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Announcements, Comments, and Acknowledgments

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AS MY last January editorial for *AIAA Journal*, I would like to update and reprint a letter that appeared in the journal and was published several years ago. This was a special commentary on authors, reviewers, and editors. It was most appropriate then, as it is now.

It is always difficult to be an editor and to have to turn down interesting and perhaps controversial papers. This problem was made particularly clear to me several years ago by the controversy that arose over a rather unusual paper on a radical but important propulsion topic. As many of you know, we have *Guest Editors* for special sections and for specific papers. This is one of the more difficult letters that was written by one of our Guest Editors. Only the names have been changed to protect the innocent.

Dr. Marlowe M. Brown
Department of Astrodynamics
University of Texas at Big Bend

Dear Dr. Brown,

After careful examination of your manuscript (tracking number 11378524562, log number J25558743.2) entitled "Corbamite, An Insulator Against Gravity," we have concluded that it is not suitable for publication in *AIAA Journal*. This decision is final and further correspondence on this subject will serve no useful purpose.

Because the decision may seem somewhat harsh, let me say what I can to explain how it was reached. The editors do appreciate that you are working under difficult circumstances. When the senior author of a paper is deceased, it is always hard for the junior author to complete the work in an appropriate manner. Also, we assure you that we do believe you. You have told us that, with his dying breath, Professor Clarke handed you his notebook and said, "Have this published in *AIAA Journal*." Such an action would be completely in character for Professor Clarke, because he was a true aerospace scientist and engineer as well as a distinguished Honorary Fellow of AIAA.

Our believing your account of the circumstances under which Professor Clarke made this final declaration (that is, while he was expiring from disintegrator-ray wounds suffered during your escape from the City of Disembodied Brains on Altair IV) is a somewhat different matter. There is really no need to discuss that issue now. Whatever the highly emotional circumstances of Professor Clarke's passing may have been, they have no relevance to publication in *AIAA Journal.*

In addition to the appropriateness of the content, the final decision as to whether a paper should be published in *AIAA Journal* is based on the comments of highly qualified referees. In the case of your manuscript, these comments were uniformly negative, and I must add that I completely agree with them. Your paper claims the existence of a substance that insulates against gravity, this being the basis of the "ether flyer" by which you and the late Professor Clarke traveled to Altair IV. Such a substance completely violates the recently developed elementary gravitational potential-energy propulsion theory (see Potter and Granger, *AIAA Journal*, to appear in April 2009). If this substance could exist at all, it would have to be totally different from what you envision anyway.

Because, Dr. Brown, you profess yourself to be a "man of action," I am not surprised that you find the preceding difficult to understand. If I may make a suggestion, perhaps you should locate and study texts in freshman physics, practical theory of wormholes, and propulsion concepts for macrogravity applications. These should explain to you what is obvious to everyone else.

Furthermore, although I can readily understand why you wish to visit the referees and personally demonstrate your antigravity apparatus to them, I cannot reveal their identities to you. Referees are anonymous by long-standing traditions, one purpose of this tradition being to prevent acrimonious confrontations of the very kind you seek.

Finally, I must tell you that your continued visits to the offices at AIAA Headquarters are counterproductive. As you know, these offices are located on the fifth floor, and your floating in and out through their windows is a considerable distraction to the clerical staff.

Sincerely yours,

R.K. Weasley, Ph.D., P.E.
Guest Editor
AIAA Journal

Cc: R.K. Lyon

It has been another relatively smooth year for *AIAA Journal*! Thanks to the terrific job done by all of our Editors, the Editorial Advisory Board, and the staff at AIAA Headquarters, we continue to thrive. Aerospace Letters continue to expand in scope. We urge you to remember us when you think of something new, important, and worthy of really expedited publication. To outward appearances, WriteTrack has been performing smoothly. The truth, however, is that the system is obsolete and is slated to be replaced with one that will better integrate publications with the rest of AIAA activities.

Staff and Editorial Changes. There have been a number of changes in the editorial staff in the last year.

We had 11 Associate Editors whose terms ended in December 2008, and five of these are continuing for another term. Continuing Associated Editors are Carlos E. Cesnik, *University of Michigan*; Frank N. Coton, *University of Glasgow, Scotland*; Thomas L. Jackson, *University of Illinois at Urbana–Champaign*; Eli Livne, *University of Washington*; and Zhi J. Wang, *Iowa State University*. We thank them for past service to *AIAA Journal* and for their willingness to continue.

Continuing Associate Editors are Keisuke Asai, *Tohoku University, Japan*; Richard J. Astley, *University of Southampton, England*; Christophe Bailly, *Ecole Centrale de Lyon, France*; Balakumar Balachandran (Deputy Editor), *University of Maryland*; Philip Beran, *U.S. Air Force Research Laboratory*; Ndaona Chokani, *ETH Zürich, Switzerland*; Jonathan E. Cooper, *University of Manchester, England*; Song Fu, *Tsinghua University, China*; Datta V. Gaitonde, *U.S. Air Force Research Laboratory*; Peyman Givi, *University of Pittsburgh*; Mark Glauser, *Syracuse University*; Jay P. Gore, *Purdue University*; Ephraim J. Gutmark, *University of Cincinnati*; Kazhikathra Kailasanath (Deputy Editor), *U.S. Naval Research Laboratory*; Rakesh K. Kapania, *Virginia Polytechnic Institute and State University*; Robert P. Lucht, *Purdue University*; Achille Messac, *Rensselaer Polytechnic Institute*; Roger Ohayon, *Conservatoire National des Arts et Métiers, France*; P. Frank Pai, *University of Missouri–Columbia*; Anthony Palazotto, *Air Force Institute of Technology*; Allen Plotkin, *San Diego State University*; Roger H. Rangel, *University of California, Irvine*; Jubaraj Sahu, *U.S. Army Research Laboratory*; Pasquale M. Sforza, *University of Florida*; Kunigal N. Shivakumar, *North Carolina A&T State University*; Anthony M. Springer, *NASA Headquarters*; Anatoli Tumin, *University of Arizona*; Fu-Shang Wei, *Kaman Aerospace Corporation*; Thomas Zang, *NASA Langley Research Center*; and

Xiaolin Zhong, *University of California, Los Angeles*. Their past and continuing services are very much appreciated.

