statistics at North Carolina State University.

Over the past ten years, Peddada has served on the editorial boards for several leading journals, including the Journal of the American Statistical Association, Toxicologic Pathology, and PLOS ONE. He is the author of more than 100 peer-reviewed publications.

Peddada completed a Bachelor of Science degree with honors in mathematics at the University of Delhi, and a Master of Science at IASRI in New Delhi, India. He earned his Master of Arts and Ph.D. at the University of Pittsburgh, where National Medal of Science winner Rao was Peddada's dissertation advisor.

Rao completed his own dissertation work at Cambridge University under the direction of Sir Ronald Fisher, a pioneering thinker Peddada described as one of the greatest statisticians of all time.

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