The Seventh Mississippi State – UAB Conference on DIFFERENTIAL EQUATIONS and COMPUTATIONAL SIMULATIONS

Brief Biography of Principal Speakers

Oscar P. Bruno, Professor of Applied and Computational Mathematics, California Institute of Technology (Caltech). Dr. Bruno received his Ph.D. from the New York University in 1989. His research interests are in the areas of optics, elasticity and electromagnetism, remote sensing, radar, overall electromagnetic and elastic behavior of materials (solid, fluids, composites materials, multiple-scale geometries), and phase transitions. He graduated with a Friedrichs Award for an outstanding dissertation in mathematics from the Courant Institute. He is also the recipient of a Young Investigator Award from the National Science Foundation (NSF) and a Sloan Foundation Fellowship.

Chris Cosner, Professor of Mathematics at the University of Miami. Dr. Cosner received his Ph.D. in Mathematics from the University of California, Berkley in 1977 and has been on the faculty of the University of Miami for over 20 years. He also held visiting positions at the Institute for Advanced Studies, Texas A & M University, and the University of Tennessee. His research focuses on studying mathematical models for the ways that organisms interact with each other, humans, and the environment, especially in their utilization of space. He has published extensively and made numerous presentations in these research areas. His research has been funded by NSF continuously for 20 years. He recently co-authored the book titled "Spacial Ecology on Reaction – Diffusion Equation," John–Wiley & Sons Ltd.

Jeff Crandall, Professor of Mechanical and Aerospace Engineering and Biomedical Engineering at the University of Virginia. Dr. Crandall also serves as the Director of the University's Center for Applied Biomechanics. His research focuses on understanding the human body's response and injury mechanisms during dynamic loading with applications in the areas of impact biomechanics, transportation safety, orthopedic studies, military and blast trauma, and sports-related injuries. He is a fellow of the Society of Automotive Engineers and the Association for the Advancement of Automotive Medicine and a member of the board for the International Research Committee on the Biomechanics of Injury. He has authored more than 350 technical papers and has received numerous awards, including the United States Government Award for Engineering Excellence.

Norman Dancer, Professor of Mathematics in the School of Mathematics and Statistics at the University of Sydney. Dr. Dancer received his Ph.D. in Mathematics from the University of Cambridge in 1972 and was elected a Fellow of the Australian Academy of Science (FAA) in 1996. He also received a Research Award of the Humboldt Foundation in 2004. He has given plenary lectures at international meetings in many countries, including the USA, Canada, UK, France, Germany, Italy and Spain. He is currently on the editorial board of a number of journals including Abstract and Applied Analysis, Advanced Nonlinear Studies, Advances in Differential Equations, Communications in Applied Nonlinear Analysis, and Topological Methods in Nonlinear Analysis.

Joshua M. Epstein, Director of the Center on Social and Economic Dynamics and Senior Fellow in Economic Studies at the Brookings Institution. Dr. Epstein received his Ph.D. from the Massachusetts Institute of Technology. His area of expertise is the modeling of complex social, economic and biological systems using agent-based computational models and nonlinear dynamical systems. He has published widely in the modeling area, with scholarly articles on economics, epidemiology, archaeology, game theory, and civil violence. He is a member of the External Faculty of the Santa Fe Institute and the New York Academy of Sciences and has taught mathematical and computational modeling at Princeton and the Santa Fe Institute Summer School.

Lisa Fauci, Professor of mathematics at Tulane University. Dr. Fauci was the funding director of the Center for Computational Science at Tulane and Xavier University from 2001 to 2003 and has been the Center's Associate Director since 2003. She received her Ph.D. in mathematics from the New York University in 1986 and has been on the faculty at Tulane University since then. She was a Sloan Research Fellow from 1992 - 1994. She has published extensively and given numerous invited talks in mathematical biology and computational science. Her research has been supported by major grants from NSF and NIH.

Yanyan Li, Professor of Mathematics at Rutgers University. Dr. Li received his Ph.D. in mathematics from the New York University in 1988 and has been at Rutgers University since 1990. He also held numerous visiting and adjunct positions in China, France, Italy, and the US. His work in the analysis of PDEs has been well-recognized. He was an invited speaker at the 2002 International Congress of Mathematics and a Sloan Research Fellow from 1993 - 1995. His research has been funded by NSF for almost twenty years.