New Associate Editors who began after January 2009 are Kyle Anderson, *University of Tennessee*; Anastasio Lyrintzis, *Purdue University*; Ahmed Naguib, *Michigan State University*; Assimina Pelegri, *Rutgers University*; Alok Sinha, *The Pennsylvania State University*; Miguel Visbal, *U.S. Air Force Research Laboratory*; Norman Wereley, *University of Maryland*; and Karen Willcox, *Massachusetts Institute of Technology*. Their willingness to join our staff is greatly appreciated.

A very, very special thanks for their years of service to our retiring editors: Noel T. Clemens, *University of Texas at Austin*; Carolyn R. Kaplan, *U.S. Naval Research Laboratory*; Kenneth G. Powell, *University of Michigan*; Ajit K. Roy, *U.S. Air Force Research Laboratory*; Gregory A. Schoeppner, *U.S. Air Force Research Laboratory*; and Jamshid A. Samareh, *NASA Langley Research Center*.

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*; Geneviève Comte-Bellot, *Ecole Centrale de Lyon, France*; Earl H. Dowell, *Duke University*; Edward M. Greitzer, *Massachusetts Institute of Technology*; Ronald K. Hanson, *Stanford University*; 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*; William S. Saric, *Texas A&M University*; George S. Springer, *Stanford University*; 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 Vice President of Publications, for his help and encouragement. I would also thank the new Director of Publications, Rodger Williams; Amanda Maguire, Product Manager of Journals; Michael Baden-Campbell, Managing Editor; and Michael McGinnes, our Applications Specialist.

A very special thanks to Kailas Kailasanath and Bala Balachandran, our Deputy Editors, and Carter Shields, our Editorial Assistant, who have worked diligently to ensure that *AIAA Journal* runs smoothly and maintains its excellent quality.

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 follows.

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 microdynamic 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 a 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 has just finished a term as 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*. Dr. Oran received the Oppenheim Prize (IDERS, 1999), the Zeldovich Gold Medal (CI, 2000), the Dryden Distinguished Lectureship in Aerospace Research (AIAA, 2002), the Achievement Award of the Society of Women Engineers (2006), and the degree of *Docteur Honoris Causa* from the École Centrale de Lyon (2006). She is a Fellow of the AIAA and APS and a Member of the National Academy of Engineering. Dr. Oran has published more than 350 technical papers, written many review articles, and coauthored the book *Numerical Simulation of Reactive Flow* (Cambridge University Press, 2001).

Deputy Editors

BALAKUMAR BALACHANDRAN is a Professor and Associate Chair of mechanical engineering at the University of Maryland, where he has been since 1993. He received his B. Tech. in naval architecture from the Indian Institute of Technology and his M.S. in aerospace engineering and his Ph.D. in engineering mechanics from Virginia Polytechnic Institute and State University. His research interests include nonlinear phenomena, dynamics and vibrations, and control. The publications that he has authored/coauthored include over 45 journal publications, a textbook entitled *Applied Nonlinear Dynamics: Analytical, Computational, and Experimental Methods* (Wiley, 1995), and a textbook entitled *Vibrations* (Thomson, 2004). He serves on the Editorial Board of the *Journal of Vibration and Control* and is an Associate Editor of the *Journal of Computational and Nonlinear Dynamics*. He is a Fellow of the American Society of Mechanical Engineers (ASME); a Senior Member of the AIAA; and a Member of the American Academy of Mechanics, the Acoustical Society of America, Sigma Xi, and the International Society for Optical Engineering. He served as the Chair of the ASME Applied Mechanics Division Technical Committee on Dynamics and Control of Structures and Systems from 2005 to 2007, and he currently serves as the Vice Chair of the ASME Design Engineering Division Technical Committee on Multibody Systems and Nonlinear Dynamics.

KAZHIKATHRA (KAILAS) KAILASANATH has been the Head of the Center for Reactive Flow and Dynamical Systems at the Naval Research Laboratory since 1989, where 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. Before that, he received his M.S. in aerospace engineering from the Georgia Institute of Technology in 1979 and his B. Tech. in aeronautical engineering from the Indian Institute of Technology 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 previously an Associate Editor of the *AIAA Journal* and is currently the Deputy Editor. He is also on the Editorial Board of the journal *Combustion Theory and Modeling*. He is a past Chair of the AIAA Propellants and Combustion Technical Committee.

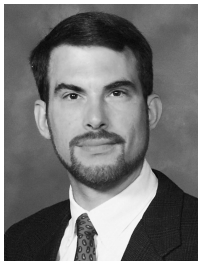
Associate Editors

DR. WILLIAM K. ANDERSON is a professor at the National Center for Computational Engineering located at the University of Tennessee at Chattanooga. There, he teaches advanced graduate classes in computational fluid dynamics and in computational design. He conducts and directs research projects in developing and applying computational algorithms for simulation and design for a diverse range of applications including: aeronautics, solid-oxide fuel cells, radio frequency plasmas and electromagnetics. He received the University of Tennessee Research Award in 2007. Prior to coming to the University of Tennessee, Dr. Anderson worked for over 18 years at the NASA Langley Research Center in Hampton, Virginia. While at NASA, he developed and analyzed algorithms for computing viscous flows on structured and unstructured grids, early development of upwind schemes, adaptive meshing, continuous and discrete sensitivity analysis, computational design, time-accurate flows, multigrid algorithms, and flows in heavy gasses. Dr. Anderson received a Ph.D. in aerospace engineering in 1986 from Mississippi State University. He is an associate fellow of the AIAA, a recipient of the AIAA Lawrence Sperry Award and the NASA Exceptional Achievement Medal. Dr. Anderson is a registered patent agent with the United States Patent and Trademark Office and is a registered professional engineer.

