

Editorial: Annual Business and News

THIS past year has been another successful one for the *Journal of Guidance, Control, and Dynamics*. The *JGCD* remains number two in the total number of domestic and international subscriptions among the seven AIAA journals and continues to receive high impact-factor ratings from journal-rating services. In March, we celebrated Richard Battin's 80th birthday with an issue dedicated to him. We published more pages in 2005 than in 2004 in an attempt to decrease the backlog of papers ready to publish. We will continue to work off the backlog in 2006.

Our Web-based manuscript submission and management system (WriteTrack) was further improved and is now fully operational. The entire editorial and review process is faster, more accurate, and less labor intensive than the old system. Using WriteTrack, I can now generate various measures of performance for the review process. Here are some WriteTrack statistics for the 242 papers that received a final editorial decision in the period 1 January 2005–30 September 2005. Of those papers, 122 were accepted after peer review and author revision. That process averaged 177 days from submission to acceptance. The 105 papers we declined to publish took an average of 71 days from author submission to final decision. The remaining 15 papers were either transferred or withdrawn. On average, Associate Editors (AEs) assigned reviewers within 12 days of receiving papers from me. After the AE had the paper for 82 days, on average, the author received the results of the reviews, or 87 days for a request for a revision. Authors took an average of 47 days to revise their papers. The AEs took 143 days on average to complete the entire evaluation process of papers. I think the statistics show that the AEs are doing an excellent job in getting results back to authors within 87 days. However, improving the quality of the review process, not speed, is our overriding goal, and some papers will be sent for multiple reviews and multiple revisions as deemed necessary by the AEs. The editorial team thanks the AIAA team for their continuing help in designing, implementing, and upgrading the system.

In past editorials I have written about the progress made during the year toward meeting the goals that I have as Editor-in-Chief. These goals are as follows: 1) maintain the quality of the *JGCD*, 2) increase the number of engineering applications-oriented papers, 3) minimize the time from submission to publication, 4) increase the international involvement in the *JGCD*, and 5) listen to and respond to everyone's concerns. I am satisfied that we are continuing to make progress in meeting these goals. The *JGCD* attracts high-quality papers submitted on a worldwide basis. On any given date, about 100 papers were being evaluated. However, the number of applications-oriented papers submitted still needs to be increased, and I repeat the call to the community to respond with more relevant papers that can help engineers practice their profession.

International participation in the *JGCD* has remained at previous levels. About 50% of new paper submittals were from outside the United States, and the acceptance rate for those papers has been about the same as for papers from the United States. Publication tends to be a bit slower for foreign papers, however, because more of these papers need extensive editorial work and revisions of figures. Our International Advisors have been very helpful in soliciting papers. The fact that the *JGCD* archive is online has helped our international authors in their research and also increased our international subscription base.

The AIAA Publications Committee and Editors-in-Chief are in the process of approving a revision to our long-standing Ethical Standards for Publication of Aeronautics and Astronautics Research. The revised document is published elsewhere in this issue. Instances of plagiarism, intentional or otherwise, have increased dramatically with the increase in the availability of documents electronically. Please take the time to read our Ethical Standards and to help to educate others on their applicability. An approved revised version of AIAA's Editorial Policy Statement on Numerical and Experimental Accuracy also is published in this issue.

With this issue, I am announcing several changes to our Editorial staff.

First, retiring AEs are as follows:

- Dr. Karl Bilimoria, NASA Ames Research Center
- Professor Mark Psiaki, Cornell University
- Lt. Col (ret.) David A. Vallado, Analytical Graphics, Inc.
- Dr. Bruce D. Kothmann, The Boeing Company

I want to express my personal thanks to our retired AEs for their service.

