

Announcements and Acknowledgments

Summary. This editorial announces recent policy changes, reports on progress concerning the planned special 100th Anniversary of Flight issue of the journal, reports on personnel changes, and acknowledges service to the journal.

Length Limitations. The *AIAA Journal* is continuing its policy, begun last year, of no length limitations for full-length papers. Thus, longer papers can be accommodated although all manuscripts should be as *brief and concise* as proper presentation of the ideas will allow. Length limitations on Technical Notes (maximum of nine double-spaced manuscript pages) and the Readers' Forum (maximum of four double-spaced manuscript pages) continue, however, in keeping with the intent of these publishing vehicles for prompt disclosure of information having relatively limited scope. The detailed requirements of all types of manuscripts can be found in the **Information for Contributors to Journals of the AIAA**, which appears on the inside back cover of each issue of the journal.

Scope. The statement of scope of the *AIAA Journal* appears on the inside front cover of each issue. The topics within our scope include aeroacoustics, aerodynamics, combustion, fundamentals of propulsion, fluid mechanics and reacting flows, fundamental aspects of the aerospace environment, hydrodynamics, lasers and associated phenomena, optimization, plasmas, research instrumentation and facilities, structural mechanics and materials, thermomechanics, and thermochemistry. Papers also are sought that review, in an intensive manner, the results of recent research developments in any of the topics listed above. Every effort is made to accommodate the decision of authors that the *AIAA Journal* is the most appropriate journal for their manuscript. Manuscripts that depart excessively from the scope of the journal, however, are returned to authors along with suggestions about more appropriate alternative journals.

Suggested Reviewers and Associate Editors. To assist the review process, authors are asked to include the names and addresses of five suggested reviewers in the covering correspondence for submitted manuscripts. It is also helpful for authors to suggest Associate Editors (AEs) for their submission; such requests are honored whenever possible. To help authors suggest potential AEs, brief biographical sketches providing the background of each AE are published in the January issue of the journal each year. The AE handling each published paper is also noted at the end of the paper in order to help indicate the types of papers that particular AEs are handling.

Reappointed Associate Editors. Several individuals have agreed to serve another term as Associate Editors, as follows: Suresh K. Aggarwal, University of Illinois at Chicago; Alex Berman, Bloomfield, CT; Aditi Chattopadhyay, Arizona State University; Payman Givi, State University of New York at Buffalo; Jayavant P. Gore, Purdue University; Robert P. Lucht, Texas A&M University; Allen Plotkin, San Diego State University; Sunil Saigal, Carnegie Mellon University; and Anthony M. Waas, University of Michigan. The past service of these individuals, and their willingness to continue to serve in order to help maintain the editorial continuity of the journal, is very much appreciated.

Newly Appointed Associate Editors. I am very pleased to announce the appointment of five new Associate Editors, as follows: Hafiz M. Atassi, University of Notre Dame; William J. Devenport, Virginia Polytechnic Institute and State University; Iskender Gökalp, Université D'Orleans; Christophe Pierre, University of Michigan; and Kunigal N. Shivakumar, North Carolina A&T. The willingness of these individuals to help carry out the editorial duties of the journal is very much appreciated.

Continuing Associate Editors. Individuals who are continuing their service as Associate Editors for the coming year are as follows:

Promode Bandyopadhyay, Naval Undersea Warfare Center; Amr M. Baz, University of Maryland; Josette Bellan, Jet Propulsion Laboratory; Eric R. Johnson, Virginia Polytechnic Institute and State University; Eli Livne, University of Washington; Achille Messac, Rensselaer Polytechnic Institute; Phillip J. Morris, Pennsylvania State University; Anthony N. Palazotto, Air Force Institute of Technology; Martin Sichel, University of Michigan; and Ronald M. C. So, Hong Kong Polytechnic University. The continued service of these individuals to the journal is very much appreciated.

Book Review Editor. Pasquale Sforza, University of Florida, has agreed to another term as book review editor. His willingness to continue to serve the journal in this manner is very much appreciated. Book reviews have proven to be a very popular feature of the journal. In view of this interest, book reviews have been expanded from one to two reviews per issue.