KEISUKE ASAI is a Professor of aerospace engineering at Tohoku University. He received a B.S. in aeronautical engineering from Kyoto University in 1980 and a Ph.D. in aeronautics and astronautics from the University of Tokyo in 1995. He was a research scientist at the National Aerospace Laboratory of Japan from 1980 to 2003, where he studied induced-drag reducing devices such as winglets and wing-tip fins, high-speed drag characteristics of powered-lift airplanes, and pressure- and temperature-sensitive paints for aerodynamic measurements. He was also engaged in tunnel-to-tunnel data comparison programs with NASA, ONERA, and the Aeronautical Research Institute of Sweden. During 1988–1989, he was a Visiting Researcher in the Experimental Techniques Branch of the Transonic Aerodynamics Division at NASA Langley Research Center, where he studied hot-jet simulation in a cryogenic wind tunnel. From 1999–2003, he managed the Techno-Infrastructure Program called "MOSAIC," which is an interdisciplinary research project with chemists and material scientists to develop molecular sensor technology for aerodynamic measurements. His current research interests involve development of wind-tunnel testing techniques and measurement technology for unsteady flows, hypersonic wind tunnels, flight dynamics, and microscale gas flows. He is the recipient of the 1998 AIAA Aerodynamics Measurement Technology Best Paper Award, the 2002 AIAA Outstanding Paper Award, and the 2003 Japan Society for Aeronautical and Space Sciences Technical Award. He is a Member of the AIAA Aerodynamic Measurement Technology Technical Committee and the International Congress on Instrumentation in Aerospace Simulation Facilities panel. He has published over 40 papers in the archival literature on experimental aerodynamics.

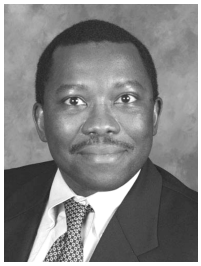
JEREMY ASTLEY is a Professor of computational acoustics at the Institute of Sound and Vibration Research (ISVR) at the University of Southampton and is director of the Rolls-Royce University Technology Centre in gas turbine noise. He is a Member of the Confederation of European Aerospace Societies Aeroacoustics Subcommittee and of the Scientific Committee of the X-3 Noise network, funded by the European Commission (EC) to coordinate research on aircraft noise in Europe. Professor Astley has played a leading role in applying finite and boundary element methods to problems in acoustics and aeroacoustics and is the author of more than 50 journal articles on this topic. A particular interest in recent years has been the development of special finite and infinite elements for short-wave problems. Professor Astley currently contributes to a number of programs funded by the EC and United Kingdom that are directed at the development of improved acoustic technologies for turbofan intake and bypass ducts. Before his current appointment at the ISVR, Prof. Astley held the Chair of mechanical engineering at the University of Canterbury. He is a Fellow of the Royal Society of New Zealand, the Institution of Professional Engineers of New Zealand, and the International Institute of Acoustics and Vibration. He is a Member of the Editorial Boards of the *International Journal for Numerical Methods in Engineering* and *Communications in Numerical Methods in Engineering* and is an Associate Editor of the *Journal of Sound and Vibration*.

CHRISTOPHE BAILLY is currently a Professor of fluid mechanics and acoustics at the École Centrale de Lyon (ECL, engineering school, France) and a Member of the Institut Universitaire de France. He received his Ph.D. in aeroacoustics from the École 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, at ECL in 1995. He served as a Lecturer in turbulence at the École Centrale Paris from 1995 to 2006, and he has been a Lecturer in aeroacoustics at the École Nationale Supérieure des Techniques Avancées since 2001. His research activities lie in the area of turbulence and noise generation, with current emphasis on computational aeroacoustics, compressible large-eddy simulation, and jet noise and sound wave propagation. He is a coauthor, with Geneviève Comte-Bellot, of one textbook in turbulence, and he has authored or coauthored over 50 papers in refereed journals and more than 120 conference papers. He is also a recipient of the Yves Rocard Prize from the French Acoustical Society (1996) and the Alexandre Joannidès Prize from the French Academy of Sciences (2001).



PHILIP S. BERAN is a Principal Research Aerospace Engineer at the U.S. Air Force Research Laboratory (AFRL), Air Vehicles Directorate, Structures Division. He received B.S. in engineering physics from Cornell University (1982) and his M.S. and Ph.D. in aeronautics from the California Institute of Technology (1989). Dr. Beran has specialized in the computational analysis of coupled (e.g., aeroelastic) systems that exhibit various nonlinear phenomena, including bifurcation and limit-cycle oscillation. Much of his research has emphasized the representation of these behaviors with physically meaningful reduced-order models, which he hopes will be the pathway for the design of more capable and reliable aircraft. Recently, he has examined the challenges associated with the computational design of flapping-wing micro air vehicles and has sought to exploit aeroelastic interactions in the design process to increase the performance of these types of vehicles. Before joining the AFRL (1997), he served on the faculty of the Air Force Institute of Technology (AFIT) in the Department of Aeronautics and Astronautics. He was promoted to Associate Professor at AFIT in 1994. He has authored or coauthored over 120 publications. He is an Associate Fellow of the AIAA and has served on the AIAA Structural Dynamics, Multidisciplinary Design Optimization, and Non-Deterministic Approaches Technical Committees. He has coinstructed the AIAA courses on "Modern Analysis of Nonlinear Systems with Applications" and "Aeroelasticity: State-of-the-Art Practices."

CARLOS CESNIK is an Associate Professor of aerospace engineering at the University of Michigan and Director of the Active Aeroelasticity and Structures Research Laboratory. He earned an M.E. in aeronautics (1987) and an M.S. in aeronautical engineering (1989) from the Instituto Tecnológico de Aeronáutica and an M.S. (1991) and a Ph.D. (1994) in aerospace engineering from the School of Aerospace Engineering at Georgia Institute of Technology. Professor Cesnik is an Associate Fellow of the AIAA and a Member of the AIAA Structural Dynamics and Adaptive Structures Technical Committees. He has written over 120 archival journal papers, conference papers, and technical reports, and he has given several invited lectures in the areas of fixed- and rotary-wing aeroelasticity, smart structures, structural mechanics, and structural health monitoring. Previous 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 Massachusetts Institute of Technology. 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 a cannon-launched unmanned aerial vehicle and has been selected for the 2002 ASME–Boeing Structures and Materials Award "on the basis of originality and significance to the field of aerospace engineering" associated with such work. Professor Cesnik is currently an Associate Editor for the *AIAA Journal* and the *Journal of Fluids and Structures*.



