

THE MECHANICAL PROGRAM PRESENTS

Art, Craft and Philosophy of Science

Dr. K. R. Rajagopal, Texas A&M University

Wednesday, May 20

12:00 p.m. – 1:00 p.m. lunch will be provided

TAMUQ – LH 143 / 1st Floor

Before one can develop an adequate theory to describe natural phenomena, it is imperative to understand the underpinnings of natural philosophy in particular and philosophy in general, have an appreciation for the history of natural philosophy, have great facility with the natural language for its expression; in the case of natural philosophy this being mathematics. But this alone is insufficient; one needs to understand the interplay between science, language, psychology, philosophy, politics, economics, and societal demands amongst many other subjects, as they all have an impact on the path science takes. One is interested in the development of a theory of sufficient generality; it ought not to merely explain a specific phenomenon, it should have predictive capability, be simple, be endowed with an economy of expression, lead to a consilience of induction, be capable of falsifiability, to name some of them. In this talk, I will discuss some of the features that go into the development of a scientific theory. Art, craft and philosophy all play a crucial role in the development of scientific theories.

K. R. Rajagopal is a Distinguished Professor, Regents Professor, holder of the Forsyth Chair in Mechanical Engineering, and holds a professorship in Mathematics, Biomedical Engineering, Civil Engineering, Chemical Engineering and is a Senior Research Scientist in the Texas Transportation Institute. He has won numerous awards including the Eringen Medal from the Society of Engineering Science, its highest award, Zable Medal from the International Technological Institute, Bush International Award for Research, the Memorial Medal from Charles University in Prague, Archie Higdon Award from the American Society of Engineering Education, Distinguished Visitor Award from the University of Auckland, Award of Excellence for Fluid Mechanics Research, etc. He is the editor-in-chief of the International Journal of Engineering Science and serves on the editorial board of 40 international archival journal and book series. He has published over 350 papers in archival journals and his research has been supported by the National Science Foundation, Office of Naval Research, Air Force Office of Scientific Research, AFRL, Army Research Office, NASA, National Institutes for Health, Department of Energy, Federal Highway Administration, Transportation Research Board, and numerous state agencies and industries.



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