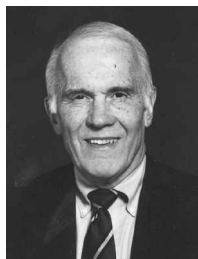
Special 100th Anniversary of Flight Issue. Last year at this time, nominations of unusually significant articles that have appeared in the *AIAA Journal* and its predecessors (*Journal of Aeronautical Sciences*, *Journal of Aerospace Sciences*, *ARS Journal*, *ARS Bulletin*, *Astronautics*, *Journal of the American Rocket Society*, and *Jet Propulsion*) were requested. Nominated papers are being considered for reprinting in a special 100th Anniversary of Flight issue of the *AIAA Journal* that will appear in December 2003 to commemorate the remarkable achievement of the first flight of the Wright brothers on 17 December 1903. There has been significant response to this request, with nearly 150 papers nominated thus far. Final selection of papers to be included in the special issue clearly will be a challenge.

To ensure that papers that merit inclusion in the special issue are not overlooked, the deadline for the receipt of nominations has been extended to 31 December 2001. Individuals may submit any number of nominations. The nomination, consisting of information sufficient to identify the article [e.g., author(s), title, journal, volume and/or number, year, and inclusive page numbers] should be sent to (mail, telephone, fax, and email are all acceptable):

AIAA Journal
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Acknowledgments. The editorial staff of the *AIAA* deserve special mention for effectively dealing with the publication problems of a widely circulated monthly journal, as follows: John D. Anderson and Roger L. Simpson (Vice President-Publications); Norma Brennan (Director of Publications); and Susan Fisher and Betsy Albert (Managing Editors, *AIAA Journal*). Special thanks also are due to our retiring Associate Editors, as follows: James C. Hermanson, Worcester Polytechnic Institute; K. Kailasanath, Naval Research Laboratory; and Mohamad Samimy, Ohio State University. Among these, K. Kailasanath deserves special mention for serving two terms (six years) as an Associate Editor, thus helping to maintain the editorial continuity of the journal. Finally, we all owe a debt of gratitude to the individuals who reviewed papers for the journal this year; their names follow.

G. M. Faeth
Editor-in-Chief



GERARD M. FAETH, A.B. Modine Professor of Aerospace Engineering and Head of the Gas Dynamics Laboratories at the University of Michigan, received the B.M.E. from Union College (New York) in 1958 and the M.S. in 1961 and Ph.D. in 1964 from the Pennsylvania State University, both in mechanical engineering. He joined the faculty of the Department of Mechanical Engineering at the Pennsylvania State University in 1958, where he was promoted to the rank of Professor in 1975 before retiring as Professor Emeritus upon assuming his present position in 1985. His current research interests include homogeneous and heterogeneous combustion phenomena, multiphase flows, radiation in participating media, optical properties of particulate matter, and buoyant and nonbuoyant turbulent flows. Dr. Faeth has served as a Member of the AIAA Propellants and Combustion Technical Committee (1976–1978, 1979–1984, and 1994–2000). He is a recipient of the American Society of Mechanical Engineers (ASME) Heat Transfer Division's Memorial Award (1988), the AIAA Propellants and Combustion Award (1993), and the NASA Public Service Medal (1999). He is corecipient of best paper awards from ASME in 1984, 1985, 1988, and 1995; from AIAA in 1984, 1994, and 1999; and from the Combustion Institute in 1996. He is a Fellow of AIAA, ASME, and the American Association for the Advancement of Science and a member of the National Academy of Engineering and the Combustion Institute. He was an Associate Technical Editor (1981–1985) and the Technical Editor (1985–1990) of the *Journal of Heat Transfer* of the ASME and a Deputy Editor (1984–1990) and the U.S. Editor (1990–1996) of *Combustion and Flame*, the journal of the Combustion Institute. He is a member of the Editorial Advisory Boards of *Combustion Science and Technology*, *Progress in Energy and Combustion Science*, *Atomization and Sprays*, and the *Annual Review in Numerical Fluid Mechanics and Heat Transfer*. Dr. Faeth is author or coauthor of more than 400 articles and papers.

