



Editorial

JMD Editorial Board

All scholars know that preparing a manuscript of new research work for scholarly publication is a lot of work. Shepherding a submitted manuscript to its eventual publication among meritorious peers in JMD is also a lot of work. This shepherding, formally referred to as the publication process, happens only because of the untiring volunteer efforts of the JMD Editorial Board. The Board consists of the (Technical) Editor and Associate Editors. The Editor serves for five years, and the Associate Editors for three years with the possibility for one time renewal. All appointments must be approved by the ASME Design Engineering Executive Committee and the ASME Publications Committee.

The JMD publication process follows closely the society guidelines of ASME, summarized here.

Overview of the Process

1. A manuscript or other work is submitted to the journal.
2. The Editor reads the work and determines if it is appropriate and worthy of review.
3. The Editor assigns the work to an Associate Editor, who oversees the review process.
4. The Associate Editor assigns the work to qualified reviewers.
5. The work is reviewed in accordance with ASME standards and requirements.
6. Based on the reviews, the Associate Editor makes a recommendation to the Editor, who makes the final determination of acceptance or rejection.
7. Accepted works are processed for publication; rejected works are returned to the authors.

The primary responsibility of the Editor is to oversee the technical content and operation of the journal. In overseeing the technical content, the Editor is responsible for

- determining acceptance or rejection of all materials considered for publication;
- managing the Associate Editors and overseeing their roles and responsibilities in coordinating the review process;
- maintaining commitment to standards of high quality;
- enrolling and maintaining qualified reviewers to consistently contribute and support the journal by judging the technical merit of potential material;
- maintaining the health of the journal and inspire new growth;
- maintaining technical currency in the overall journal subject matter.

In overseeing the operation of the journal, the Editor is responsible for

- encouraging and supporting the Associate Editors;
- nominating potential Associate Editors to the Publications Committee for approval;
- cooperating with the ASME Technical Publishing Department

staff to ensure timely publication of journal issues and implementation of state-of-the-art technologies in the production process;

- staying current with publishing technologies to assist and support authors, Associate Editors, and reviewers;
- overseeing the management of the editorial office and related journal administrative functions;
- participating in meetings and activities of the Board of Editors.

The primary responsibility of the Associate Editor is to oversee the peer review process of the technical works assigned. Associate Editors are responsible for

- enrolling and maintaining qualified reviewers to consistently contribute and support the journal by judging the technical merit of potential material;
- ensuring the review is completed in a timely manner and in accordance with Society policy and standards;
- recommending acceptance or rejection of all materials considered for publication to the journal Editor;
- maintaining active communication with authors and reviewers during the peer review process;
- ensuring authors address review comments and prepare and complete their work in accordance with Society guidelines and standards;
- maintaining commitment to standards of high quality;
- assisting and supporting the Editor in maintaining the health of the journal and inspiring new growth;
- maintaining technical currency in the overall journal subject matter and in a personal specialty area;
- staying current with publishing technologies to assist and support authors;
- cooperating with the ASME Technical Publishing Department staff to ensure timely publication of journal issues and implementation of state-of-the-art technologies in the production process.

As a design educator, I am fond of checklists. It is the simplest way to get you to think in a focused way without limiting you. The checklists above provide daily guidance to all of us on the JMD Editorial Board, as we strive to serve our community. The list below provides names and short biographies of the current members of the JMD Editorial Board, and two associate editors who just completed their second term of service: Shapour Azarm and Larry Howell. You can follow editorial board composition changes in www.asmejmd.org.

On behalf of our community, I would like to thank all of our associate editors, past, present, and future, for their selfless, competent service.

Panos Y. Papalambros
Technical Editor

Technical Editor



Panos Y. Papalambros, Ph.D., P.E., is the Donald C. Graham Professor of Engineering and Professor of Mechanical Engineering at the University of Michigan, Ann Arbor. He also holds faculty appointments in the College of Architecture and Urban Planning, and the School of Art and Design. He holds a diploma in mechanical and electrical engineering from the National Technical University of Athens, and M.S. and Ph.D. degrees in mechanical engineering from Stanford University. He has co-authored the textbook *Principles of Optimal Design: Modeling and Computation* (1988, 2000). He is a Fellow of ASME and SAE, and recipient of the JSME Systems and Design Achievement Award, ASME Design Automation, ASME Machine Design, and ASME Spira Outstanding Design Educator Awards.

Areas of interest: design optimization, design science

Associate Editors



Janet K. Allen, Ph.D., is Professor of Mechanical Engineering in the George W. Woodruff School of Mechanical Engineering at Georgia Tech Savannah. She received her S.B. degree from the Massachusetts Institute of Technology and her Ph.D. from the University of California, Berkeley. She is a Fellow of the American Society of Mechanical Engineers, a Senior Member of the American Institute of Aeronautics and Astronautics and an Honorary Member of Pi Tau Sigma, the mechanical engineering honor society.

Areas of interest: systems design, robust design, intellectual foundations of design

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Diann Brei, Ph.D., is an Associate Professor in the Mechanical Engineering Department at the University of Michigan, Ann Arbor. She received her BSE degree in Computer Systems Engineering and her Ph.D. degree in Mechanical Engineering from Arizona State University. She co-directs the General Motors/University of Michigan Smart Materials and Structures Collaborative Research Laboratory. She is currently the Technical Chair of the ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems. She serves on the ASME Adaptive Structures and Material Systems Technical Committee and has been the chair of the AIAA Adaptive Structures Technical Committee. She has over 90 publications in the area of Smart Material Device Innovation with several best paper awards and is a holder of 3 US patents. She is an AIAA Associate Fellow and recipient of the Hartwell Award, UM Ruth and Joel Spira Outstanding Teaching Award, and National Multiple Sclerosis Society Da Vinci Award.