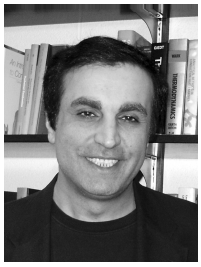
NDAONA CHOKANI received his B.A. in engineering science from Oxford University in 1984 and his Ph.D. in engineering from Cambridge University in 1988. He is at the Swiss Federal Institute of Technology Zürich. Previously, he served on the faculty at North Carolina State University and then on the faculty at Duke University, where he was a Professor of mechanical engineering and materials science. His current research activities focus on energy conversion in renewable energy and in plasma light sources, the development and application of novel instrumentation, and the development of digital signal processing techniques. His previous research has focused on experimental studies of hydrodynamic stability in compressible flows and shockwave/boundary-layer interactions; these studies were variously supported by the U.S. Air Force Office of Scientific Research, the U.S. Air Force Research Laboratory, NASA, and the National Science Foundation. He has previously served on the National Academies' Air Force Science and Technology Board, as an Associate Editor of the *Journal of Aircraft*, and as a Member of the AIAA's Transition Study Group, Aerodynamics Measurement Technology Technical Committee, and Thermophysics Technical Committee. He is a corecipient of a 2008 award for the best paper presented at the 2007 IGTI Turbo Expo. He is an Associate Fellow of the AIAA and a Member of the American Society of Mechanical Engineers and the Society of Photo-Optical Instrumentation Engineers.

JONATHAN COOPER is a Professor of engineering at the University of Manchester. He received a B.S. 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, 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 in 1995 and 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 and 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 a Professor of low-speed aerodynamics and Associate Dean (Research) in the Faculty of Engineering at the University of Glasgow. He received his Ph.D. in aerospace engineering at the University of Glasgow in 1988. After a brief period with Rolls-Royce, 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 was 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 American Society of Mechanical Engineers, the American Helicopter Society, the Royal Aeronautical Society, and the Institute of Mechanical Engineers.

SONG FU is a Professor of the School of Aerospace at Tsinghua University. He received his B.S. from Imperial College London in 1983 and his Ph.D. from Manchester University in 1988. Since then, he joined the Department of Engineering Mechanics at Tsinghua University as a faculty member. He is presently the Deputy Dean of the School of Aerospace. Professor Fu serves as a Vice President of the Chinese Aerodynamics Society and the Chairman of the Fluid Mechanics Division of the Chinese Society for Theoretical and Applied Mechanics. Professor Fu was the recipient of the Fifth National Science and Technology Awards for Outstanding Young Researchers in China in 1997. In the 18th Conference of the International Society for Air Breathing Engines (ISOABE) in 2007, he was awarded The ISOABE International Collaboration Accomplishment Award. Professor Song Fu's research interests cover the fields of turbulence modeling, aircraft aerodynamics, and casing treatment for compressor rotors. He is currently representing China in a number of advisory committees for international symposiums, including turbulence and shear flow phenomena; turbulence, heat and mass transfer; and computational fluid dynamics. He is also an Advisory Editor for *Flow, Turbulence and Combustion*.

DATTA V. GAITONDE received his B. Tech. from the Indian Institute of Technology in 1983 and his M.S. and Ph.D. 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 U.S. 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 Computational Fluid Dynamics Subcommittee.



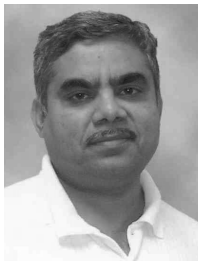
PEYMAN GIVI is the William K. Whiteford Chair and Professor of mechanical engineering at the University of Pittsburgh. Previously, he held the position of Distinguished Professor at the State University of New York at Buffalo and also worked as a Research Scientist at Flow Industries, Inc. He has had visiting appointments at the NASA Langley Research Center and the NASA John H. Glenn Research Center at Lewis Field 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 a B.E. from Youngstown State University in 1980, where he was named the 2004 Distinguished Alumnus, and a Ph.D. from Carnegie–Mellon University in 1984.

MARK GLAUSER is a Professor of mechanical and aerospace engineering at Syracuse University. With his coworkers and postdoctoral, graduate, and research experience with undergraduates students, Prof. Glauser conducts major experimental, computational, and theoretical efforts to apply low-dimensional models to turbulent and transitioning flows for understanding and control. Flows studied range from high-speed aerospace-type applications to those around thermal-breathing manikins within the microenvironment. Professor Glauser has served as Program Manager for the Turbulence and Internal Flows Program at the U.S. Air Force Office of Scientific Research (AFOSR) from 1996–1999; meeting Chair for the 56th American Physical society Annual Meeting of the Division of Fluid Dynamics (November 2003); Technical Chair for the AIAA Summer Fluid Dynamics Meeting (June 2006); and as an ABET, Inc. evaluator for aerospace engineering programs since 2004. Professor Glauser has obtained more than $10 million in research funding as Phase I (PI) or Co-Phase I (Co-PI) from the AFOSR, National Science Foundation, NASA, Environmental Protection Agency, Dantec, United Technologies, and others. His current funding totals more than $6 million as PI or Co-PI. Professor Glauser has published more than 100 peer-reviewed publications and conference proceedings and has presented more than 80 invited presentations and keynote talks worldwide. Over the past 20 years, he has mentored several postdoctoral students and more than 30 Ph.D. and M.S. students. He is a Fellow of the American Society of Mechanical Engineers, the American Physical Society, and the Institute of Physics, and he is an Associate Fellow of the AIAA and a Fulbright Scholar (France). Glauser received his B.S. in mechanical engineering (1982) and his Ph.D. (1987) in fluid dynamics from the State University of New York at Buffalo.

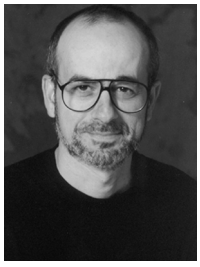
JAY (JAYAVANT) P. GORE, Vincent P. Reilly Professor within the School of Mechanical Engineering at Purdue University, received his B.E. (M.E.) from the University of Poona (1978) and his M.S. (1982) and Ph.D. (1986) in mechanical engineering from Pennsylvania State University. He completed a postdoctoral training program in aerospace engineering at the University of Michigan, Ann Arbor, before 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 *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. 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 Voorhies 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, and biomedical fluid dynamics and acoustics. His research has been sponsored by the U.S. Air Force Office of Scientific Research, Office of Naval Research, NASA, National Science Foundation, Defense Advanced Research Projects Agency, National Aerospace Plane, General Electric, Boeing, Goodrich Aerospace, and Halliburton. He has consulted numerous times for 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 has published over 110 papers in archival journals, is a coinventor of 57 U.S. and European Union patents, and has presented and published over 360 conference papers. He is an associate Fellow of the AIAA.