Associate Editors



SURESH K. AGGARWAL is Professor of Mechanical Engineering at the University of Illinois at Chicago and received his Ph.D. in aerospace engineering from the Georgia Institute of Technology in 1979. Since then, he has served on the Professional Research Staff at Princeton University and as a Senior Research Engineer at Carnegie–Mellon University. He joined the faculty of the University of Illinois at Chicago in 1984. His research interests include gaseous and spray combustion phenomena, direct numerical simulation of multiphase flows, nanoscale flows, high-pressure and multicomponent droplet phenomena, partially premixed flames, and microgravity combustion. Dr. Aggarwal has served as a Member of the AIAA Propellants and Combustion Technical Committee (1985–1989 and 1991–1994). He is currently serving as a Member of the AIAA Terrestrial Energy Technical Committee and the American Society of Mechanical Engineers (ASME)–IGTI Fuels and Combustion Technical Committee. He is an Associate Fellow of AIAA and a member of ASME and the Combustion Institute. He has been a Technical Organizer for the Propellants and Combustion Technical Committee at the AIAA Aerospace Sciences Meeting (1989) and Joint Propulsion Conference (1993) and for the ASME Turbo Expo–Fuel and Combustion Program (1994). He has also served on numerous occasions as a consultant to government and industrial organizations and as a member of the NSF and DOE review panels. Dr. Aggarwal is a recipient of the University of Illinois Scholar Award and a biographee in *Who's Who in Science and Engineering*, *Who's Who in America*, and *Who's Who in World*. He has authored or coauthored more than 160 articles and papers.



HAFIZ M. ATASSI is the Viola D. Hank Professor of Aerospace and Mechanical Engineering at the University of Notre Dame. He received his licence es sciences from the University of Paris and a Diploma in Aerospace Engineering from the Ecole Centrale de Paris, both in 1963, and doctorate degree from the Sorbonne (Paris) in 1966. After one year as a research engineer at the Office National d'Etudes et de Recherches Aérospatiales and two years as research associate at Cornell University, he joined the faculty of the University of Notre Dame in September 1969, and he was director of the Notre Dame Center for Applied Mathematics from 1987 to 1997. His current research interests include aeroacoustics, unsteady aerodynamics, aeroelasticity, hydroacoustics, turbulence modeling, and mathematical computational methods. He has served as a member of the AIAA Structural Dynamics Committee (1979–1982) and the Aeroacoustics Committee (1992–1995). Dr. Atassi is a fellow of both the AIAA and the American Society of Mechanical Engineers. He received the NASA Addison P. Rothrock Distinguished Scientist Award (1983), the Japan International Aircraft Fund Award (1996), and the AIAA Aeroacoustics Award (2000) and was named Chevalier des Palmes Academiques by the French government (1993). Dr. Atassi was a member of the *Applied Mechanics Reviews* Editorial Board and Associate Editor for *Aerodynamics and Aeroelasticity* (1985–1990). He is author or coauthor of more than 130 articles and papers.