Then, renewed appointments with thanks for their continuing service as AEs are as follows:

- Dr. David Doman, U.S. Air Force Research Laboratory
- Dr. Wodek Gawronski, California Institute of Technology
- Dr. Kevin Wise, Boeing Phantom Works

and as Book Review Editor,

- Christopher Hall, Virginia Polytechnic Institute and State University

I would like to welcome the following new AEs:

- Dr. James Kuchar, MIT Lincoln Laboratory
- Professor E. Glenn Lightsey, University of Texas at Austin
- Professor Daniel Scheeres, University of Michigan
- Dr. Russell Enns, The Boeing Company

The complete list including biographical sketches of all current AEs is presented in the following pages.

I express my gratitude to all of the reviewers who perform the peer reviews that are necessary to maintain the quality of the *JGCD*. The list of contributing reviewers from 1 October 2004 through 30 September 2005 follows the list of AEs. I apologize to any reviewers whose names may have been inadvertently omitted from the list.

I would like to acknowledge our International Advisors, who help us in soliciting high-quality papers that represent the technical efforts in their countries. They also assist authors who may have questions about the review process. For his service, I would like to thank our retired International Advisor, Dr. Yoshikazu Miyazawa, and note the recent appointments of Professor Guido Colasurdo, Politecnico di Torino, Italy, and Professor Seiya Ueno, Yokohama National University, Japan.

Special acknowledgments go to the individuals who served as liaison between the *JGCD* and an AIAA Technical Committee: Prof. Yaakov Oshman, with the Guidance, Navigation, and Control Technical Committee; Dr. Ronald Proulx, Draper Laboratory, with the Astrodynamics Technical Committee; Prof. John Valasek, Texas A&M University, with the Atmospheric Flight Mechanics Technical Committee; Dr. Karl Bilimoria, NASA Ames Research Center, with the Air Transportation Systems Technical Committee; and Dr. Sanjay Garg, NASA Glenn Research Center, with the Intelligent Systems Technical Committee.

Thanks to all of the editorial staff at AIAA Headquarters and to the production staff at TechBooks. These dedicated individuals work at the highest standards in producing the *JGCD*. Thanks to Ms. Lisa Gorman and Ms. Loretta Mitrano, Draper Laboratory, for making the Editor-in-Chief's office operate smoothly and efficiently all year long and to Draper Laboratory for its support of the *JGCD*.

Finally, I continue to encourage communications between our readers and any member of the Editorial Staff. I also believe we did a good job last year in covering the span of interests of our readers and in responding quickly to communications. We can always do better and we are willing to listen; please contact me directly. My contact information is:

Dr. George T. Schmidt
Editor-in-Chief

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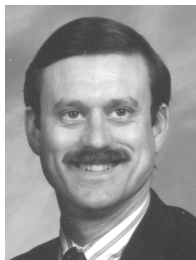


George T. Schmidt received his S.B. and S.M. degrees in Aeronautics and Astronautics from the Massachusetts Institute of Technology (MIT) in 1965 and his Sc.D. in Instrumentation from MIT in 1971. Since 1965 he has worked at the Charles Stark Draper Laboratory, Cambridge, Massachusetts, where he is currently Director, Education. Prior to that he was the Leader of the Guidance and Navigation Division and Director of the Guidance Technology Center. His major technical activities have been in GN&C system design for missiles, aircraft, and manned spacecraft; Kalman filtering applications; and integration techniques for high-resolution synthetic aperture radars, satellite navigation systems, and inertial sensors. Starting in 1968 he served the NATO Research and Technology Organization (formerly AGARD) in many positions, including as a U.S. member of the Guidance and Control Panel. He is a Lecturer in Aeronautics and Astronautics at MIT. He is a Fellow of the AIAA, a Fellow of the Institute of Electrical and Electronics Engineers, and an elected member of the Russian Federation, Academy of Navigation and Motion Control. He has received several awards, including the AIAA International Cooperation Award in 2001 and the NATO Research and Technology Organization von Kármán Medal in 2005. He is serving as chairman of the AIAA Ethics Committee. He is the Editor-in-Chief of *The Draper Technology Digest* and is author or contributing author of more than 80 technical papers and reports, encyclopedia articles, and textbooks. He has been Editor-in-Chief of the AIAA *Journal of Guidance, Control, and Dynamics* since 1996.

