

Announcements, Comments, and Acknowledgments

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THIS year has gone relatively smoothly for the *AIAA Journal*. Thanks to the terrific job done by our Deputy Editor, Editorial Assistant, Associate Editors, Editorial Advisory Board and staff at AIAA headquarters, we continue to have a remarkable publication. WriteTrack, our state-of-the-art article submission and tracking system, has had relatively few changes this past year, but those changes have made the system substantially better. This past year has also been notable for even more cooperation among all of the AIAA journals in ensuring that submitted manuscripts are published in the journal in which they would receive the best audience for their work.

Aerospace Letters: The major addition to *AIAA Journal* this year is a new section called Aerospace Letters. This is meant to provide a way of rapidly communicating new and potentially important ideas or results to the aerospace community. An Aerospace Letter must be very short, two journal pages at most, and the range of appropriate topics is as broad and inclusive as Aerospace Sciences itself. The creation of Aerospace Letters has been discussed for many years, but has only now achieved lift off. This is the result of the diligent work of the members of the New Initiatives Subcommittee of the Publications Committee, whose recommendation was to give it a try.

To ensure rapid publication, a different approach to reviewing Aerospace Letters will be used. All submitted Letters will be prescreened, and only a small number will be sent out for very rapid review. When a submitted Letter is not selected for review, the editors will not be required to give explanations. There is no rebuttal. When a paper is selected for review, it will be sent out to an expert in the field for a very quick “yes” or “no” decision. There will be no iterative procedures between authors and reviewers and editors, as there are with full-length papers and Technical Notes. For this reason, it is important for authors to follow the guidelines for publication. These guidelines are included on the inside back cover of every issue and are also available at <<http://www.writetrack.net/aiaa/documents/infocontributors.pdf>>.

Special Sections: This year we are planning a Special Section on High-Velocity Impact, for which Theodore Nicolas (retired) and Anthony Palazotto, both of the Air Force Institute of Technology, will act as Guest Editors. We are also planning a Special Section on Flapping Wing Flight, for which Gregg Abate and Michael Ol, both of the U. S. Air Force Research Laboratory, and Wei Shyy, of the University of Michigan, will act as Guest Editors. A Special Section appeared in the November 2006 issue entitled “Turbulent Boundary Layers” based on the Turbulent Boundary Layers sessions at the AIAA meeting in Toronto in 2005. The Guest Editors are Luciano Castillo, Rensselaer Polytechnic Institute, and Anatoli Tumin, The University of Arizona.

Staff and Editorial Changes: There have been a number of changes in the editorial staff in the last year. We had 16 Associate Editors whose terms ended in December 2006, of which nine are continuing for another term. They are as follows: Balakumar Balachandran, University of Maryland; Datta Gaitonde, Air Force Research Laboratory; Peyman Givi, University of Pittsburgh; Jayavant P. Gore, Purdue University; Robert P. Lucht, Purdue University; Allen Plotkin, San Diego State University; Kunigal N. Shivakumar, North Carolina A&T State University; Pasquale (Pat) M. Sforza, University of Florida; and Anthony Springer, NASA. We thank them for past service to AIAA Journal and for their willingness to continue.

Continuing Associate Editors are: Mehdi Ahmadian, Virginia Polytechnic Institute and State University; Natalia Alexandrov, NASA Langley Research Center; Christophe Bailly, Ecole Centrale

de Lyon; Ndaona Chokani, Duke University; Kozo Fujii, Institute of Space and Astronautical Science; Kirti (Karman) N. Ghia, University of Connecticut; Carolyn R. Kaplan, U.S. Naval Research Laboratory; Eliezer Livne, University of Washington; Achille Messac, Rensselaer Polytechnic Institute; Anthony Palazotto, Air Force Institute of Technology; Ajit Roy, Air Force Research Laboratory; Ronald So, Hong Kong Polytechnic University; Anatoli Tumin, University of Arizona; Iowa State University; Xiaolin Zhong, University of California Los Angeles; and our Deputy Editor, Kazhikathra (Kailas) Kailasanath, U.S. Naval Research Laboratory. Their past and continuing service is very much appreciated.