THOMAS L. JACKSON is a Senior Research Scientist at the Center for Simulation of Advanced Rockets, a Computational Science and Engineering affiliate, and an Adjunct Professor of aerospace engineering, all at the University of Illinois at Urbana–Champaign. He received his mathematics Ph.D. from Rensselaer Polytechnic Institute 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. He became an Assistant Professor (1987), then an Associate Professor (1992), of mathematics and statistics at Old Dominion University. 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 is an Associate Fellow of the 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.



RAKESH K. KAPANIA is a professor of aerospace and ocean engineering at Virginia Polytechnic Institute and State University. He obtained his B.S. in aeronautical engineering from Punjab Engineering College, his M.S. in aerospace engineering from the Indian Institute of Science, and his Ph.D. in aeronautics and astronautics from Purdue University. Dr. Kapania's research interests are in computational structural mechanics, plates and shells, composite structures, structural health monitoring, inflatable structures, aeroelasticity, multidisciplinary analysis, and design optimization. Dr. Kapania has coauthored more than 95 archival journal papers and more than 160 papers in conference proceedings in these areas. He has guided 25 Ph.D. students (another nine are in progress) and over 30 M.S. theses (an additional two are in progress). From 1995–1997, he served as an Associate Editor of the *AIAA Journal* and is presently a Member of the Editorial Boards of *Smart Structures and Systems* and the AIAA Education Series. A former Technical Editor of the *Applied Mechanics Reviews*, he is a recipient of Boeing's Welliver Fellowship for 1996 and the Dean's Award for Excellence in Research in 2000. He has recently been selected by NASA to lead a combined NASA, university, and industry program on unitized structures.



ELI LIVNE received his B.S. (1974) and M.S. (1982) 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 (UCLA), and he 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 The Boeing Company. He is a former Member of the AIAA Multidisciplinary Design Optimization Technical Committee, the NASA/Boeing High Speed Civil Transport (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 he is an Associate Fellow of the AIAA.

ROBERT P. LUCHT is the Ralph and Bettye Bailey Professor of combustion in the School of Mechanical Engineering at Purdue University. He received his B.S. in nuclear engineering in 1977 and his M.S. and Ph.D. in mechanical engineering in 1979 and 1981, respectively. All degrees were from Purdue University. After receiving his Ph.D., he worked at the Combustion Research Facility at Sandia National Laboratories in Livermore, California. In 1992, he left Sandia to accept a position at the University of Illinois at Urbana–Champaign. In 1998, he left the University of Illinois to become the G. Paul Pepper Professor at Texas A&M University. In 2002, he accepted his present position at Purdue University. His research activities focus on the development and application of advanced laser diagnostic techniques for probing both reacting and nonreacting flows. His present research activities include fundamental experimental and theoretical studies of the physics of polarization spectroscopy, electronic-resonance-enhanced coherent anti-Stokes Raman scattering (CARS), and femtosecond CARS. Applied projects include the development of advanced diagnostic techniques for probing hypersonic shear layers, a study of transient mixing in a rocket chamber simulation device, dual-pump CARS measurements in a gas turbine combustor, and development of diode-laser-based sensors for ultraviolet and midinfrared absorption measurements. Professor Lucht has authored or coauthored over 110 refereed articles in archival journals. In 1998, he was elected as a Fellow of the Optical Society of America, and in 1999, he was elected as an Associate Fellow of the AIAA.

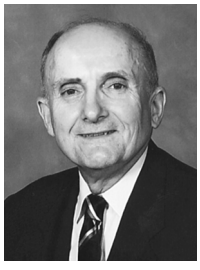
ANASTASIO S. LYRINTZIS is a Professor of the School of Aeronautics and Astronautics at Purdue University. He joined Purdue in 1994 after serving seven years on the faculties of the University of Minnesota, Cornell University, and Syracuse University. He is the School's Graduate Chair and the Director of Purdue's Computational Science and Engineering interdisciplinary program. His research interests are computational aeroacoustics and aerodynamics. His goal is to investigate noise reduction for rotorcraft and jet flows. He has coauthored 54 journal papers and 92 conference papers, and his research has been supported by several external grants. He has advised or coadvised 12 Ph.D. and 15 M.S. students. Dr. Lyrintzis teaches courses in fluid mechanics, aerodynamics, aeroacoustics, and rotorcraft aerodynamics, and he won the School's Teaching Award in the fall of 2002. Dr. Lyrintzis is a registered Professional Engineer, a Purdue University Faculty Scholar, an AIAA Associate Fellow, an American Society of Mechanic Engineers (ASME) Fellow, and a Boeing Welliver Fellow. He has been a Member of the AIAA Aeroacoustics Technical Committee (Vice Chair 2005–2007 and Chair 2007–2009), the American Helicopter Society (AHS) Acoustics Committee, and the ASME Coordinating Group for Computational Fluid Dynamics. He has coorganized the 10th AIAA/CEAS Aeroacoustics Conference and Exhibit, Manchester, England, U.K., as well as several sessions and forums in AIAA, ASME and AHS conferences. Dr. Lyrintzis has participated in the development of the award-winning (American Helicopter Society, Howard Hughes Award, and NASA Group Achievement Award) TRAC (Tiltrotor Aeroacoustic Codes) system of codes from NASA Langley Research Center.

ACHILLE MESSAC is a Professor of mechanical and aerospace engineering at the Rensselaer Polytechnic Institute. He received his B.S. (1981), M.S. (1982), and Ph.D. (1986) in aeronautical and astronautical engineering at the Massachusetts Institute of Technology. He was a Senior Member of the technical staff at Draper Laboratory until 1994, where he led research in the areas of multibody dynamics, structural optimization, and control structure integrated design. He led such NASA efforts as the development of a large simulation for the dynamics and control of the stabilized payload deployment system, a two-arm payload manipulator for the shuttle orbiter, for which he received an award. In 1994, he joined the Mechanical, Industrial and Manufacturing Engineering Department at Northeastern University, where he led the successful reform of the academic design program. He is currently leading research in the areas of design and optimization. He is a Fellow of AIAA, a Fellow of the American Society of Mechanic Engineers, the Former Chair of the AIAA Multidisciplinary Design Optimization (MDO) Technical Committee (TC), and a former Member of the AIAA Structural Dynamics TC. He is on the Editorial Boards of the *Optimization and Engineering Journal* and the *Structural and Multidisciplinary Optimization Journal*, and he was formerly on the Editorial Board of the AIAA Education Series. He is also active internationally. He was General Chair of the 10th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference and of the 1st MDO Specialist Conference. He has authored or coauthored over 150 publications. He was a recipient of the prestigious CAREER award of the National Science Foundation and, recently, of the National AIAA Sustained Service Award.