PROMODE R. BANDYOPADHYAY is a senior research scientist at the U.S. Naval Undersea Warfare Center (NUWC) at Newport, Rhode Island. His research experience includes ten years at NUWC; nine years as an in-house contractor at the Viscous Flow Branch, NASA Langley Research Center; two years at the Mechanical Engineering Department, University of Houston; and one year in the Engineering Department, Cambridge University. Currently, he is involved in the development of emerging technologies such as Biomimetics, MEMS, biology-based, low-speed maneuvering and quieting of small-undersea vehicles, and undersea turbulence suppression technologies. He has conducted research on the organized nature of turbulence in turbulent boundary layers, trailing vortices, effects of roughness, transitional pipe flows, wall jets, the effects of pressure gradients, freestream turbulence, multiple curvatures in turbulent boundary layers, and vortex flows in gas-liquid separators. He has published 150 articles, about 44 in the archival journals; edited one book; and holds seven patents. Four of his papers have been cited in 12 textbooks. He received his B.S. in mechanical engineering in 1968 from the University of North Bengal, an M.S. in mechanical engineering in 1970 from the University of Calcutta, a Ph.D. in applied mechanics in 1974 from the Indian Institute of Technology, Chennai, and a Ph.D. in aerodynamics in 1978 from the University of Cambridge, Cambridge, England, United Kingdom. He was an Adjunct Professor in the Electrical Engineering Department, University of Rhode Island, and in the Mechanical Engineering Department, Old Dominion University, Norfolk, Virginia. He has received a NASA award for Technology Utilization and Application and an American Society of Mechanical Engineers (ASME)-NUWC award for developing emerging technologies. He is an Associate Fellow of AIAA, a Fellow of ASME, a Life Member of the American Physical Society, and a Fellow of Wolfson College, University of Cambridge. He has served as a Member of the Fluid Dynamics Technical Committee of the AIAA and ASME. He has served as the Associate Editor of the ASME *Journal of Fluids Engineering*.



AMR M. BAZ is Professor of Mechanical Engineering and director of the Smart Materials and Structures Research Center at the University of Maryland at College Park. He received his B.S. in mechanical engineering from Cairo University, Cairo, Egypt, in 1966 and his M.S. and Ph.D. in mechanical engineering from the University of Wisconsin-Madison in 1970 and 1973, respectively. His research interests include active and passive control of vibration and noise, smart structures, shape memory composites, and virtual reality design of active structures. His research is funded by ARO, ONR, BMDO, NASA, and NOAA. He has been the recipient of seven awards for excellence in teaching, design, and academic performance, including the Egyptian National Award & First Class Medal for Best Achievements in Science & Arts. He is a Member of AIAA and a fellow of the American Society of Mechanical Engineers (ASME). Dr. Baz served as Chairman of the ASME Washington, D.C., Chapter in 1990-1991 and as a member of the ASME Edwin Church Medal Award Committee (1993-1998). He has been a member of the honorary societies Sigma-Xi, Phi-Kappa-Phi, and Tau-Beta-Pi. He is listed in the *American Men & Women of Science* and *Who's Who of American Inventors*. Dr. Baz is a member of the Editorial Board of *Journal of Vibration and Control* and is the author of over 100 research papers and five U.S. patents.



JOSETTE BELLAN is a Senior Research Scientist at the Jet Propulsion Laboratory (JPL) and a Visiting Associate at the California Institute of Technology (Caltech) in the Department of Aerospace Engineering. She has also been a Lecturer at Caltech and a Chancellor's Distinguished Lecturer at the University of California, Irvine. Dr. Bellan obtained her Ph.D. in Aerospace and Mechanical Sciences from Princeton University in 1974; M.S. and M.A. degrees in the same discipline in 1972, also from Princeton; and an M.S. in Applied Mathematics and an A.E.A. in Continuum Mechanics from the University of Sciences of Paris in 1969. Following her Ph.D., she completed one year as a Postdoctoral Fellow at Princeton University and further became a Member of the Research Staff in the same department. Since 1978 she had conducted research at the JPL in a variety of topics. Her current interests include drop and spray evaporation and combustion with emphasis on dense-spray behavior and polydispersity; multicomponent liquid fuels, porous materials, and particularly biomass pyrolysis; granular flows; direct numerical simulation of multiphase flows; large eddy simulations of multiphase flows; and supercritical fluid behavior of isolated drops, drops in clusters, shear layers, jets, and sprays. She is the coauthor of four books and has numerous journal publications. She is also an Amelia Earhart Fellow, is the recipient of the JPL Exceptional Service Award, and has 55 NASA Certificates of Recognition. Dr. Bellan is an AIAA Associate Fellow, an American Society of Mechanical Engineers (ASME) Fellow, a member of the Combustion Institute, and is on the Board of Directors of the Institute for Liquid Atomization and Spray Systems (ILASS). She has been a member of the AIAA Propellants and Combustion Committee during 1984-1987 and from 1995 to now and organized the 30th Aerospace Sciences program for this committee; she was a member of the AIAA National Awards Committee in 1990-1992 and is currently chairing it. In ASME she is a member of the K-11 Committee and organized sessions for the 1984 and 1990 Winter Annual Meetings. In the Combustion Institute she is a member of the Executive Committee of the Western States Section and was Program and Paper Chairperson in 1987-1989 and 1997-1999, respectively. She was Paper Chairperson for ILASS during 1995-1997 and was the general conference chair for the International Conference on Liquid Atomization and Spray Systems in 2000. In addition to the *AIAA Journal*, Dr. Bellan is on the Editorial Boards of *Atomization and Sprays* and *Progress in Energy and Combustion Science*.