New Associate Editors who began after January 2006 are Carlos E. Cesnik, University of Michigan; Noel T. Clemens, University of Texas at Austin; Jonathan E. Cooper, University of Manchester; Frank N. Coton, University of Glasgow; Ephraim Gutmark, University of Cincinnati; Thomas L. Jackson, University of Illinois at Urbana-Champaign; Kenneth G. Powell, University of Michigan; Roger H. Rangel, University of California, Irvine; Jamshid A. Samareh, NASA Langley Research Center; Z.J. Wang, Iowa State University. Their willingness to join our staff is greatly appreciated.

Very special thanks for their years of service to our retiring editors: Suresh K. Aggarwal, University of Illinois at Chicago; Monika Auweter-Kurtz, University of Stuttgart, University of Hamburg; Alex Berman; Graham Candler, University of Minnesota; Harsha Chelliah, University of Virginia; Wing Ng, Virginia Polytechnic Institute and State University; Christophe Pierre, McGill University; and Sunil Saigal, University of South Florida.

We wish to thank the continuing Advisory Board members for their help and advice throughout this year: Satya N. Alturi, University of California, Irvine; Dennis M. Bushnell, NASA Langley Research Center; Earl H. Dowell, Duke University; Edward M. Greitzer, Massachusetts Institute of Technology; Professor Chih-Ming Ho, University of California, Los Angeles; Antony Jameson, Stanford University; Robert G. Loewy, Georgia Institute of Technology; Simon Ostrach, Case Western Reserve University; Eli Reshotko, Case Western Reserve University; Anatol Roshko, California Institute of Technology; George W. Springer, Stanford University; Byron D. Tapley, University of Texas, Austin; Raymond Viskanta, Purdue University; Forman A. Williams, University of California, San Diego; and Israel J. Wygnanski, University of Arizona.

I would like to extend my thanks to John Whitesides, the current Vice President–Publications, for his help and encouragement. Our Editorial Assistant, Michael McGinnes, continues to do a superb job, and to him we extend our special thanks. The AIAA editorial staff, in particular Norma Brennan, Director of Publications Operations, Luke McCabe, Managing Editor, and Rick Ashley, Publications Web Developer, have effectively dealt with all of the problems of managing such a complex and widely circulated journal.

A very special thanks to K. Kailasanath, our Deputy Editor, who has worked diligently to ensure that *AIAA Journal* runs smoothly and maintains its excellent quality, and to Forman Williams, on our Editorial Advisory Board, for a help and rescue mission he performed, above and beyond the “call of duty” to help resolve difficult technical issues.

Last but far from least, we all owe a tremendous debt of gratitude to all of the individuals who reviewed papers for the journal this year. A list of their names is included in this issue.

Elaine Oran
Editor-in-Chief

Editor-in-Chief



ELAINE S. ORAN, Senior Scientist for Reactive Flow Physics at the U.S. Naval Research Laboratory (NRL), received an A.B. from Bryn Mawr College in 1966 and a Ph.D. from Yale University in 1972. She joined the NRL Plasma Physics Division in 1972 and became part of the Laboratory for Computational Physics in 1978. Her current research interests are in chemically reactive flows; deflagrations and detonations; computational science and numerical analysis; shocks and shock interactions in gas and condensed phases; computational methods; turbulence; microfluidics, and astrophysics. Application areas include combustion and propulsion, reentry and microdynamical flows; design of rocket motors; and astrophysical phenomena, particularly supernova explosions. She is a former AIAA Vice-President of Publications and has served for many years on the AIAA Publication Committee. She is a past Chair and founding member of the American Physical Society (APS) Division of Computational Physics, past Vice-Chair of the Division of Fluid Dynamics, and former member of the Committee on the Status of Women in Physics. She served on the Board of Directors of the Combustion Institute (CI), and she is currently President of the Institute for the Dynamics of Energetic and Reactive Systems (IDERS). She was Associate Editor of the *Journal of Computational Physics* and Managing Editor of the journal *Shock Waves* and currently serves on the advisory boards of *Progress in Energy and Combustion Science* and *Shock Waves*. Dr. Oran received the Oppenheim Prize (IDERS, 1999), the Zeldovich Gold Medal (CI, 2000), and the Dryden Distinguished Lectureship in Aerospace Research (AIAA, 2002). She is a fellow of AIAA and APS and a Member of the National Academy of Engineering. Dr. Oran has published over 300 technical papers, written many review articles, and coauthored the book *Numerical Simulation of Reactive Flow* (Cambridge, 2001).