DR. AHMED M. NAGUIB is an Associate Professor in the Mechanical Engineering Department at Michigan State University. He obtained his bachelor degree in mechanical engineering from Ain Shams University, Cairo, Egypt in 1986; his Masters and Ph.D. degrees were acquired in 1989 and 1992, respectively, in mechanical and aerospace engineering from Illinois Institute of Technology, Chicago, USA. Subsequently, he was a senior research associate and visiting assistant professor at Illinois Institute of Technology before becoming a faculty member at Michigan State University in 1998. He has been a visiting scientist of NASA Langley Research center several times; and spent a sabbatical leave at the Department of Aeronautics, Imperial College, London in the 2006-2007 academic year. Dr. Naguib's research interests are in the area of experimental fluid dynamics, particularly in the field of turbulence and transition physics and control, separated flows, low-Reynolds-number aerodynamics, and development of innovative sensors for wall-pressure and wall-shear-stress measurements using conventional and MEMS technology. His research work has been funded by the National Science Foundation, Office of Naval Research, NASA, Department of Energy, and the state of Michigan. This work has resulted in fifty archival journal and conference papers, two book chapters and two patents. He has also supervised six Ph.D. and several Masters students. Dr. Naguib is an active member of AIAA and its Aerodynamic Measurement Technology (AMT) technical committee. As part of his services to the committee, he organized the AMT conference of the AIAA Aerospace Sciences Meeting and Exhibition in January 2007 and 2008; and served as guest editor for an AMT special section of the AIAA Journal in 2008.

ROGER OHAYON is currently a Professor and Chair of mechanics at the Conservatoire National des Arts et Metiers and director of the Structural Mechanics and Coupled Systems Laboratory. After obtaining a Ph.D. from the University of Paris in 1971, he joined the National French Aerospace Laboratory (ONERA) before leaving for academia in 1992. He has made contributions to the fields of fluid–structure interactions such as hydroelasticity, sloshing, structural–acoustic interactions (for example, for liquid-propelled launchers), structural damping, and smart structures. His research in computational models for fluid–structure interactions has provided the aerospace engineering society with effective tools toward better design of structures containing liquids and gas. He is the coauthor of three books on fluid-structure interaction, structural-acoustics, and vibration, and he is the coauthor of 150 papers in proceedings and refereed international journals. He is a Fellow of the International Association of Computational Mechanics (IACM) and recipient of the 2004 IACM Award; he is also a Fellow of the American Society of Mechanical Engineers and of the Association Aeronautique et Astronautique de France. In 1989, he received an award from the French Academy of Sciences for his research on fluid–structure interaction. He is currently a Member of the Editorial Board of several international journals. He is also the past President of the French Computational Structural Mechanics Association. In April 2007, he received the Adaptive Structure Prize at the AIAA/ASME/SDM/ASMS/AHS conference.

PERNGJIN FRANK PAI received his B.S. in mechanical engineering from Tamkang University, his M.S. in mechanical engineering from National Taiwan University, and his Ph.D. in engineering mechanics from Virginia Polytechnic Institute and State University. Dr. Pai is a C. W. LaPierre Professor of mechanical and aerospace engineering at the University of Missouri–Columbia and the Director of the Structural Mechanics and Controls Laboratory. His research concentrates on the design, analysis, testing, damage detection, and control of highly flexible structures, composites, and smart structures. His publications include 62 referred journal papers, 100 conference papers, one 746-page graduate-level book entitled *Linear and Nonlinear Structural Mechanics* (Wiley Interscience, 2004), published with Dr. Ali H. Nayfeh, and a 742-page graduate-level book entitled *Highly Flexible Structures: Modeling, Computation and Experimentation* (AIAA, 2007).



ANTHONY N. PALAZOTTO is a Professor of aerospace engineering at the Air Force Institute of Technology. He received his Ph.D. from New York University in 1968 with a specialty in the area of solid mechanics, including a minor in applied mathematics. He has been involved in research and academics since that time. Dr. Palazotto's field of expertise includes nonlinear mechanics, shell analysis, mechanics of composite materials, nonlinear dynamics, and viscoplasticity. He recently worked on the problem of characterizing composite materials acting under high-velocity impact. In addition, he has carried out the analysis of micro air vehicles, considering nonlinear movement. Dr. Palazotto has received more than $4 million in funding from various U.S. Air Force Directorates, including the U.S. Air Force Office of Scientific Research. Dr. Palazotto has over 422 presentations and publications, 187 of which are in archival journals. He is the coauthor of a text entitled *The Nonlinear Analysis of Shell Structures* (AIAA, 1992). He is a Fellow of the American Society of Civil Engineers, the American Academy of Mechanics, and the AIAA, in addition to being a professional engineer.

ASSIMINA A. PELEGRI is a faculty member of the Mechanical and Aerospace Engineering Department at Rutgers, The State University of New Jersey since 1997. Dr. Pelegri received her Ph.D. (1997) and her MS (1994) in aerospace engineering from Georgia Institute of Technology. She is the recipient of a National Science Foundation CAREER award for studies in the area of interfacial mechanics of anisotropic materials and a Pi Tau Sigma/American Society of Mechanical Engineers (ASME) Gold Medal for her contribution to the engineering field (2002). Dr. Pelegri founded and directs the Advanced Structures and Materials Laboratories for materials fabrication and structural diagnostics at Rutgers. She is intern of the ASME Minority Leadership program and has served as an intern on the ASME boards of Government Relations and Public Affairs. Her career goal is to advance methods and tools for predicting and controlling catastrophic structural failure in critical applications in which the loss of lives and property is imminent. Her current research involves analytical solid mechanics, state-of-the-art experimental damage diagnostics, statistical quality control and reliability assessment of composite structures, and interfacial reliability of micro- and nanostructures. Furthermore, she applies her composite materials expertise in the medical diagnosis of nonpalpable tumors: specifically, for the in vivo differentiation between malignant and benign tumors found in breast and prostate tissues. She is an active Member of the AIAA and ASME Composite Materials and Applied Mechanics Committees, an invited participant of the National Academy of Engineers' Frontiers of Engineering Symposium (2003), an inducted Member of Georgia Institute of Technology's Council of Outstanding Young Engineering Alumni, an Amelia Earhart/Zonta International Fellow, and a Fulbright Fellow. Currently, she is an Associate Editor of the *Journal of Engineering Materials and Technology* and the Technical Chair of the Composites Committee of the Applied Mechanics Division of the ASME.

