

WCECS 2015 Keynote speech II:

How to conduct Interdisciplinary Research?

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Abstract

Interdisciplinary research has become the trend of the day. The question is how does one do interdisciplinary research? The basic steps in this process are: 1. Identify the Physical system being solved. 2. Create a proper mathematical model making relevant assumptions. 3. Solve the mathematical model based on principles of mathematics. The solution of mathematical model is the solution of the physical system. The physical system will vary from discipline to discipline. But, once a mathematical model is established, the underlying principles to solve it will be very similar. This keynote speech will expand these basic assumptions and apply it to various disciplines of Engineering, Economics, Political Science and Sociology including examples to tourism industry.

About Dr. Chandrasekhar Putcha

Dr. Chandrasekhar Putcha is a Professor in the Department of Civil and Environmental Engineering at California State University, Fullerton. He has been at this place since 1981. Before that he was on the research faculty at West Virginia University, Morgantown, WV and a post-doctoral fellow at University of Sherbrooke in Canada. His research areas of interest are –Reliability, Risk Analysis, Optimization and Mathematical Modeling. Because of his interdisciplinary areas of research, Dr. Putcha has published more than 150 research papers in various disciplines such as Engineering, Business, Economics, Medicine, Kinesiology, Political Science and Sociology. He has done consulting work for several leading companies and received research grants from companies such as Boeing, Northrop Grumman Corporation (NGC) and from federal agencies such as – NASA, Navy, Air Force, US Army Corps of Engineers.

Dr. Putcha received campus-wide Outstanding Professor award at California State University, Fullerton in 2007. He is the first recipient of this award from College of Engineering in 44 years since this award was instituted in 1963 at California State University, Fullerton.

He is also a Fellow of American Society of Civil Engineers (ASCE) and author of 4 books in the areas of Political Science, Sociology, Civil Engineering and Economics.

Dr. Putcha did his Ph.D. and M.S. in Civil Engineering from Indian Institute of Technology, Kanpur in 1975 and 1971 respectively and B.S. from IIT/BHU in 1969. He was the Head of Civil and Environmental Engineering Department at California State University, Fullerton (CSUF) from 1996-2002.