Deputy Editor



KAZHIKATHRA (KAILAS) KAILASANATH has been the Head of the Center for Reactive Flow and Dynamical Systems at the Naval Research Laboratory since 1989. As Head of the Center, he is responsible for developing, supervising, advising on, and carrying out basic and applied research. He received his Ph.D. from the Georgia Institute of Technology in 1980 and has been at the Naval Research Laboratory since then. Prior to that, he received his M.S.A.E. from the Georgia Institute of Technology in 1979 and his B.Tech in Aeronautical Engineering from the Indian Institute of Technology (Madras) in 1976. His research interests include the structure, stability, and dynamics of flames and detonations; combustion instabilities in ramjets; multiphase flows; subsonic and supersonic mixing and noise generation; and the simulation of advanced propulsion system concepts. He has published more than 250 articles on these topics. He is a Fellow of the AIAA and the Institute of Physics. He was an Associate Editor of the *AIAA Journal* previously and is currently the Deputy Editor. He is also on the board of the journal *Combustion Theory and Modeling*. He is a Past Chair of the AIAA Propellants and Combustion Technical Committee.

Associate Editors



MEHDI AHMADIAN is Professor of Mechanical Engineering at Virginia Polytechnic Institute and State University, where he also holds the position of Director of the Center for Vehicle Systems and Safety (CVeSS), the Railway Technologies Laboratory (RTL), and Virginia Institute for Performance Engineering and Research (VIPER). He received his B.S. (1980), M.S. (1982), and Ph.D. (1984) from the State University of New York at Buffalo. Dr. Ahmadian has authored more than 150 technical publications and has made more than 100 technical presentations on topics related to advanced technologies for ground vehicles. He holds six U.S. and international patents and has edited three technical volumes. He is currently Associate Editor of the *AIAA Journal* and *Shock Vibration* and has served as Associate Editor for the American Society of Mechanical Engineers (ASME) *Journal of Vibration and Acoustics* (1989–1996). Dr. Ahmadian is a Fellow of the ASME and a Senior Member of AIAA.



NATALIA ALEXANDROV is a Senior Research Scientist at the Aeronautics Systems Analysis Branch of the NASA Langley Research Center. Her Ph.D. in Computational and Applied Mathematics is from Rice University. Her general interests are in computational science and engineering, with the focus on modeling and model management for design optimization of large-scale systems governed by partial differential equations; multidisciplinary optimization (MDO); and analysis and design of complex adaptive networks and systems of systems. She is an author of more than 30 publications on these subjects. Her recent work is in multidisciplinary problem synthesis and in developing rigorous approaches to design optimization of aerospace systems governed by variable-fidelity computational analyses with application to low-sonic-boom design. She is a member of SIAM, AIAA, and ISSMO and serves on the editorial board of *Optimization and Engineering*.



CHRISTOPHE BAILLY is a Professor of Fluid Mechanics and Acoustics at the Ecole Centrale de Lyon (ECL, engineering school), France. He received his Ph.D. in Aeroacoustics from the Ecole Centrale Paris in 1994. He joined the Centre Acoustique of the Laboratoire de Mécanique des Fluides et d'Acoustique, Centre National de la Recherche Scientifique (CNRS), at ECL in 1995. He has also served as lecturer in Turbulence and Acoustics at the Ecole Centrale Paris (ECP) since 1995 and at the Ecole Nationale Supérieure des Techniques Avancées (ENSTA) since 2001, respectively. His research activities lie in the area of turbulence and noise generation with current emphasis on computational aeroacoustics, compressible large eddy simulation, jet noise and sound wave propagation. He is coauthor, with Geneviève Comte-Bellot, of one textbook in turbulence, has authored or coauthored over 40 papers in refereed journals, and more than 100 conference papers. He is also recipient of the Yves Rocard Prize from the French Acoustical Society (1996) and of the Alexandre Joannidès Prize from the French Academy of Sciences (2001).