ALEX BERMAN is a retired aerospace engineer. He received a B.A. and an M.A. in physics from the University of Connecticut in 1949 and 1952, respectively. He was employed by Kaman Aerospace Corporation from 1951 until 1991, when he retired. At that time, he was the head of the Research Department as Assistant Director for Research. He was responsible for projects that included advanced structural dynamics, vibration analysis, structural system identification, generalized component synthesis, and advanced computer program architecture. He directed and was a major participant in numerous research projects funded by NASA, the U.S. Army, and the U.S. Air Force. He has published over 50 technical papers. He has made presentations at numerous technical conferences and workshops and has given seminars at universities in his fields of expertise. He has been an Associate Editor since 1995. He is a Member of the AIAA and the American Helicopter Society.



ADITI CHATTOPADHYAY is a Professor in the Department of Mechanical and Aerospace Engineering at Arizona State University (ASU). She received her M.S. and Ph.D. degrees from the School of Aerospace Engineering at the Georgia Institute of Technology, Atlanta. Her current research interests include mechanics of composites, adaptive structures, rotary wing dynamics, and multidisciplinary design optimization. Dr. Chattopadhyay is a member of the AIAA Structures Technical Committee and is the Chair of the Composite Structures subcommittee. She is a member of the AHS Aircraft Design Committee (Chair, 1996–1998) and Education Committee. Dr. Chattopadhyay is an Associate Editor of *Inverse Problems in Engineering* and is a member of the Editorial Board of *Engineering Optimization*. She is the recipient of several academic, research, and best-paper awards. She was inducted into the Georgia Institute of Technology Hall of Fame and received the Outstanding Engineering Alumni Award in 1995. She is also the recipient of the Faculty Achievement Award—Excellence in Research, 2000, Arizona State University. Dr. Chattopadhyay is the Principal Investigator of several research grants funded by agencies such as the U.S. Army Research Office, Air Force Office of Scientific Research, NASA Langley and Ames Research Centers, and industries. Dr. Chattopadhyay is the author or coauthor of over 200 technical papers and articles. She is an Associate Fellow of AIAA.



WILLIAM J. DEVENPORT is a Professor in the Department of Aerospace and Ocean Engineering at Virginia Polytechnic Institute and State University. He received his B.Sc. Degree from the University of Exeter in 1981 and his Ph.D., in experimental and computational fluid dynamics, from the University of Cambridge in 1985. His research interests include experimental studies of turbulence and turbulent flows and theoretical descriptions of turbulence, particularly as they relate to aeroacoustic problems. He has published over 60 technical papers on wing-body junction flows, wing tip vortices, blade vortex interaction, wakes, cascade flows, airfoil aerodynamics, and wind-tunnel instrumentation. His work has been supported by NASA, ONR, DARPA, and NSF. He has served on the AIAA Fluid Dynamics Technical Committee and is currently a member of AHS and ASME and a senior member of AIAA.