Associate Editors



SIVASUBRAMANYA N. BALAKRISHNAN is currently a Professor of Aerospace Engineering in the Department of Mechanical and Aerospace Engineering and Engineering Mechanics at the University of Missouri—Rolla (UMR). He received his Ph.D. in aerospace engineering at the University of Texas at Austin. Dr. Balakrishnan's professional roles include Lead Engineer, Lockheed Electronics Company, Houston, Texas, where he worked in the space shuttle program; Scientist and Fellow, Center for Space Research, University of Texas at Austin; and Faculty Research Fellow, Wright Laboratory (Eglin Air Force Base, Florida). He teaches stability and control and advanced control courses at UMR. His research activities focus on neural networks in trajectory optimization, and control, missile guidance, and multiple target-multiple sensor problems and estimation. He has authored/coauthored about 55 journal articles and refereed conference papers in these areas. Dr. Balakrishnan is a Member of the AIAA Guidance, Navigation, and Control Technical Committee, an Associate Fellow of AIAA, and Director, American Automatic Control Council.



RICHARD D. COLGREN, Senior Staff Engineer at the Lockheed Martin Aeronautics Company in Palmdale, California, is Lead Engineer for C4ISR and UAV programs for Air Vehicle Sciences and Systems. He earned his B.S. in aeronautics and astronautics at the University of Washington and his M.S. and Ph.D. in electrical engineering systems at the University of Southern California. Previously he was Flight Control Systems Lead for RECEE and Advanced Programs, and before that IPT Lead for Specialist Support on the DarkStar UAV (Tier III-). He was also IPT Lead for the Vehicle Management System on the Uninhabited Combat Air Vehicle, and was Lead Flight Controls Engineer on the U-2S and on the Air Force Multivariable Control Theory project. He has served as Project Engineer/Principal Investigator on independent research and development projects including Technologies for Reliable Autonomous Control, development of the Lockheed flight controls workstation, and the state reduction of structural dynamic models for control systems design. Previous work includes feasibility studies and preliminary/advanced design for flight control system concepts. Work on UAV projects includes Tier IIC, Tier III-, Tier III, X-33, UCAV, micro- UAVs, the Wraith Remotely Piloted Vehicle, and other projects. Dr. Colgren is a past Chair of the Integrated Controls Subcommittee of the Lockheed Corporate Task Force. Dr. Colgren is an aeronautical engineering evaluator for the Accreditation Board for Engineering and Technology, Inc./Aeronautical. He is an Associate Fellow of the AIAA, and is a Member and past Secretary for the National Technical Committee on Guidance, Navigation, and Control.



JOHN L. CRASSIDIS is an Associate Professor of Mechanical and Aerospace Engineering at the University at Buffalo (UB), State University of New York. He received his B.S., M.S., and Ph.D. in Mechanical Engineering from the State University of New York at Buffalo. Prior to joining UB in 2001, he held academic appointments at Catholic University of America from 1996 to 1998 and Texas A&M University from 1998 to 2001. From 1996 to 1998, he was a NASA Postdoctoral Research Fellow at Goddard Space Flight Center, where he worked on a number of spacecraft projects and research ventures involving attitude control systems. He is the principal author of the textbook *Optimal Estimation of Dynamic Systems* (CRC Press, 2004) and has authored or coauthored more than 80 journal and refereed conference papers. He served as the Technical Program Co-Chair of the AIAA Guidance, Navigation, and Control (GN&C) Conference in 2001 and as the General Chair in 2003. He has received many awards for his achievements including the best paper award for the 2001 and 2003 AIAA GN&C conferences. His current research interests include nonlinear estimation and control theory, spacecraft attitude determination and control, attitude dynamics and kinematics, and robust vibration suppression. Since 1997 he has been a Member of the AIAA Technical Committee on Guidance, Navigation, and Control, where he currently serves as Secretary. He is an Associate Fellow of AIAA.