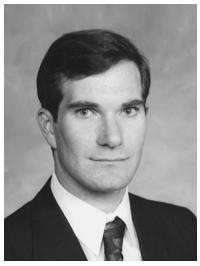
ALLEN PLOTKIN is a Professor of aerospace engineering and engineering mechanics at San Diego State University, where he has been a faculty member since 1985. He received a B.S. and M.S. from Columbia University and a Ph.D. in engineering mechanics at Stanford University in 1968. From 1968 to 1985, he was a faculty member in the Department of Aerospace Engineering of the University of Maryland, where he was promoted to the rank of Professor in 1977. During 1975–1976, he was a Visiting Associate in engineering science at the California Institute of Technology. His research interests are aerodynamics, hydrodynamics, and basic incompressible fluid mechanics. The research has emphasized the blending of analytical and computational techniques for the solution of a wide variety of flow problems, including fluid jets, airfoil and hydrofoil theory, ground effect, separation, and vortex modeling. He served two terms as a Member of the AIAA Fluid Dynamics Technical Committee. He is an American Society of Mechanical Engineers Fellow and an AIAA Associate Fellow. He received the AIAA Sustained Service Award in 2003 and the ASEE/AIAA John Leland Atwood Award in 2005. He is the coauthor (with J. Katz) of *Low-Speed Aerodynamics: From Wing Theory to Panel Methods* (McGraw–Hill, 1991; second edition: Cambridge University Press, 2001) and the author of approximately 40 journal papers. He has been an Associate Editor of the *AIAA Journal* since 1986.

ROGER H. RANGEL is a Professor and Chair of mechanical and aerospace engineering and Professor of chemical engineering and materials science at the University of California, Irvine. He received his M.E. from Simon Bolivar University in 1980 and his M.S. and Ph.D. in mechanical engineering from the University of California, Berkeley in 1983 and 1985, respectively. His research interests include fluid mechanics and other transport phenomena in particulate flows with and without phase change. Applications include atomization of liquids, spray combustion, metal spray solidification, and microfluidic devices. His work received an AIAA Best Paper Award in microgravity science (1999). Dr. Rangel has served as a Member of the American Society for the Mechanical Engineers K-11 Committee on Heat Transfer in Combustion Systems since 1989. He is Director of the California–Catalonia program for engineering innovation and a recipient of the Narcis Monturiol medal from the Catalan government. He has been a member of the publications, program, and local-arrangements committees for the Combustion Institute and has regularly served as a consultant for industry national laboratories. He has authored or coauthored more than 150 journal articles and conference papers in fluid mechanics, heat transfer, materials science, and related fields.

JUBARAJ SAHU is a Senior Research Scientist and currently serves as the Team Leader of the Advanced Computational Fluid Dynamics (CFD) Team and the Deputy Branch Chief of the Aerodynamics Branch at the U.S. Army Research Laboratory. He received his M.S. in aerospace engineering from Iowa State University in 1978 and his Ph.D. in mechanical and aerospace engineering from the University of Delaware in 1984. He joined the U.S. Army Ballistic Research Laboratory in 1981 and has 26 years' experience in applying CFD to problems of interest to the U.S. Army. His primary areas of interest include CFD; unsteady flows, jets and wakes; unsteady aerodynamics/flight dynamics; time-accurate coupled multidisciplinary CFD with rigid-body dynamics and guidance, navigation, and control modeling of smart munitions; high angle of attack of nonlinear aerodynamics; microjet flow control; and control maneuver aerodynamics. Dr. Sahu has actively participated in AIAA Atmospheric Flight Mechanics Technical Committees. He is an Associate Fellow of the AIAA and is an Associate Editor of both the *AIAA Journal* and the *Journal of Aerospace Computing, Information, and Communication*. He has over 150 publications in the area of fluid dynamics and applied aerodynamics, of which 112 are either sole-authored or primary-authored. Dr. Sahu has received a Meritorious Civilian Service Award, an Army Science Conference Best Technical Paper Award in Engineering Sciences, seven U.S. Army Research and Development awards, and the 2004 AIAA Engineer-of-the-Year Award in the Baltimore section.

KUNIGAL N. SHIVAKUMAR is a Research Professor and Director of the Center for Composite Materials Research at North Carolina A&T State University. He received a B.E. (1972) in civil engineering from Bangalore University and an M.E. (1974) in civil engineering and Ph.D. (1979) in aerospace engineering from the Indian Institute of Science (IIS). After receiving his Ph.D. he worked at NASA Langley Research Center as a National Research Council Research Associate for two years and at Old Dominion University as a Research Assistant and Associate Professor (1982–1984) for three years. In 1985, he joined Analytical Services and Materials, Inc. (AS&M) as a Senior Scientist and Group Leader. In 1991, he joined North Carolina A&T State University as a Research Professor and a Coordinator for the Structures and Controls Group of the Mars Mission Research Center. During the past 25 years, Prof. Shivakumar has been researching structural analysis methods, fracture mechanics, and polymer-based composite materials (manufacturing, testing, and analysis). He has developed a number of innovative processing technologies, test methods, analysis methods, and software for composite materials. He has about 170 peer-reviewed publications, one patent, several disclosures, and copyrighted software. Professor Shivakumar is a recipient of four special achievement awards from NASA, three certificates of recognition from AIAA, and one award each from AS&M, IIS, and Bangalore University. He has been cited in *Who's Who in the South and Southwest of America*, *Who's Who in Science and Engineering of America*, *Who's Who in World Finance and Industry*, and *Who's Who in American Men and Women of Science*, and *Who's Who in Plastics and Polymers*. Professor Shivakumar has been an active Member of the AIAA for about 20 years. He served AIAA as a Member of the Structures and Materials Technical Committees (TC); Chair of the Materials TC; General Chair of the 37th Structures, Structural Dynamics, and Materials Conference; and Chair of the Long-Range-Planning Committee. He is an Associate Fellow of the AIAA.