PEYMAN GIVI, Professor of Mechanical and Aerospace Engineering and Director of the Computational Fluid Dynamics Laboratory at the State University of New York (SUNY) at Buffalo, received the B.E. from the Youngstown State University (Ohio) in 1980 and the Ph.D. from the Carnegie-Mellon University (Pennsylvania) in 1984. He joined the faculty of SUNY at Buffalo in 1988. Prior to that he was a Research Scientist at Flow Industries, Inc., in Kent, Washington, and had visiting appointments at the NASA Langley Research Center and the NASA Glenn Research Center. His current research interests include turbulence, combustion, computational methods, multiphase transport, magnetohydrodynamics, stochastic processes, and systems analysis and controls. He is a recipient of the Presidential Faculty Fellowship from President George Bush (1992), the Young Investigator Award of the Office of Naval Research (1990), and the Presidential Young Investigator Award of the National Science Foundation (1990). He also received the Outstanding Educator of the Year Award from SUNY at Buffalo in 1994. Givi is a member of the editorial boards of *Progress in Energy and Combustion Science* and *Computers and Fluids*.



ISKENDER GÖKALP is Director of Research at the Centre National de la Recherche Scientifique (CNRS). He obtained his aerospace engineering degree from the Technical University of Istanbul in 1974 and his Ph.D. in combustion from the University of Paris VI in 1981. He joined the Faculty of Mechanics of the University of Paris VI in 1979 as Assistant Professor and was promoted to Associate Professor in 1981. He joined the Laboratoire de Combustion et Systèmes Réactifs of the CNRS in Orléans in 1983 and was promoted to Director of Research in 1994. He is the Director of the Research Federation "Energétique, Propulsion, Espace, Environnement-EPEE" of the CNRS and the University of Orléans, created in 1998. His current research interests include turbulent combustion, droplet and spray combustion, metal combustion, microgravity combustion, variable density turbulent flows, and supersonic combustion. He is also active in the area of historical and philosophical studies on science and technology and on interdisciplinarity. He is the Chairperson of the French Section of the Combustion Institute and the Chairperson of the Federation of the European Sections of the Combustion Institute. He is a Senior Member of the AIAA and is currently serving as a Member of the AIAA Propellants and Combustion Technical Committee. He also serves on the international board of ICLASS and on the ILASS-Europe board. He is on the scientific boards of several French and European research programs. He is the coeditor of the French journal *Combustion: Revue des Sciences et Techniques de Combustion*. He supervised more than 30 Ph.D. theses and is the author or coauthor of more than 500 articles and papers.



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 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.



ERIC RAYMOND JOHNSON is a Professor in the Aerospace and Ocean Engineering Department, Virginia Polytechnic Institute and State University, Blacksburg. He earned his doctoral degree in Applied Mechanics from the University of Michigan in 1976 and has been a faculty member at Virginia Tech since then. Prior to his doctorate he worked in industry for four-and-one-half years on the analysis and design of servohydraulic control systems for vehicles and industrial applications. His research interests are in structures, solid mechanics, buckling and postbuckling, composite materials, and optimal design. In particular, his work has concentrated on the response and failure of composite material structures in application to flight vehicles, which includes composite stiffener crippling, failure of dropped-ply laminates, the nonlinear response of stiffened composite shells under internal pressure, and energy absorption of composite structure. Dr. Johnson has written 54 refereed technical publications. He teaches courses in thin-walled structures, elastic instability of structures, variational and energy methods, and optimal design of composite materials and structures. He is a Senior Member of the AIAA and a member of the American Society of Mechanical Engineers.



JOHN KALLINDERIS is Professor at the Department of Aerospace Engineering and Engineering Mechanics of the University of Texas at Austin. He received a Diploma in mechanical engineering from the National Technical University of Athens, Greece, and a Ph.D. degree in aeronautics and astronautics from MIT in 1989. His main research interests are in the areas of adaptive numerical methods for engineering simulations, parallel computation, and computational grid generation, as well as large-scale flow simulations. He has received several research grants from sources including the NSF, NASA, ARPA, the U.S. AFOSR, the State of Texas, IBM, and a consortium of oil companies. He has also worked as a consultant in industry. John has served as conference session organizer and reviewer of papers and proposals, as well as member of various panels at NSF and NASA. In 1993 he received the NSF Young Investigator Award, as well as the Teaching Excellence Award for the Department of Aerospace Engineering and Engineering Mechanics. In 1997, he received the AIAA Lawrence Sperry Award for a notable contribution to the advancement of aeronautics or astronautics. John has authored over 90 journal and conference papers, as well as 6 book chapters. He has given over 40 invited lectures in industry, government laboratories, and academia in both the United States and Europe. He is an Associate Fellow of the AIAA and has served as Associate Editor since 1996.