BALAKUMAR BALACHANDRAN is a Professor of Mechanical Engineering at the University of Maryland, College Park. After completing his doctoral studies at Virginia Polytechnic Institute and State University (VPI&SU) in December 1990 and a postdoctoral stint at VPI&SU, he joined the University of Maryland in August 1993. His research interests are in the areas of nonlinear dynamics, vibration and acoustic control, signal analyses, and system identification. He is the author/coauthor of more than 30 journal publications, a Wiley Nonlinear Science book entitled *Applied Nonlinear Dynamics: Analytical, Computational, and Experimental Methods* (1995), and a Brooks/Cole-Thomson book entitled *Vibrations* (2003). He is a fellow of ASME and a member of AIAA, AAM, SPIE, and ASA. He serves on the editorial board of the *Journal of Vibration and Control*. He is a member of the ASME Technical Committees of Multi-Body Systems and Nonlinear Dynamics and Dynamics and Control of Structures and Systems.



CARLOS CESNIK is an Associate Professor of Aerospace Engineering at the University of Michigan and Director of the Active Aeroelasticity and Structures Research Laboratory (<http://gust.engin.umich.edu>). He earned an Engineering Degree in Aeronautics (1987) and a Masters in Aeronautical Engineering (1989) degree from the Instituto Tecnológico de Aeronáutica (ITA), Brazil, and M.S. in Aerospace Engineering (1991), and Ph.D. (1994) degrees from the School of Aerospace Engineering at Georgia Tech. Professor Cesnik is an Associate Fellow of the AIAA, member of AIAA's Structural Dynamics Technical Committee and the Adaptive Structures Technical Committee. He has over 120 archival journal papers, conference papers, and technical reports, and several invited lectures in the areas of fixed and rotary wing aeroelasticity, smart structures, structural mechanics, and structural health monitoring. Previously to his appointment as a tenured associate professor at the University of Michigan, Professor Cesnik was the Boeing Assistant Professor of Aeronautics and Astronautics and then Associate Professor of Aeronautics and Astronautics at MIT. He has also worked as a research engineer at Embraer and has extensive experience in aeroelasticity, finite element modeling, and structural and design optimization. His research interests focus on active aeroelastic structures, computational aeroelasticity, and structural health monitoring. He has a patent for a wing-morphing concept for cannon-launched UAV, and has been selected to the 2002 ASME-Boeing Structures & Materials Award "on the basis of originality and significance to the field of Aerospace Engineering" associated with such work. Professor Cesnik is currently associate editor for the *AIAA Journal* and the *Journal of Fluids and Structures*.



NDAONA CHOKANI received his B.A. (First Class—Honors) in Engineering Science from Oxford University in 1984 and his Ph.D. in Engineering from Cambridge University in 1988. He served on the faculty at North Carolina State University and then on the faculty at Duke University, where he was a Professor in the Mechanical Engineering and Materials Science Department. His research interests include experimental studies of hydrodynamic stability in compressible flows and of shock wave/boundary-layer interactions, instrumentation, and digital signal processing techniques. This research work has been supported by the Air Force Office of Scientific Research, the Air Force Research Laboratory, NASA, and the National Science Foundation. He has several international scientific collaborations with research groups in France, Germany, Russia, and Switzerland. He previously served on the National Academies' Air Force Science and Technology Board, as Associate Editor of the *Journal of Aircraft*, and as a member of AIAA's Transition Study Group, Aerodynamics Measurement Technology Technical Committee, and Thermophysics Technical Committee. He is an Associate Fellow of the AIAA.



NOEL CLEMENS is a Professor in the Department of Aerospace Engineering and Engineering Mechanics at The University of Texas at Austin. He received a B.S. in Mechanical Engineering from the University of Massachusetts at Amherst in 1985, and M.S. and Ph.D. degrees in Mechanical Engineering from Stanford University in 1986 and 1991, respectively. From 1991 to 1993 he was a post-doctoral fellow at the Combustion Research Facility at Sandia National Laboratories. In 1995 he received the NSF Presidential Faculty Fellow Award and in 2000 he was appointed to the Robert and Francis Stark Centennial Fellowship in Engineering. Professor Clemens's current research interests include turbulent mixing, turbulent flames, laser diagnostics, shock wave/boundary layer interactions, supersonic inlet unstart, and supersonic flow control. He has authored or coauthored over 40 papers in refereed journals and 65 conference papers. His research has been supported by the AFOSR, NSF, NASA, and ARO. He is on the editorial advisory board of *Experiments in Fluids* and is a member of the AIAA, ASME, APS, and The Combustion Institute. He is an Associate Fellow of the AIAA.



