A Short Biography of Biswa Nath Datta

Biswa Nath Datta is a *Distinguished Research Professor* at Northern Illinois University. He is a Professor in the Mathematical Sciences Department and an adjunct professor in the Electrical and Mechanical Engineering Department at NIU. He has served as the Director of the *Applications Involvement Component (AIC)* of the Doctoral Program at NIU. He developed the current "Computational Mathematics" program and took a major active role in the development of the Mathematical Sciences Ph.D program at NIU.

Datta also held visiting professorship at the University of Illinois at Urbana-Champaign, Pennsylvania State University, Southern Illinois University, University of California at San Diego, State University of Campinas, Campinas, Brazil, as well as many other universities, research organizations, and industries around the world, including the Boeing Company and Wolfram Research Incorporation.

His research interests are interdisciplinary that blend numerical linear algebra and scientific computing (including large-scale and high performance computing) with control and vibration engineering. He research has produced computationally viable algorithms and high-quality engineering and scientific software packages (that did not previously exist) for scientific computing and electrical and vibration control systems design and analysis. He also pioneered the research in on large-scale and parallel computations in control. His current research involves development of computationally viable and mathematically-sound algorithms for "Active Vibration Control" and "Model Updating" of large vibration systems modeled by finite element techniques. The thrusts of this research are in its applications to real-life problems arising in vibration industries, including automobiles, buildings, bridges, highways, air and space crafts, and in mathematical justifications of many ad hoc industrial techniques which lack solid mathematical foundations.

Datta has authored more than 115 research papers, two books, *Numerical Methods for Linear Control Systems-Design and Analysis*, and *Numerical Linear Algebra and Applications*, and several software packages, including MATLAB-based toolboxes, *MATCONTROL*, *MATCOM*, and MATHEMATICA-based Advanced Numerical Methods. These packages are routinely used for classroom instructions, and academic and industrial research and developments.

His research has been supported by NSF, the Air force Office of Scientific Research, US Department of Education, the Office of Naval Research (Japan), the Boeing Company, Wolfram Research Incorporation and numerous overseas funding agencies.

In recognition of his research contributions, he has received several prestigious honors and awards. These included, election to *IEEE Fellow* in 2000, induction as an *Academician* of the Academy of Nonlinear Sciences (Russia) in 2002, *Senior Fulbright Specialist Award* in 2006 and 2009, and several IEEE Plaques and Medals of Honor. He is an *IEEE Distinguished Lecturer* and also has been honored by several IEEE sponsored conferences.

Datta was honored in an IEEE honoring ceremony held during the banquet of the *International Workshop on Numerical Linear Algebra in Signals, Systems and Control*, at Indian Institute of Technology, Kharagpur, India, 2007 and was awarded a *Medal of honor* at a special honoring ceremony held at the *First International Conference on Power, Control, and Signals (EPSCICON,10)*, Thrissur, India, January, 2010. He was also recognized for his *contributions to mathematics and computational mathematics* by the world's leading linear and numerical linear algebraists during the banquet of the *international Conference on Linear and Numerical Linear Algebra : Theory, Methods and Applications*, August, 2009, held at Northern Illinois University.

Datta has served on the editorial board of premier mathematics journals in his areas of expertise, such as *SIAM J. Matrix Analysis and Applications* and *Linear Algebra and its Applications* (Special

Editor) and is currently serving on the editorial board of about a dozen mathematics and engineering journals, including *Numerical Linear Algebra with Applications*, *Mechanical Systems and Signal Processing*, and *Dynamical Systems*.

Datta has served as the vice-chair of the SIAM Linear Algebra Activity Group and has organized several successful interdisciplinary conferences sponsored by the American Mathematical Society and SIAM, and MTNS (Mathematical Theory of Networks and Systems), IEEE. He also co-edited several Proceedings books of these conferences.