Jean L. Mawhin, Professor of Mathematics, Universit´e de Louvain. Dr. Mawhin received Docteur en sciences (mathematiques) in 1969 from Universite de Liege. His research focuses on nonlinear differential equations, nonlinear functional analysis, critical point theory, real analysis, and history of mathematics. He received the Alexander von Humboldt Award for the scientific cooperation between Belgium and West-Germany (1990-1991), the Mathematical Medal of the Union of Czechoslovak Mathematicians and Physicists (1990), and the Bolzano Mathematical Medal of the Czech Academy of Science (2002). He is a Fellow of the Royal Academy of Belgium (President in 2002), an Honorary Fellow of the Institute of Luxembourg, a Foreign Fellow of the Russian Academy of Natural Sciences, and a Foreign Fellow of the Accademia Toscana 'La Colombaria.

Charles J. Nietubicz, Director of the Major Shared Resource Center (MSRC) and Chief of the Army Research Laboratory High Performance Computing Division at Aberdeen, MD. Mr. Nietubicz received his B.S. and M.M.E. degrees in Mechanical Engineering from the University of Dayton in 1969 and 1970, respectively. As the Chief of the Advanced Computing and Computational Sciences Division, he is responsible for 220 employees and an annual operating budget of over $70M. His Division has technical responsibility in areas of scientific computing, computational science and engineering, networking, system administration and information assurance. He is a Fellow of the AIAA and has over 150 publications and presentations in the areas of Computational Aerodynamics, High Performance Computing, and Scientific Visualization. He has received two Army Science Research and Development Achievement

awards, the bronze medal for achievement at the Army Science Conference, the Army Superior Civilian Service Award and the Army Meritorious Civilian Service Award.

Jaime Peraire, Professor of Aeronautics and Astronautics at the Massachusetts Institute of Technology and Director of the Aerospace Computational Design Laboratory. Dr. Peraire is also the co-director of the new MIT SM program in Computation for Design and Optimization (CDO). He received his PhD in 1986 from the University of Wales (UK) and has been on the faculty at MIT since 1993. His areas of research interest are computational aerodynamics, computational mechanics, and optimization. His current research focuses on high order discontinuous Galerkin methods for CFD, flapping flight and computational mechanics. He was the originator of the FLITE code, which is the main unstructured CFD analysis code in use at British Aerospace and Rolls Royce in the UK. He also led the development of the FELISA code for re-entry aerodynamics, which is still in use at NASA Langley. He has received several awards, including The Research Corporation Trust Award (1986), two NASA exceptional achievement awards (1989 and 1997), and the Outstanding Young Researcher Award in Computational Mechanics (1998).

John Rice, Research Staff Member at the Center for Computational Biology at IBM's Thomas J. Watson Research Center. Dr. Rice received his Ph.D from John Hopkins University in 1998. He is currently working on methods to infer cellular signaling pathways from high-throughput data. He has published extensively in the field of simulation of cardiac physiology including models of electrophysiology, calcium signaling and the cellular machinery that allows heart cells to contract. He has two patents in the area of modeling biological systems. He is a member of the Biophysical Society. He has contributed to numerous government initiatives in biological modeling, including the Integrated Human Function Team of the National Aeronautics and Space Administration (NASA) and the Microbial Cell Project of the Department of Energy (DOE).

Peter Takáč, Chair Professor of Applied Analysis at Universität Rostock, Germany. Dr. Takáč received his Ph.D. in Mathematics from the University of Minnesota in 1986. Prior to joining Universität Rostock, he held faculty positions at Vanderbilt University, Emory University, and Washington State University. His research focuses on partial differential equations and modern functional analytic methods with applications to degenerate and singular diffusion equations, nonlinear eigenvalue problems with the p-Laplacian, the complex Ginzburg - Landau equations, superconductivity, infinite dimensional dynamical systems with some monotonicity properties, nonlinear growth - dispersion population models, the nonlinear Boltzmann equation, and strongly continuous semigroups of positive operators. His research has been funded by the NSF from 1987 - 1996 and by the German Research Society from 1997 to present.