JONATHAN COOPER is a Professor of Engineering at the University of Manchester, U.K. He received a B.Sc. in Engineering Mathematics and a Ph.D. in Aeronautical Engineering from Queen Mary College, University of London. Following a period as a Senior Research Fellow at the Royal Aerospace Establishment, Farnborough, U.K., he joined the University of Manchester in 1989. Professor Cooper's main research interests are in aeroelasticity, morphing structures, flight flutter testing, system identification, and structural dynamics. He was a visiting Professor at the Katholieke Universiteit Leuven, Belgium in 1995 and was a Royal Academy of Engineering Industrial Fellow at British Aerospace in 1997. For the academic year 2005–2006 he was a Royal Academy of Engineering/Leverhulme Trust Senior Research Fellow. He is an Associate Editor of the *Aeronautical Journal* and a member of the Royal Aeronautical Society Structures & Materials and Accreditation Committees. He is a Fellow of the Royal Aeronautical Society and an Associate Fellow of the AIAA.



FRANK N. COTON is currently Professor of Low Speed Aerodynamics and Associate Dean (Research) in the Faculty of Engineering at the University of Glasgow. He received his Ph.D. from the Department of Aerospace Engineering at the University of Glasgow in 1988. After a brief period with Rolls Royce U.K. he returned to Glasgow University to become a faculty member in 1989. His research interests include experimental studies of the unsteady aerodynamics of rotorcraft, delta wings, and wind turbines with particular emphasis on dynamic stalling, interactional aerodynamics, and vortex dynamics. He has been a member of the AIAA Applied Aerodynamics Technical Committee since 1999 and will be the General Chair for the AIAA Summer Fluids Meeting in 2007. He is also a member of the Aerodynamics Group Committee of the Royal Aeronautical Society. He is a Senior Member of the AIAA and a Fellow of the Royal Aeronautical Society. He has authored or coauthored more than 100 archival and conference papers and has received awards for his work from the ASME, the American Helicopter Society, the Royal Aeronautical Society, and the U.K. Institute of Mechanical Engineers.



KOZO FUJII is Professor of the Department of Space Transportation at the Institute of Space and Astronautical Science (ISAS), Japan Aerospace Exploration Agency (JAXA), Japan. He received his Ph.D. from the Department of Aeronautics, University of Tokyo, in 1980. From 1981 to 1983, he was a NRC Research Associate at NASA Ames Research Center, and he became a Research Scientist at the National Aerospace Laboratory (NAL), Tokyo, Japan, in 1984. He became a Senior Research Scientist in 1987 and spent another one and half years at NASA Ames Research Center as a Senior NRC Research Associate from 1986 to 1987. In 1988, he joined the ISAS as an Associate Professor of high-speed aerodynamics, and he was promoted to Professor in 1997. He has served also as a Professor of the Department of Aeronautics and Astronautics, University of Tokyo, since 1998. His research interests include high-speed aerodynamics, high-angle-of-attack aerodynamics, and flow visualization mainly by the computational fluid dynamics approach. He has recently become interested in wind-tunnel testing and serves as a Chairman of the wind-tunnel facility at the ISAS. He is a member of the MOSAIC project on the technology of the pressure-sensitive paint measurement system. He recently has been working on the aerodynamics and system design of reusable launch vehicles. He served as a Directors' Board Member of the Japan Society for Aeronautical and Space Sciences five times and is currently a director of general affairs. He has been an Associate Editor of the series "Notes on Numerical Fluid Mechanics" since 1987 and an Editorial Board Member of *Communications on Numerical Methods in Engineering* since 2000 and is a Managing Editor of *Journal of Visualization*. He is a Fellow of the Japan Society of Mechanical Engineers (JSME) and has been an Associate Fellow of AIAA since 1995. He received several awards from JSME, the Japanese Government, AIAA, and others. He is an author or coauthor of more than 200 papers. He wrote many review papers and books that include *Physics of Skiing* (in Japanese) and the translation of *Physics of Golf*.