DAVID B. DOMAN is a Senior Aerospace Engineer with the Air Vehicles Directorate of the Air Force Research Laboratory (AFRL) at Wright-Patterson Air Force Base in Dayton, Ohio. He received his B.S. degree in Aerospace Engineering (magna cum laude) from West Virginia University in 1991, his M.S. in Aeronautics and Astronautics from Purdue University in 1993, and his Ph.D. in Aerospace Engineering from Virginia Polytechnic Institute and State University in 1998. He completed the Aerospace Vehicles Test Course at the USAF Test Pilot School in 2005. He is currently the Technical Area Lead for the Space Access and Hypersonic Vehicle Guidance and Control Group in the Control Science Center of Excellence at AFRL, where he is responsible for conducting and directing research in the areas of adaptive guidance and control and dynamic modeling of hypersonic vehicles. He has published more than 60 refereed conference papers, journal articles, and technical reports and currently holds two U.S. patents. He was the corecipient of the 2003 Gen. Benjamin D. Foulois Award as well as the 2000 Dr. Courtland D. Perkins award for his technical contributions at the Air Vehicles Directorate of AFRL. In 2005, he was selected to participate in the Frontiers of Engineering Symposium of the National Academy of Engineering. He is an Associate Fellow of the AIAA, a Senior Member of the Institute of Electrical and Electronics Engineers, and a member of the AIAA Technical Committee on Guidance, Navigation, and Control.



FIDELIS O. EKE holds a diploma in mechanical engineering from Universite Lovanium, Kinshasa, Democratic Republic of the Congo, an M.S. in mechanical engineering from Tuskegee University, and a Ph.D. in mechanical engineering from Stanford University. He worked for six and half years in the Guidance and Control Section of the Jet Propulsion Laboratory in Pasadena. Some of the major tasks he performed include design of attitude control algorithms for the Galileo spacecraft; stability studies of rocket motors; study of various aspects of the dynamics, control, and stability of spin-stabilized spacecraft; evaluation of the impact of flexibility on the design of controllers for large flexible space structures; development of new formalisms for the study of the dynamics of multibody systems. He is currently an Associate Professor in the Department of Mechanical and Aeronautical Engineering at the University of California, Davis, where he teaches courses in the dynamics and controls areas. His research interests are mainly in the application of dynamics and controls to aerospace systems, especially attitude dynamics and control, dynamics of variable mass systems, and multibody dynamics.



RUSSELL ENNS is an Associate Technical Fellow at The Boeing Company in Mesa, Arizona. He received his B.A.Sc. from Simon Fraser University and his M.S. and Ph.D. in Electrical Engineering from Arizona State University. He has been developing fire and flight controls systems for McDonnell Douglas Helicopter Company/Boeing since 1993. He currently serves as a technical lead on the modernized flight control system for the Apache Longbow helicopter and is leading the flight control IPT efforts on Phase II of the A160 Hummingbird program. He has led, or been a key designer, on a number of other flight control programs, especially those focusing on fly-by-wire technology. His other research interests include neural-control systems and flight control reconfiguration, with several refereed publications in these areas. He has been an invitee to the National Science Foundation Workshop on Reinforcement Learning and has had invited papers at the AHS Technical Specialists Meeting and International Joint Conference on Neural Networks. He has served for several years as a reviewer for *JGCD* and *IEEE TNN*. He is a longstanding member of the AIAA, IEEE, and AHS.



WODEK GAWRONSKI is a Principal Engineer at the Jet Propulsion Laboratory, California Institute of Technology. He received his M.S. (1968), Ph.D. (1970), and D.Sc. (1975) from the Gdansk University of Technology, Gdansk, Poland. He was a Professor at the Gdansk University of Technology (1970–1983), a Visiting Professor at the University of Hanover, Germany (1983–1986), and Senior NRC Fellow at the NASA Langley Research Center, Hampton, VA (1987–1989). His research interest is in the areas of structural dynamics, structural control, system identification, and antenna and radiotelescope pointing and control. At the Jet Propulsion Laboratory he is responsible for the advanced development of the control systems of NASA Deep Space Network antennas. He was also a consultant on control system design to several radiotelescope projects, including the NRAO 100-meter Green Bank Telescope in West Virginia, and the 50-meter Large Millimeter Wavelength Telescope in Puebla, Mexico. He is an author of two books: *Balanced Control of Flexible Structures* (Springer 1996), and *Dynamics and Control of Structures* (Springer 1998).



