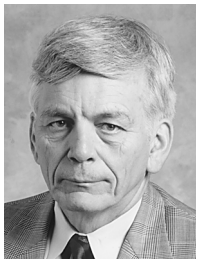
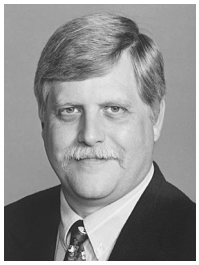
Professional Staff



Dara W. Childs has been Director of the Turbomachinery Laboratory since 1984 and holds the Leland T. Jordan Chair in Mechanical Engineering at Texas A&M University. He received B.S. and M.S. degrees (Civil Engineering, 1961, 1962) from Oklahoma State University, and a Ph.D. (Engineering Mechanics, 1968) from the University of Texas. He was named an ASME Fellow in 1990, and received ASME's Henry R. Worthington Medal in 1991. Dr. Childs' expertise is in dynamics and vibrations, with an emphasis in rotordynamics. Current research includes: testing of high-pressure honeycomb and hole-pattern gas damper seals; measuring friction factors for roughened surfaces using a high-pressure flat plate test rig; measurement of transient behavior of radial hydrostatic thrust bearings; measuring the performance characteristics of hydrostatic thrust bearings; improving the prediction capability of labyrinth seal codes.

Dr. Childs has authored many publications related to rotordynamics and vibrations, and the books, *Turbomachinery Rotordynamics*, and *Dynamics in Engineering Practice*.



Gerald L. (Jerry) Morrison is the Nelson-Jackson Professor of Mechanical Engineering at Texas A&M University. He received his Ph.D. degree from Oklahoma State University (1977). He is a member of various societies including: ASEE, Associate Fellow in AIAA, Fellow in ASME, Pi Tau Sigma, and Tau Beta Pi.

Dr. Morrison's research interests are in turbulent fluid flow and instrumentation. His research in coherent structures in turbulent flows has enabled him to develop expertise in hot wire anemometry, laser Doppler anemometry, acoustic measurements, and spectral analysis, and in other conditional sampling techniques.

Dr. Morrison manages a program to study labyrinth seals. This includes empirical and analytical schemes to predict leakage rates with experimental verification of the two schemes, and the use of a 3-D laser Doppler anemometer to measure the flowfield inside an actual seal. He is also active in the research area of flow fields inside centrifugal pumps and turbochargers.

Kalyan Annamalai is a Professor in Mechanical Engineering. He came to Texas A&M in 1981. He received a B.S. degree (Mechanical Engineering) from Anna University, Madras, an M.S. degree from Indian Institute of Science, and a Ph.D. degree from Georgia Institute of Technology.

Dr. Annamalai worked as a Research Associate in the Division of Engineering at Brown University, and as Associate Scientist at AVCO-Everett Research Laboratory. At AVCO-Everett, he was involved in the study of gasification of coal, slag flow in MHD channels, and wood combustion in boiler burners. He is conducting research in the area of group combustion of liquid sprays and coal suspension, and pollutants formation and destruction. Dr. Annamalai has extensive journal publications and has acted as a panel member for several federal agencies. He is a Fellow of ASME, the Combustion Institute, and is on the ASME Committee on Fire and Combustion.

Paul G. A. Cizmas is Assistant Professor of Aerospace Engineering at Texas A&M University. He received his Dipl. Ing. degree (Aerospace Engineering, 1984) from the Polytechnic Institute of Bucharest and his Ph.D. degree (Mechanical Engineering, 1995) from Duke University.

Dr. Cizmas' expertise is in the areas of unsteady aerodynamics, computational fluid dynamics and heat transfer, and propulsion. He worked as a Senior Engineer/Scientist at Westinghouse Science and Technology Center. At Westinghouse, he developed computer codes for numerical simulation of stall flutter and rotating stall in turbomachinery, as well as parallel computation of multistage unsteady flows. He received the ASME Liquid Propulsion Best Paper Award (1996) and the Westinghouse Science and Technology 1997 Technical Publication Award.

Je-Chin Han, holds the HTRI Professorship of Mechanical Engineering at Texas A&M University, received his B.S. degree from the National Taiwan University (1970), M.S. degree from Lehigh University (1973), and Sc.D. from Massachusetts Institute of Technology (1976), all in Mechanical Engineering. He worked for four years as a Process Development Engineer at Ex-Cello-O Corporation. This experience included design techniques for industry process heating and thermal performance improvement of heat transfer equipment such as boilers, heat exchangers, condensers, cooling towers, etc.

Dr. Han is a member of ASME and AIAA. His current research is in the areas of high temperature gas turbine blade cooling and heat transfer augmentation. He is the principal investigator for recent research programs on blade internal cooling sponsored by NSF and General Electric Aircraft Engines. He is also working on blade film cooling, supported by the U.S. Air Force and Textron-Lycoming.

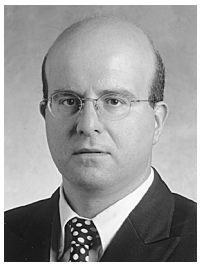
Table of Contents

Hong (Helen) Liang is Associate Professor in the Department of Mechanical Engineering at Texas A&M University. She has been a visiting professor at the Department of Materials Science and Engineering at the Massachusetts Institute of Technology, the Energy Technology Division at Argonne National Laboratory, and the Ecole Centrale de Lyon in France. She received her B.S. degree from Beijing University of Iron & Steel Technology (Materials Science and Engineering, 1983) and M.S. and Ph.D. degrees (Materials Science and Engineering, 1987, 1992) from Stevens Institute of Technology.