ELI LIVNE received his B.Sc. and M.Sc. degrees (1974 and 1982, respectively) in aeronautical engineering from the Technion—Israel Institute of Technology. From 1975 to 1984 he served as an engineering officer in the Israeli Air Force, working in the areas of structural dynamics, aeroelasticity and aeroservoelasticity. He returned to academia and received his Ph.D. in aerospace engineering from the University of California, Los Angeles, in 1990. At the end of that year, he joined the faculty in the Department of Aeronautics and Astronautics at the University of Washington in Seattle, where he is currently an Associate Professor. Dr. Livne's research spans the disciplines of structures, structural dynamics, unsteady aerodynamics, flight mechanics, active control, and airplane design optimization, with an emphasis on design-oriented modeling techniques and the associated approximation and sensitivity computational technology necessary for carrying out large-scale design optimization of highly integrated vehicles. This work contributed to the development of efficient computational tools for truly integrated design synthesis of flexible actively controlled aerospace vehicles and to some of the first studies in integrated multidisciplinary aeroservoelastic design of such vehicles. Dr. Livne has additional interests in the areas of airplane design education and aeroelasticity of unconventional configurations. His research has been supported over the years by the U.S. Air Force Office of Scientific Research, the Office of Naval Research, NASA (Langley and Ames Research Centers), the National Science Foundation, and The Boeing Company. He is a former member of the AIAA Multidisciplinary Design Optimization Technical Committee. He was a member of the NASA/Boeing HSCT Aeroelastic Concept Evaluation Team and the Boeing HSCT Aeroservoelastic working group. He is a recipient of a 1987–1988 Josephine de Karman Fellowship, 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 & Materials Award for the best paper given at the 1997 AIAA/ASME/ASCE/AHS/ASC 38th Structures, Structural Dynamics, and Materials Conference. He edited a special Multidisciplinary Design Optimization issue of the *Journal of Aircraft*, published in January–February 1999. He is an Associate Fellow of the AIAA and member of ASME and ASEE.



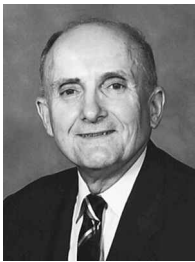
ROBERT P. LUCHT is currently the G. Paul Pepper Professor in the Department of Mechanical Engineering at Texas A&M University. He received his B.S. degree in nuclear engineering in 1977 and his M.S. and Ph.D. degrees in mechanical engineering in 1979 and 1981, all from Purdue University. After a year of postdoctoral research at Purdue University, he joined the Combustion Research Facility at Sandia National Laboratories and worked there as a member of the technical staff and then as a department manager until 1992, when he became a faculty member at the University of Illinois. He joined the faculty at Texas A&M University in September 1998. The focus of his research is the development and application of laser diagnostic techniques for combustion systems and for nonreacting flows. Currently, his research group is developing dual-pump and high-resolution coherent anti-Stokes Raman scattering (CARS) techniques for multiparameter measurements, using planar laser-induced fluorescence (PLIF) methods for visualizing molecular mixing and studying the physics of degenerate four-wave mixing (DFWM) and polarization spectroscopy. His group is also applying CARS, DFWM, and PLIF techniques for measurements in diamond-forming flames, in spark ignition and compression ignition engines, and in a gas turbine combustion simulator. He was the program chair for the 1996 Optical Society of America (OSA) Topical Meeting on Laser Applications in Chemical and Environmental Analysis and is the General Chair for the same meeting in 1998. He is a Member of AIAA, American Society of Mechanical Engineers, the Society of Automotive Engineers, the OSA, and the Combustion Institute. He is the author or coauthor of more than 60 archival journal articles. He is a Fellow of the OSA and an Associate Fellow of the AIAA.