ALOK SINHA received his Ph.D. degree in mechanical engineering from Carnegie Mellon University, Pittsburgh, PA. He has been a PSU (Penn State) faculty since August 1983. His areas of teaching and research are vibration, control systems, jet engines, robotics, neural networks and nanotechnology. His book "Linear Systems: Optimal and Robust Control" was published in January 2007. This book serves as textbooks for two PSU graduate courses. He has served as a Visiting Associate Professor of Aeronautics and Astronautics at MIT, Cambridge, MA and as a researcher at Pratt & Whitney, E. Hartford, CT. He has also been an associate editor of ASME Journal of Dynamic Systems, Measurement and Control. At present, he serves as an Associate Editor of ASME Journal of Turbomachinery. Alok Sinha is a Fellow of ASME. He has received NASA certificate of recognition for significant contribution to Space Shuttle Microgravity Mission.



ANTHONY M. SPRINGER is the Alliance Development Manager for the Aeronautics Research Mission Directorate at NASA Headquarters. During his career at NASA, he has served as the Director of NASA Centennial of Flight Activities, Resident Manager for the X-34 Technology Demonstrator Program, test and project engineer at NASA Marshall Space Flight Center, and NASA representative to numerous outside organizations. He has written and edited a number of works in the aerospace field. He is currently the chair of the AIAA History Technical Committee (TC) and Historic Aerospace Sites Program. He has served on the AIAA Board of Directors, the Applied Aerodynamics TC, the Space Transportation TC, the Editorial Board of the Progress Series, and the Publications Committee. He is a Fellow of the AIAA.

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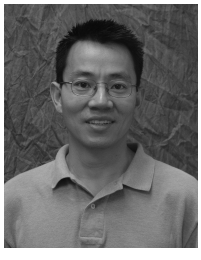
MIGUEL R. VISBAL received a B.S. in mechanical engineering from the Universidad del Norte in Columbia in 1976 and a Ph.D. in mechanical and aerospace engineering from Rutgers University in 1983. He currently serves as Principal Research Aerospace Engineer and Team leader of Multidisciplinary Computational Aerodynamics at the Air Vehicles Directorate, Air Force Research Laboratory. His has performed extensive research on the topics of unsteady separation, flow topology, vortex breakdown, flow control, and high-order methods for large-eddy-simulation and wave propagation. Dr. Visbal is an Air Force Research Laboratory Fellow and a recipient of the Air Force Basic Research Award for the development of high-resolution numerical methods for multi-physics simulations. He is the author or co-author of more than 200 technical publications and has given numerous invited lectures and keynote presentations at university and technical symposia. He is an Associate Fellow of AIAA and has served as member of the Fluid Dynamics and Aero-acoustics Technical Committees.



Z. J. WANG is an Associate Professor of aerospace engineering at the Iowa State University (ISU). He received his B.S. in applied mechanics from the National University of Defense Technology in 1985 and his Ph.D. in aerospace engineering from the University of Glasgow in 1990. He conducted postdoctoral research in Glasgow and Oxford before joining CFD Research Corporation in 1991 as a Research Engineer and later became a Senior Engineer, Group Leader, and Technical Fellow. In 2000, he joined the faculty of Michigan State University as an Associate Professor of mechanical engineering. In 2005, he returned to aerospace engineering and became an Associate Professor at ISU. He is currently the Associate Director of the Computational Fluid Dynamics (CFD) Center at ISU. He has been active in CFD research for over a decade, with about 100 journal and conference publications. His research areas include high-order spectral volume and difference methods for the Navier–Stokes equations; algorithm and flow solver development for structured/unstructured, overset, and adaptive Cartesian grids; computational aeroacoustics and electromagnetics; parallel computing; geometry modeling; and grid generation. He has given many invited lectures in universities, private companies, and government research laboratories, both nationally and internationally. He was an invited Lecturer of the von Kármán Institute Lecture Series on High-Order CFD Methods in 2005. He is an Associate Fellow of the AIAA and a Member of the AIAA Applied Aerodynamics, Meshing, Visualization and Simulation Environment and Fluid Dynamics Technical Committees. He was the Technical Chair of applied aerodynamics for the 45th Aerospace Sciences Meeting and Exhibits in 2007.

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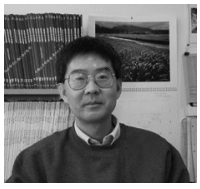
THOMAS ZANG is the Chief Technologist of the Systems Analysis and Concepts Directorate at the NASA Langley Research Center (LaRC). He received a B.S. in physics from the University of Notre Dame in 1971 and a Ph.D. in applied mathematics from the Massachusetts Institute of Technology in 1976. He has been a Staff Scientist at the Institute for Computer Applications in Science and Engineering (1976–78), an Assistant Professor at the College of William and Mary (1978–83), and an Engineer at LaRC since 1983. During the 1970s, his research focus was galactic dynamics, and during the 1980s, it was spectral methods and transition and turbulence. He headed LaRC's Multidisciplinary Optimization Branch during the 1990s. His recent activities have been devoted to coauthoring two new textbooks on spectral methods; leading the development of the NASA Standard for Models and Simulations; and improving the verification, validation, and uncertainty quantification capabilities of systems analysis tools. His AIAA activities include service on the Council of the Hampton Roads Section and the Multidisciplinary Design Optimization Technical Committee and as the Technical Chair of the 2006 Multidisciplinary Analysis and Optimization Conference.



XIAOLIN ZHONG is a Professor of mechanical and aerospace engineering at the University of California, Los Angeles (UCLA). He received his B.S. in fluid mechanics from Tsinghua University in 1984 and his Ph.D. in aeronautics and astronautics from Stanford University in 1991. Since his graduation from Stanford University, he has been a faculty member of the Mechanical and Aerospace Engineering Department at UCLA, first as an Assistant Professor (1991–1997), later as an Associate Professor (1997–2002), and currently as a Professor (2002–present). His current research interests include computational fluid dynamics (CFD), high-order numerical methods for incompressible and compressible flows, high-order methods for simulating multiphase flows, computational microfluidics, hypersonic flows, direct numerical simulation of stability and transition of high-speed boundary layers, and numerical simulation of nonequilibrium hypersonic flow with surface ablation. He has published more than 100 papers on his research. He is a Member of the AIAA Plasmadynamics and Lasers Technical Committee and a Member of the AIAA Transition Study Group. He is an Associate Fellow of the AIAA. He was the recipient of the Allied Signal Faculty Research Award by the UCLA Engineering School.