

Dr. D. Samba Reddy



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Dr. Samba Reddy is an Associate Professor & Principal Investigator at Texas A&M University, a premier institution in the USA and the 10th largest university in the world. He is teaching advanced courses and directing a research program in new drug discovery and development. He holds a special assignment as a Chartered Member of the U.S. Govt. National Institutes of Health (NIH) Grant Review panel, one of the biggest scientific honors in the USA.

Despite being from humble background, he has excelled in every field and became one of the most successful pharmaceutical researchers in the world. He completed the Bachelor of Pharmacy degree (B.Pharm) in 1992 from Kakatiya University, Warangal, with distinction and university-wide top rank. He received six Gold Medals from the Andhra Pradesh Governor in 1992 for his academic excellence. He was the topper of the GATE exam in 1992. He did M.Pharm (1994) and Ph.D. degrees (1998) in Pharmacology from Panjab University working with Professor Kulkarni in Chandigarh. He served as Lecturer for two years at Panjab University. Dr. Reddy has received several awards in India such as IDMA Medal, Malhotra Award, Uvnas Award and Devi Research Prize.

Dr. Reddy went to USA for advanced research by winning a highly competitive fellowship. He completed 3-year post-doctoral training at the U.S. National Institutes of Health (NIH), a world premier institute for biomedical research. While working at NIH, he made several original scientific discoveries in the field of pharmacology. He developed “ganaxolone”, a new drug for epilepsy. Because of these accomplishments, he was honored with the NIH Fellows Award for Research Excellence in 2000. He got ASPET’s Young Scientist award in 2004 for innovative scientific discoveries in pharmacology. He completed clinical pharmacy training and received board certification as Registered Pharmacist (RPh) in USA. As an expert pharmacist, he participates in health affairs and lectures widely on clinical pharmacy topics.

Dr. Reddy worked as an Assistant Professor at North Carolina State University from 2002-2008. During this time, he was awarded with several major NIH grants worth several millions of dollars for conducting pharmaceutical research. In 2006, he received the prestigious Faculty Research Award by the Sigma Xi Scientific Society for his outstanding research on new antiepileptic drugs. In 2008, Dr. Reddy joined Texas A&M Health Science Center (TAMHSC) in the College of Medicine as an Associate Professor. He is the Principal Investigator of NIH-funded research projects on new drug development in epilepsy and brain disorders, and directs the epilepsy research lab at TAMHSC.

Dr. Reddy is an excellent writer and editor. He has published one-hundred (100) articles in international journals, and wrote several books that have been widely referred and cited in the field. He presented over 100 lectures and seminars at national and international meetings and institutions. For these excellent services, he was honored with the Distinguished Scientist Award in 2007 by the Association of Scientists of Indian Origin in America. He provides editorial services for over twenty pharmaceutical and biomedical journals. Dr. Reddy is the Editor-in-Chief, International Journal of Pharmaceutical Sciences and Nanotechnology, an open-access, peer-reviewed international research journal.

Dr. Reddy's motto is service to society. He works in an academic setting, contributes to health care, education, and actively participates in social services. He served as founding Treasurer of SVST Trust that built first Balaji Temple in Northern India in Chandigarh. He served as the President of Kakatiya University UCPS Pharma Alumni Association USA Chapter. Recently he and his friends established Kakatiya Foundation, a non-profit organization for the health and overall developmental opportunities. He has the rare distinction as the first young author of a widely acclaimed book "Pharmacy Quiz", published by PharmaMed press (a comprehensive book for GPAT and FPGE exams). Because of such extraordinary and sustained achievements, his name and biography was entered in the Who's Who of World Scientists.

Biomarkers in Preclinical and Clinical Drug Development

This seminar focuses on two key aspects of drug development: (i) current trends in drug discovery and development, and (ii) emerging trends in the business of biomarkers in drug development. New drugs are desperately needed for cancer, brain and life-style disorders. The number of new drugs approved by the FDA has declined substantially during the past few years, despite large increases in R&D investment for drug discovery and development. There is growing "pipeline syndrome" for new drugs, while success is very limited for "blockbuster" drugs

with sales over \$1 billion. The pharma industry in the US has been scaling back. Many pharma and biotech companies are changing how they fill their new drug pipelines, in recent years they have trimmed their early discovery efforts and focused their resources on processes further downstream. This reduced effort reflects rather a change in business model. There are new opportunities to address the current challenges in this field. Major obstacles can be successfully overcome by adapting a “mechanism-based” drug discovery that may reduce costs and accelerate drug development. Biomarkers represent key tools and parameters for the accelerated new drug discovery and clinical development. The completion of Human Genome project has resulted in identification of innovative targets for new drugs. This has led to the need for power-tools for rapid testing of new molecules in preclinical models and in large-scale clinical trials. The rapid emergence and evolution of translational medicine has pushed biomarkers into the spotlight for successful drug development, especially for the next generation therapeutics and diagnostics. Many big companies including Novartis, Hoffmann-La Roche, Pfizer, Bayer, and Bristol Myers-Squibb are fully integrating the biomarker strategies into their product pipelines. This trend clearly demonstrates that biomarkers have immense potential and future. It is estimated that the biomarker market may touch \$12.8 billion dollars by the year 2012. A thorough understanding of biomarker use and limitations is essential for staying abreast of evolving developments in drug development field. Novel technologies are used in biomarker discovery, and these approaches are helping in streamlining the development process by reducing time and costs, as well as minimizing drug attrition associated with safety issues. The path from biomarker discovery to commercialization is fraught with numerous obstacles. Biomarkers most commonly fail in the validation stage, but additional risks include analytical complications, regulatory hurdles, and commercialization challenges. In the United States, academic institutes and the NIH have been scaling up early drug discovery efforts. Armed with new ideas, targets and magnificent capabilities they are now able to take projects much beyond target identification and to identify compounds that “chemically validate” a target and thereby jump start the process of translational research. As new partnerships between academia and industry are established, institutes armed with high-throughput translational research are well placed to play a central role in the newly emerging model for drug discovery and biomarker research. (This work is **Supported by the U.S. NIH grants NS052158 & NS**).