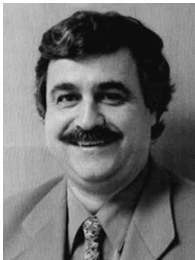
ACHILLE MESSAC is an Associate Professor in the Department of Mechanical Engineering, Aeronautical Engineering and Mechanics at Rensselaer Polytechnic Institute. He received his B.S. (1981), M.S. (1982), and Ph.D. (1986) from the Department of Aeronautical and Astronautical Engineering at the Massachusetts Institute of Technology. He was a Senior Member of the Technical Staff at Draper Laboratory until 1994, where he led and participated in numerous research and development efforts. His research topics included deployment and multibody dynamics, structural optimization, optimal control, and Control Structure Integrated Design, in the latter of which he was a pioneer in the mid-1980s. 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. He also led the development of a large simulation to study the dynamics stability, the structural behavior, and the control properties of the space system composed of the space station (SS), the space shuttle, and the translating SS mobile transporter. In 1994, he joined the Mechanical, Industrial and Manufacturing Engineering Department at Northeastern University as an Associate Professor, where he led a successful reform of the design program. He is leading the development of Physical Programming, a methodology that brings optimization within the easy reach of industry engineers. Physical Programming also facilitates the effective use of optimization by experts by entirely eliminating the use of difficult-to-obtain numerical weights in forming the aggregate objective function. He has led winning student teams in two ASME Motion Control Design Contests. He is an Associate Fellow of AIAA, a member of ASME, the elected Chair of the AIAA Multidisciplinary Design Optimization (MDO) Technical Committee (TC), and a former member of the AIAA Structural Dynamics TC. He is an Editorial Board Member and Associate Editor of the *Optimization and Engineering Journal* of Kluwer Academic Publishers. He served as the MDO Chair for the 38th Aerospace Sciences Meeting and Exhibits. He has authored or coauthored over 70 publications. He is a member of the honor societies Sigma Xi, Tau Beta Pi, and Sigma Gamma Tau and is listed in *International Who's Who*. He is a recipient of the CAREER award of the National Science Foundation.



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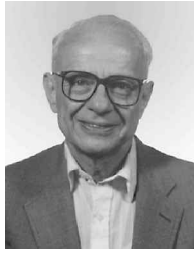
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ANTHONY M. WAAS, Professor of Aerospace Engineering and Director, Composite Structures Laboratory at the University of Michigan, received his B.Sc. with first-class honors from Imperial College, University of London, United Kingdom, in 1982, and the M.S. in 1983 and Ph.D. in 1988 with a minor in applied mathematics from the California Institute of Technology, all in aeronautics. He joined the faculty of the Department of Aerospace Engineering at the University of Michigan in 1988, where he was promoted to the rank of Associate Professor in 1994 and Professor in 2000. His current research interests include mechanics of composite structures and composite materials, structural stability, optical methods for experimental stress analysis, biomechanics, and smart materials and structures. Dr. Waas has served as a member of the AIAA Structures Technical Committee (1991–1994, 1997–2001), the ASME Technical Committee on Instability of Solids and Structures (1995–2001), the ASME Technical Committee on Experimental Mechanics (1996–2000), and the ASME Structures and Materials Committee (1998–2002). He is a recipient of the Royal Aeronautical Society Prize of Imperial College (1982), the William Balhaus Prize in Aeronautics at the California Institute of Technology (1988), a Rackham Faculty Fellowship (1990), the University of Michigan Aerospace Department Teaching Award (1995), the Society of Automotive Engineers Ralph Teetor Award (1995), the American Academy of Mechanics Junior Award for Research (1997), and a University of Michigan Aerospace Department Research Award (1998). He is a Fellow of ASME and an Associate Fellow of AIAA, ASC, and the American Academy of Mechanics. He is an Associate Editor of the *Journal of Composites: B* and has served on the Editorial Advisory Board of the *AIAA Journal of Aircraft*. He is author or coauthor of more than 60 articles and papers.