HARI B. HABLANI received his B.S. (mechanical engineering) in 1972 from Government College of Engineering and Technology, Raipur, Chhattisgarh, and his M.S. in 1974 and Ph.D. in 1978 (both in aerospace engineering) from the Indian Institute of Science, Bangalore, India. He passed his M.S. with distinction and Ph.D. with P. S. Narayan Gold Medal. From 1978 to 1980, he was a Postdoctoral Fellow in the Department of Aeronautical and Astronautical Engineering, Purdue University, West Lafayette, Indiana. For the following two years, he was a NASA National Research Council Resident Associate at Johnson Space Center, Houston, Texas. Since 1982, he has been with The Boeing Company (formerly Rockwell International), Flight Sciences and Advanced Design Group, Huntington Beach, California, where he currently is a Technical Fellow. For the past three years, he has been involved with the design of guidance, navigation, and control of spacecraft rendezvous. Earlier, he was responsible for detailed design and simulation of spacecraft and interceptor dynamics, control, determination, guidance, and navigation. Dr. Hablani has received numerous awards for his contributions, including the Leonardo de Vinci (the Spirit of the Renaissance) Engineer of the Year 1991 and patent and innovation awards. He has authored numerous publications, both internal and external. For the last two years, he has been presenting Boeing-wide, a course on guidance, navigation, and control of spacecraft and interceptors. He has been an Associate Fellow of AIAA since 1994.



CHRISTOPHER D. HALL is a Professor of Aerospace and Ocean Engineering at Virginia Polytechnic Institute and State University. Before joining Virginia Tech in 1997, he taught for five years in the Department of Aeronautics and Astronautics at the Air Force Institute of Technology. He received a B.S. in aerospace engineering from Auburn University (1984), an M.S. in systems engineering at the Air Force Institute of Technology (1988), and a Ph.D. in theoretical and applied mechanics from Cornell University (1992). His research interests include spacecraft dynamics and control, space systems design, and nonlinear oscillations. He is a member of the Phi Kappa Phi, Sigma Gamma Tau, and Tau Beta Pi Honorary Societies, and the recipient of a Tau Beta Pi Outstanding Professor Award in 1993, the Colonel Charles A. Stone Leadership Award in 1996, the Ralph R. Teetor Educational Award in 1997, and the Dean's Award for Excellence in Teaching in 2001. He is an Associate Fellow of AIAA, a past Associate Editor of this journal, and is currently Chair of the AIAA Astrodynamics Technical Committee.



JAMES K. KUCHAR is on the Technical Staff at the Massachusetts Institute of Technology (MIT) Lincoln Laboratory. He received his S.B. (1990), S.M. (1991), and Ph.D. (1995) degrees from the Department of Aeronautics and Astronautics at MIT. In 1995, he was awarded the RTCA William E. Jackson Award and the Council of University Transportation Centers Charley Wootan Award for his work on alerting system performance modeling. From 1995 to 2003, he served on the MIT faculty and twice received the Aeronautics and Astronautics Department Graduate Teaching Award. Dr. Kuchar joined Lincoln Laboratory in 2003, where he currently leads studies on collision avoidance systems for conventional aircraft and Unmanned Aerial Vehicles. Dr. Kuchar's primary research areas are safety assessment, decision aiding and alerting systems, advanced display concepts, and flight simulation. He has authored more than 60 journal and refereed conference papers, is a senior member of the AIAA, and a past member of the AIAA Aerospace Traffic Management Program Committee.