DATTA V. GAITONDE received his B.Tech. from the Indian Institute of Technology, Bombay, in 1983, and his M.S. and Ph.D. degrees in Mechanical and Aerospace Engineering from Rutgers University in 1986 and 1989, respectively. Since 1989 he has been working at Wright–Patterson Air Force Base, where he is a Principal Research Aerospace Engineer and Technical Area Leader of the High-Speed Flows Group in the Air Vehicles Directorate of the Air Force Research Laboratory. His current research activities include development and application of multiphysics methods for high-speed propulsion and flow control, high-order algorithm development, three-dimensional shock-wave/turbulent-boundary-layer interactions, magnetogasdynamics, and electromagnetics. He is an author or coauthor of over 100 publications on these topics. He is an Adjunct Professor at Wright State University and an Associate Fellow of the AIAA. He serves on the AIAA Fluid Dynamics Technical Committee, where he currently chairs the CFD subcommittee.



KIRTI "KARMA" N. GHIA is Herman Schneider Professor of Aerospace Engineering and Engineering Mechanics and Fellow of the Graduate School at the University of Cincinnati (UC). Dr. Ghia joined UC in 1969, after completing his graduate education in Mechanical and Aerospace Engineering at the Illinois Institute of Technology, Chicago. His research activities are in simulation of steady and unsteady separated viscous flows, high-incidence aerodynamics, vortex-dominated flows, nonlinear dynamics, turbomachinery flows, flow control, aeroelasticity, development of numerical methods, LES/DNS of turbulent flows, and grid generation techniques. Dr. Ghia's research work has been sponsored by the Air Force Office of Scientific Research, the Office of Naval Research, the Army Research Office, Wright Laboratory, NASA, the National Science Foundation, the Ohio Aerospace Institute, and the aerospace industry. The American Society of Mechanical Engineers (ASME) named him the Freeman Scholar for the 1995–1996 biennium and, at UC, he has been the recipient of numerous research and teaching awards. Dr. Ghia has held visiting positions at several organizations, including USC, 1986; ICASE, NASA Langley Research Center, 1985; Polytechnic Institute of New York, 1978; and Air Force Flight Dynamics Laboratories, 1976–1977. He has served as Associate Technical Editor of the *Journal of Fluids Engineering*, 1981–1990, Co-Editor of the *International Computational Fluid Dynamics Journal*, 1991–1998, and Co-Director of Computational Fluid Dynamics Research Laboratory, 1990–. Dr. Ghia has also served on the Fluid Mechanics Technical Committee of AIAA since 1986; ASME, since 1978; and as Chair of the Honors and Awards Committee of the Fluids Engineering Division of ASME, 1997–2000. He has chaired many national and international symposia and meetings. He is a Fellow of ASME and Associate Fellow of AIAA.



PEYMAN GIVI is the William K. Whiteford Chair and Professor of Mechanical Engineering at the University of Pittsburgh. Previously he held the position of UB Distinguished Professor at the State University of New York at Buffalo, and also worked as a Research Scientist at Flow Industries, Inc., in Seattle, WA. He has had visiting appointments at the NASA Langley Research Center and the NASA Glenn (Lewis) Research Center and has won the Agency's Public Service Medal (2005). Professor Givi is among the first 15 engineering faculty nationwide who were honored to receive the Presidential Faculty Fellowship from President George Bush at the White House (1992). In 1990 he received the Young Investigator Award of the Office of Naval Research and the Presidential Young Investigator Award of the National Science Foundation. He received Ph.D. from Carnegie-Mellon University in 1984 and B.E. (Summa Cum Laude) from Youngstown State University in 1980, where he has been named the 2004 Distinguished Alumnus.



JAY (JAYAVANT) P. GORE, Vincent P. Reilly Professor within the School of Mechanical Engineering at Purdue University, received his B.E. (M.E.) degree from the University of Poona, India, in 1978 and his M.S. (1982) and Ph.D. (1986) degrees in Mechanical Engineering from the Pennsylvania State University. He completed a postdoctoral training program in Aerospace Engineering at the University of Michigan, Ann Arbor, prior to joining the University of Maryland in 1987. In 1991, Dr. Gore joined Purdue University as an Associate Professor and was promoted to the rank of full Professor in 1995 and to his present rank in 2000. His research interests include infrared sensing, diagnostics, and control, numerical and experimental studies of turbulent combustion, partially premixed flames, flame radiation, chemistry radiation interactions, NO_x and soot formation and emission, radiant burner flames, and sensors for pollutant control and fire detection. Dr. Gore teaches two graduate courses in combustion and two undergraduate courses in thermodynamics. He is the Chairman of the American Society of Mechanical Engineers (ASME) Committee on Heat Transfer in Fire and Combustion Systems, an Associate Fellow of the AIAA, and Chairman of the Board of Advisors of the Central States Section of the Combustion Institute. Dr. Gore is an author or coauthor of over 200 articles and papers. He received the 1987 Best Paper in ASME Heat Transfer Literature Award, a 1991 Presidential Young Investigator Award, and faculty sabbatical fellowships from the U.S. Department of Energy and the Japanese Ministry of Education in 1998. He is an Associate Editor of the ASME *Journal of Heat Transfer* and the U.S. Editor of the *Proceedings of the International Combustion Institute*, Vol. 28.