Dr. Liang's expertise is in tribology and tribochemistry, with emphasis in materials design and surface engineering. Current research includes: surface design for high-wear resistance, nanotribological characterization of high-performance materials, friction control and reduction, and solid and liquid lubricants. Dr. Liang has authored or coauthored three books in tribology and more than 70 technical papers.

Alan B. Palazzolo, Professor of Mechanical Engineering, received his B.S. degree (1976) from the University of Toledo, and M.S. (Mechanical Engineering, 1977) and Ph.D. degrees (Mechanical Engineering, 1981) from the University of Virginia. He worked for Bently Nevada, University of Virginia, Allis Chalmers, and Southwest Research Institute, before joining Texas A&M in 1985.

Dr. Palazzolo's expertise is in vibrations, rotordynamics, finite, and boundary elements. He has been involved with field troubleshooting of mechanical malfunctions in rotating and reciprocating machinery. Dr. Palazzolo has presented papers at ASME Gas Turbine and Vibration Conferences, Texas A&M Turbomachinery Symposium, Society of Tribologist and Lubrication Engineers, and has published 50+ papers in technical journals. His current research includes magnetic bearings, cryogenic vibration dampers, active vibration and noise control, fluid film bearings, shaft currents, and gear couplings. Dr. Palazzolo has done consulting for Southwest Research Institute, Goodyear, and Wright Patterson AFB, along with Forensic Engineering.

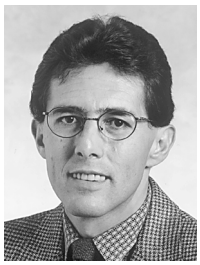


Alexander G. Parlos is an Associate Professor of Mechanical Engineering at Texas A&M University. He received his B.S. degree (Nuclear Engineering, 1983) from Texas A&M University, M.S. degrees (Mechanical Engineering, 1985; Nuclear Engineering, 1985), and a Sc.D. degree (Automatic Control and Systems Engineering, 1986) from the Massachusetts Institute of Technology.

Dr. Parlos' current research interests center around the development and application of methods and algorithms for the proactive fault diagnosis and prognosis, and end-of-life prediction of complex electromechanical and mechanical systems, with emphasis on rotating machinery. Dr. Parlos has been involved with research and teaching in neural networks, control systems, and system identification since 1988. He has conducted extensive sponsored research on the development and applications of artificial neural networks to modeling, fault diagnosis, and control of complex machines. Dr. Parlos has served on the editorial board of the IEEE Transactions on Neural Networks since 1994.

Eric Petersen joined the Department of Mechanical Engineering at Texas A&M as an Associate Professor, coming from the University of Central Florida. His research areas include the ignition and combustion of fuel blends at gas turbine engine pressures and temperatures, investigation of laminar flame speeds of fuel reacting flows, high-temperature chemical kinetics and spectroscopy, advanced additives for composite solid propellants, and nanoparticle additives for enhancing the performance of liquid and solid fuels.

Dr. Petersen's studies will enable the research of gas dynamics and reacting flows in one of the country's few shock tube testing facilities. Studies will include expanding abilities to study gaseous fuels and heterogeneous fuels in the shock tube, and flame speed experiments to provide better models for fuel flexibility, performance, stability, and efficiency. Additionally, a rocket laboratory is being prepared where novel solid rocket propellants will be developed and evaluated for use in rocket motors and energetics.



Luis A. San Andres, Professor of Mechanical Engineering, received his M.Sc. degree from the University of Pittsburgh (1982) and his Ph.D. degree from Texas A&M University (1985). He received the Organization of American States Applied Science and Technology Award, and has been a TEES Fellow since 1993.

Dr. San Andres' research interests concern fluid film lubrication at high speeds, mechanics of squeeze film flows, and rotordynamics. He has contributed extensively to the understanding of fluid inertia effects in thin film squeeze flows and performed experimental work on the measurement of pressure fields on squeeze film damper apparatus.

Dr. San Andres' current research includes the development of computational fluid flow models for prediction of static and dynamic force performance of hydrostatic journal and pad bearings, and annular pressure seals for cryogenic liquid applications. He is also developing a test program to measure the effects of advanced integral squeeze film dampers on rotorbearing systems.

Taher M. Schobeiri is a Professor of Mechanical Engineering at Texas A&M University. He received his Dipl.-Ing. (M.Sc, 1970) and Dr.-Ing. (Ph.D., 1978) degrees from Technical University of Darmstadt, Germany. Dr. Schobeiri has eight years industrial experience at BBC Brown Boveri Turbomachinery, Switzerland. As Group Leader for Aerothermodynamic Design, he was responsible for development of design methods for new gas turbine types. He joined Texas A&M in 1987. His research interests include unsteady flow behavior in turbomachinery, turbine, and compressor flow.

Dr. Schobeiri is the author of numerous articles. He is a member of the ASME Turbomachinery Committee and VDI (the German Society of Mechanical Engineers).

SYMPOSIUM STAFF

Stephen Phillips—Symposia Director
Martha Barton—Exhibitor Services
Eric Betancourt—System Administrator
Joanne Burnett—Editor/Technical Sessions Coordinator
Eddie Denk—Laboratory Facility Director
Lynda Harms—Accounts Payable
Rhonda Johnson—Marketing Coordinator
Debbie Maggs—Marketing Assistant
Jen Swartz—Administrative Services
Amy Zalmanek—Accounts Receivable