JESSE A. LEITNER holds a Ph.D. in aerospace engineering from Georgia Institute of Technology in the area of flight mechanics and control, an M.S. in aerospace engineering from Georgia Institute of Technology, and a B.S. in aerospace engineering from the University of Texas at Austin. He is currently a Guidance, Navigation, and Control (GN&C) Systems Engineer and he serves as NASA Goddard's Lead Engineer for Distributed Space Systems. In this role he is responsible for the end-to-end technology program supporting Goddard's Earth Science and Space Science multiple spacecraft missions. He is also the Lead Analyst for formation flying guidance, navigation, and control work. Dr. Leitner serves as an interface between engineers and scientist principal investigators for distributed spacecraft missions at Goddard and he also acts as an interface in this area to the Department of Defense and other government agencies with interests in distributed space systems. Prior to joining NASA Goddard at the beginning of 2000, he was a Group Leader for Space Flight Dynamics and Control at the Air Force Research Laboratory, Space Vehicles Directorate, in Albuquerque. His research interests are in spacecraft guidance, navigation, and control and formation flying; applications of nonlinear and adaptive control; and dynamics and control of large optical systems. He serves on the AIAA GN&C Technical Committee, he has just finished his term as the AIAA Director on the American Automatic Control Council, and he was the Technical Program Chair for the 2002 AIAA GN&C Conference. He is an Associate Fellow of AIAA.



E. GLENN LIGHTSEY is an Associate Professor in the Department of Aerospace Engineering and Engineering Mechanics at the University of Texas at Austin. He received a B.S.E. degree in Mechanical and Aerospace Engineering from Princeton University in 1986, an M.S. in Electrical Engineering from the Johns Hopkins University in 1992, and a Ph.D. in Aeronautics and Astronautics from Stanford University in 1997. Before joining the University of Texas in 1999, Dr. Lightsey worked at NASA's Goddard Space Flight Center for 13 years. He has authored over 40 technical publications and holds one U.S. patent. Dr. Lightsey has received awards such as the AIAA Young Engineer of the Year, the NASA Center of Excellence Award, and the Institute of Navigation's Tycho Brahe Award. His current research interests include algorithm and sensor design for navigation and attitude determination, spacecraft guidance and control, and small satellite design. He is an Associate Fellow of the AIAA, a Professional Member of the Institute of Navigation, and a Member of the American Astronautical Society. He has been a member of the AIAA GN&C Technical Committee since 2000 and was the Technical Program Co-Chair for the AIAA GN&C conference in 2003.



PING LU, Professor of Aerospace Engineering at Iowa State University, received his B.S. from the Beijing Institute of Aeronautics and Astronautics, China, in 1982 and his M.S.E. and Ph.D. in aerospace engineering from the University of Michigan in 1984 and 1988, respectively. He worked as a Postdoctoral Fellow from 1988 to 1989 at the University of Michigan. Since 1990 he has been with Iowa State University. His research interests include aerospace guidance, nonlinear control theory and applications, and trajectory optimization. He is an Associate Fellow of AIAA and was a Member of the AIAA Technical Committee on Guidance, Navigation, and Control (1994–2000).



MICHAEL B. MCFARLAND, Senior Systems Engineer with Science Applications International Corporation, is currently involved in a variety of technology development and transition activities to support the Army's Future Combat Systems program. He received his B.S. in aerospace engineering with high honors from the University of Florida in 1991 and his M.S. and Ph.D. in aerospace engineering from the Georgia Institute of Technology in 1992 and 1997, respectively. From 1991 to 1999, he was a Research Aerospace Engineer with the Air Force Research Laboratory Munitions Directorate at Eglin Air Force Base, where some of his research efforts focused on genetic algorithms, hybrid numerical/analytical methods for optimal aeroassisted orbit transfer vehicle guidance, robust nonlinear missile autopilot architectures, missile guidance laws, adaptive nonlinear control using artificial neural networks, and optimal path planning. From 1999 to 2004, he was a Senior Engineer with Raytheon Missile Systems, where he developed guidance, autopilot, and navigation algorithms for several different tactical missile systems. His current research interests include missile guidance and control, applications of adaptive and nonlinear control theory, and artificial neural networks. He is an Associate Fellow of AIAA, Member of the AIAA Missile Systems Technical Committee, Member of the Institute of Electrical and Electronics Engineers, and Life Member of Tau Beta Pi.