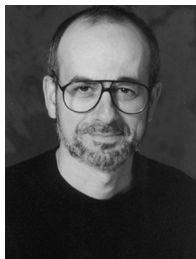
EPHRAIM (EFFIE) GUTMARK joined the University of Cincinnati (UC) in 2000 as the Ohio Regents Eminent Scholar Chaired Professor of Aerospace Engineering and Engineering Mechanics. In 2006 he was also appointed as a Professor of Otolaryngology, at the UC Medical Center. He received his M.S. and Ph.D. degrees in Aerospace Engineering from the Technion—Israel Institute of Technology. After completing postdoctoral research at the University of Southern California, Los Angeles, he worked as a Senior Research Scientist at the Research Department of the Naval Air Warfare Center in China lake, California. In 1995 he joined the Department of Mechanical Engineering at Louisiana State University as a Professor and Chairman and later was appointed as Voorheis Professor of Mechanical Engineering. His research interests include subsonic and supersonic aeroacoustics, experimental fluid dynamics and aerodynamics, combustion instabilities and emissions control, turbomachinery flow and heat transfer, Pulse Detonation Engines (PDE), and biomedical fluid dynamics and acoustics. His research has been sponsored by AFOSR, ONR, NASA, NSF, DARPA, NASP, GE, Boeing, Goodrich Aerospace, and Halliburton. He consulted numerous times to government and industrial organizations in the U.S. and Europe. He has served on several AIAA Technical committees including Aeroacoustics, Propellants and Combustion, and Fluid Dynamics. He is a Fellow of the UC Graduate School, and the recipient of College of Engineering Research and Distinguished Engineering Researcher awards and several teaching awards. He published over 110 papers in archival journals, is a coinventor of 57 U.S. and EU patents and presented and published over 360 conference papers. He is an associate Fellow of AIAA.



DR. THOMAS L. JACKSON is a Senior Research Scientist at the Center for Simulation of Advanced Rockets (CSAR <<http://www.csar.uiuc.edu>>), a Computational Science and Engineering Affiliate (CSE <<http://www.cse.uiuc.edu>>), and an Adjunct Professor in the Department of Aerospace Engineering (AE <<http://www.ae.uiuc.edu>>), all at the University of Illinois at Urbana-Champaign <<http://www.uiuc.edu>>. He received his Mathematics Ph.D. from Rensselaer Polytechnic Institute <<http://www.rpi.edu>> in 1985 after which he joined the staff of the Institute for Computer Applications in Science and Engineering (ICASE) where he had previously been a Graduate Research Assistant. In 1987 he became an Assistant, then (in 1992) an Associate, Professor at Old Dominion University in the Department of Mathematics and Statistics <<http://www.math.odu.edu>>. In 1993 he moved back to ICASE for five years before moving to the University of Illinois at Urbana-Champaign, where he now works. He has coedited two books, coauthored a textbook on hydrodynamic stability, and authored or coauthored more than 140 papers. He is currently a member of the Combustion Institute, and an Associate Fellow of AIAA. He has been a paper and grant referee for many organizations and journals, and is currently an Associate Editor for the AIAA Journal. His expertise is in the area of combustion, and the large-scale simulation thereof, and in combustion stability.



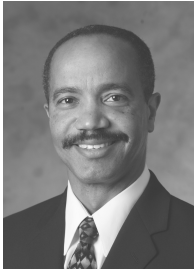
CAROLYN R. KAPLAN is a Research Chemical Engineer in the Laboratory for Computational Physics and Fluid Dynamics at the Naval Research Laboratory (NRL). She received her B.S., M.S., and Ph.D. degrees in Chemical Engineering from the University of Maryland in 1980, 1985, and 1987, respectively. Her research interests include direct numerical simulation of compressible, chemically reacting flows, nonequilibrium chemical and collisional gas dynamic processes in microflows, soot formation and radiation transport in combustion processes, and development and implementation of algorithms for large-scale scientific parallel computing. Prior to joining the Laboratory for Computational Physics and Fluid Dynamics in 1994, she was employed as a chemical engineer in the Combustion Section of the Chemistry Division of NRL from 1981 to 1994 and worked in private industry from 1980 to 1981. In addition, she served as an Adjunct Professor in the Mechanical Engineering Department at the University of Colorado in Boulder, Colorado, from 1997 to 1998. Dr. Kaplan is an Associate Fellow of AIAA, and a member of AIChE and Tau Beta Pi. She has served on review panels for AFOSR, NSF, and DOE and is author or coauthor of more than 45 journal articles and conference papers.



ELI LIVNE received his B.Sc. (1974) and M.Sc. (1982) degrees in Aeronautical Engineering from the Technion—Israel Institute of Technology. From 1975 to 1984 he worked in the areas of structural dynamics, aeroelasticity, and aeroservoelasticity. He received his Ph.D. in Aerospace Engineering (1990) from the University of California, Los Angeles, and joined the Department of Aeronautics and Astronautics at the University of Washington in Seattle, where he is currently a Professor. Dr. Livne's research spans structures, structural dynamics, unsteady aerodynamics, flight mechanics, active control, and airplane multidisciplinary design optimization, with an emphasis on design-oriented modeling techniques. This work contributed to the development of efficient computational tools for integrated synthesis of actively controlled aircraft and to some of the first studies in integrated multidisciplinary aeroservoelastic design. Dr. Livne's research has been supported by the U.S. Air Force, U.S. Navy, NASA, the National Science Foundation (NSF), and Boeing. He is a former member of the AIAA Multidisciplinary Design Optimization Technical Committee, the NASA/Boeing HSCT Aeroelastic Concept Evaluation Team, and the Boeing HSCT Aeroservoelastic working group. He is a recipient of a UCLA School of Engineering and Applied Science 1989–1990 Outstanding Ph.D. award and a 1992 NSF National Young Investigator Award. He won the 1998 ASME/Boeing Structures and Materials Award for the best paper given at the 1997 38th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference. He edited a January–February 1999 special Multidisciplinary Design Optimization issue of the *Journal of Aircraft* and is an Associate Fellow of AIAA.



ROBERT P. LUCHT is currently a Professor in the School of Mechanical Engineering at Purdue University. He received his B.S. degree in Nuclear Engineering and his M.S. and Ph.D. degrees in Mechanical Engineering, all from Purdue University. He joined the Combustion Research Facility at Sandia National Laboratories in 1983 and was a member of the technical staff and then a department manager. In 1992, he became a faculty member at the University of Illinois at Urbana-Champaign. From 1998 to 2002 he was the G. Paul Pepper Professor of Mechanical Engineering at Texas A&M University. The focus of his research is the development and application of laser diagnostic techniques and optical sensor systems for probing both reacting and nonreacting flows. Currently, his research group is developing dual- and triple-pump CARS techniques for multiparameter measurements in combusting flows, investigating the potential of electronic resonance, dual-pump CARS for sensitive measurements of minor species, and investigating the physics of polarization spectroscopy and degenerate four-wave mixing. His group is also developing diode-laser-based optical absorption sensors for sensitive measurements of pollutant species, using sum- and difference-frequency mixing techniques to generate ultraviolet and midinfrared laser radiation, respectively. He is a member of the American Society of Mechanical Engineers, the Society of Automotive Engineers, the Optical Society of America, and the Combustion Institute. He is a Fellow of the Optical Society of America and an Associate Fellow of AIAA. He is the author or coauthor of over 70 archival journal papers.



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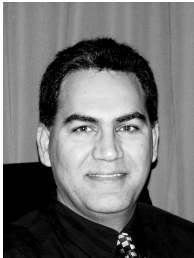
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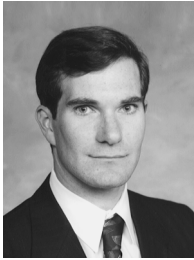
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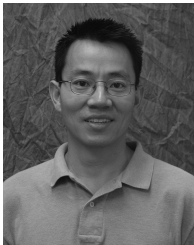
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