COLIN R. MCINNES is Professor of Engineering Science at the Department of Mechanical Engineering, University of Strathclyde. He obtained a B.Sc. (Hons.) in physics and astronomy and a Ph.D. in astrodynamics from the University of Glasgow in 1988 and 1991, respectively. He was then appointed as a lecturer in the Department of Aerospace Engineering in October 1991 and was subsequently Reader (1996) and Professor (1999). He joined the University of Strathclyde in September 2004. His research interests center on highly non-Keplerian orbits for solar sails, solar sail mission analysis and design, autonomous spacecraft control, and space robotics. Recent contributions include studies of high-energy sample return missions using solar sails for the ESA and mission applications of non-Keplerian orbits for NOAA and the Lockheed Martin Corporation. He is a Fellow of the Royal Astronautical Society, the Institute of Physics, and the Royal Society of Edinburgh and was elected a Fellow of the Royal Academy of Engineering in July 2003.



ROBERT G. MELTON is a Professor of Aerospace Engineering at the Pennsylvania State University. He received his B.S. in physics (cum laude) from Wake Forest University in 1976, and his M.S. in physics (1979) and Ph.D. in engineering physics (1982) from the University of Virginia. His research includes work in celestial mechanics, non-Keplerian astrodynamics, trajectory optimization, optimum station-keeping for space-based interferometry, and satellite attitude dynamics and control. An Associate Fellow of AIAA, he has served on its Astrodynamics Technical Committee and on the *Journal of Guidance, Control, and Dynamic's* Applications Advisory Board. He is a member of Sigma Pi Sigma (Physics Honor Society) and a Fellow of the American Astronautical Society, in which he has served as Chair of the Space Flight Mechanics Technical Committee, and Vice President-Technical; and in which he is currently Vice President-Publications.



JAMES MITCHELL is a Technical Fellow with the Boeing Company. He has 30 years of experience in aircraft control system design, with the last 20 years being specifically involved in the design of fly-by-wire flight control systems for fixed- and rotary-wing aircraft. He gained his Bachelors degree in aeronautical engineering in 1974 from the Imperial College of Science and Technology in London, England. His early working experience was with Westland Helicopters, where he was a member of a team developing a family of unmanned rotorcraft, which are now to be seen as objects of interest in the British Helicopter Museum at Weston-super-Mare, England. He continued his career with Canadair in Montreal, Canada, where he was involved with the design of the Canadair Challenger business jet. He joined Boeing in Seattle in 1979 as part of the flight controls team for the Boeing 767. His career at Boeing since then has included the Boeing 767 and Boeing 777 commercial transports, the Boeing-Sikorsky RAH-66 Comanche helicopter, and the Bell-Boeing V-22 and Bell-Boeing (now Bell-Agusta) 609 tilt-rotor aircraft. He is now supporting the design of the flight control system for the Boeing 7E7 Dreamliner. A member of the American Helicopter Society, AIAA, and Society of Automotive Engineers, Jim is also a member of the Steering Committee for the Software System Safety Working Group chaired by Professor Nancy Leveson of MIT, which addresses areas of common interest between diverse industries that use software as a means of controlling safety critical functions.



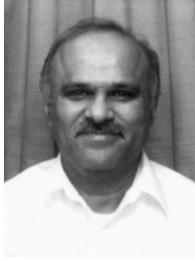
VIVEKANAND MUKHOPADHYAY received his S.M. and Sc.D. degrees in aeronautics and astronautics from Massachusetts Institute of Technology in 1970 and 1972. He was awarded the President of India Gold Medal and B.Tech. degree at the Indian Institute of Technology in 1968. He is presently a Senior Research Engineer at NASA Langley Research Center, Aerospace Systems Concepts and Analysis Division. His prior positions include Assistant Professor, Indian Institute of Technology; Research Specialist, Planning Research Corporation; Adjunct Associate Professor, George Washington University, Joint Institute for Advancement of Flight Sciences; and Senior Research Engineer, Aeroelasticity Branch and Systems Analysis Branch at NASA Langley. He is an Associate Fellow of AIAA, and a recipient of the prestigious NASA Floyd Thompson Fellowship. He has 35 years of research and teaching experience in the areas of applied optimal control, aeroservoelasticity, and structural dynamics and has many publications in archival journals. He was a contributing author to the Academic Press series *Advances in controls and Dynamics*, AIAA History of Key Technologies series, and "Benchmark Active Control Technology" special publications. His research interests are in the areas of robust control, active flutter suppression, multidisciplinary analysis, and optimization of advanced aerospace concepts. He has made key contributions to many NASA Langley projects including Drone for Aeroelastic and Structural Testing, Active Flexible Wing Flutter suppression, Benchmark Active Control Technology, Joined Wing Concept, Advanced Vehicle Systems Technology Programs, and Blended Wing Body vehicle design and optimization.



JUREK Z. SASIADEK is a Professor of aerospace engineering in the Department of Mechanical and Aerospace Engineering at Carleton University, Ottawa, Ontario, Canada. He received his M.S. (1972), Ph.D. (1975), and D.Sc. from the Technical University of Wroclaw, Wroclaw, Poland. His research interests focus in two main areas. The first is robotics, especially space robotics and unmanned autonomous vehicles (UAVs). The second area involves guidance, navigation, and control, especially spacecraft and aircraft control and nonlinear control. In 1989–1991 Dr. Sasiadek was with the Canadian Space Agency in Ottawa, and in 1985–1987 he was a Technical Director for Alberta Research Council, Calgary, Alberta. He has authored or coauthored more than 180 journal and refereed conference papers. Professor Sasiadek is a member of the AIAA Guidance, Navigation, and Control Technical Committee. An Associate Fellow of AIAA, he was a Program Chair of the 1994 AIAA Guidance, Navigation, and Control Conference in Scottsdale, Arizona. In August 2001, he was General Chair of the 2001 AIAA Guidance, Navigation, and Control Conference in Montreal, Quebec. Currently, he is Chair of an IFAC Robotics Technical Committee. Also, he is a Chair of Joint Robotics and Control Systems Societies Chapter in Ottawa.



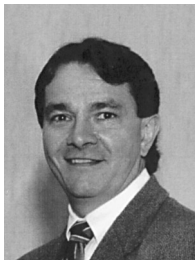
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M. BALA SUBRAHMANYAM was born in the state of Andhra Pradesh, India, in 1949. He received his B.S. (1970) in electrical engineering from the Regional Engineering College, Warangal, India, and his M.S. (1972) and Ph.D. (1975) in electrical engineering from the University of Iowa, Iowa City, Iowa. Dr. Subrahmanyam has held faculty positions with Texas A&M University, Kingsville, Texas, and the University of Missouri-Columbia, Columbia, Missouri. He was also with the Naval Air Warfare Center, Patuxent River, Maryland, working in the area of research and development of flight control systems of advanced naval aircraft. Currently he is with the Lockheed Martin Advanced Technology Center in Palo Alto, CA, working on the Advanced EHF and Airborne Laser programs. He is also an Adjunct Professor with the Florida Institute of Technology. Dr. Subrahmanyam's research interests include the areas of guidance and control problems of aircraft and missiles, H 1 control, and optimal control. He has published over 30 journal articles in these areas. In addition, he has written the books *Optimal Control with a Worst Case Performance Criterion and Applications* (Springer-Verlag, 1990) and *Finite Horizon H 1 and Related Control Problems* (Birkhauser, 1995). He is an Associate Fellow of the AIAA.



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