Areas of Interest: device innovation, smart materials and structures, actuation



Jonathan Cagan, Ph.D., P.E., is the George Tallman and Florence Barrett Ladd Professor in Engineering, in the Department of Mechanical Engineering at Carnegie Mellon University, with appointments in the School of Design and Computer Science. At Carnegie Mellon, Cagan co-directs the Master in Product Development program and co-directs the Center for Product Strategy and Innovation. He is the co-author of *Creating Breakthrough Products* (with Craig Vogel) and *The Design of Things to Come* (with Craig Vogel and Peter Boatwright), and the co-editor of *Formal Engineering Design Synthesis* (with Erik Antonsson). He is the recipient of the engineering college's Outstanding Research Award. Cagan is a Fellow of the American Society of Mechanical Engineers and serves on the Advisory Board for The Design Society. Dr. Cagan received his Bachelor of Science in 1983 and Master of Science in 1985 from the University of Rochester, and his Ph.D. in 1990 from the University of California at Berkeley. All of his degrees are in Mechanical Engineering.

Areas of interest: product development, computational innovation, cognitive-based engineering



Thomas R. Chase is a Professor and Morse-Alumni Distinguished Teaching Professor of Mechanical Engineering at the University of Minnesota. Dr. Chase received his Ph.D. from the University of Minnesota in 1984. He chaired the Design Engineering Division in 2002–2003, the Mechanisms Committee in 1993–1994, and the Design Engineering Technical Conferences in 1994.

Areas of interest: mechanism synthesis, machine element design, hydraulics, the design of apparatus for high energy physics experiments, database design for computer aided engineering



Mary Frecker is a Professor of Mechanical Engineering at the Pennsylvania State University. She has a B.S. from the University of Dayton, and an M.S. and Ph.D. in Mechanical Engineering from the University of Michigan. When she joined Penn State in 1997, she was awarded the Pearce Endowed Development Professorship in Mechanical Engineering. Dr. Frecker has also been awarded the GM/Freudenstein Young Investigator Award by the ASME Mechanisms Committee (2002), the Outstanding Advising Award by the Penn State Engineering Society (2002), and the Outstanding Research Award by the Penn State Engineering Society (2005). She is a Fellow of the ASME. Dr. Frecker is an Associate Editor of the ASME Journal of Mechanical Design, and serves as Chair of the ASME Adaptive Structures Technical Committee. She is also a member of the ASME Mechanisms Committee.

Areas of interest: compliant mechanism design, medical device design, smart structures



John K. Gershenson, Ph.D., is a Professor of Mechanical Engineering at Michigan Technological University and the director of the Product and Process Architecture Alignment Center and heads the center's Life-cycle Engineering Laboratory. He also is the department's Manufacturing/Industrial Area Director. Dr. Gershenson is a graduate of Cornell University and The Ohio State University and holds a doctorate in Mechanical Engineering from the University of Idaho.

Areas of interest: product family design, product platforms, modular product design, assembly systems platforming, lean engineering, life-cycle design, lean manufacturing, and systems design for the environment



Ashitava Ghosal is a Professor of Mechanical Engineering and the Centre for Product Design and Manufacture at the Indian Institute of Science, Bangalore. He obtained B.Tech, M.S., and Ph.D. degrees in mechanical engineering from the Indian Institute of Technology at Kanpur, University of Florida at Gainesville, and Stanford University, respectively. Prior to joining Indian Institute of Science, Bangalore he had research appointments at Carnegie Mellon University and at Integrated Systems, Inc., Santa Clara. He is interested in various aspects of robotics and multi-body mechanical systems, design of mechanical systems, and product design, and has published over 70 papers in international journals, conference proceedings, and workshops. He has authored the textbook *Robotics: Fundamental Concepts and Analysis* (Oxford University Press, 2006). More details on his research and other activities are available at <http://www.mecheng.iisc.ernet.in/~asitava>

Areas of interest: robotics and product design

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Jeffrey W. Herrmann is an associate professor at the University of Maryland, where he holds a joint appointment with the Department of Mechanical Engineering and the Institute for Systems Research. He is the director of the Computer Integrated Manufacturing Laboratory and Associate Director for the University of Maryland Quality Enhancement Systems and Teams (QUEST) Honors Fellows Program. He is a member of INFORMS, ASME, IIE, SME, and ASEE. He was the chair of the ASME Design for Manufacturing Technical Committee. Dr. Herrmann earned his B.S. in applied mathematics from Georgia Institute of Technology. As a National Science Foundation Graduate Research Fellow from 1990–1993, he received his Ph.D. in industrial and systems engineering from the University of Florida.

Areas of interest: engineering design decision-making, design optimization, design for manufacturing, operations research



Yan Jin is a Professor of Aerospace & Mechanical Engineering at University of Southern California and Director of USC IMPACT Laboratory. He received his Ph.D. degree in Naval Architecture and Ocean Engineering from the University of Tokyo. Prior to joining the USC faculty in 1996, he worked as a Post-doctoral Research Fellow at the University of Tokyo and as a Senior Research Scientist at Stanford University. He is the recipient of a National Science Foundation CAREER Award (1998), TRW Excellence in Teaching Award (2001), Best Paper in Human Information Systems (5th World Multi-Conference on Systemics, Cybernetics and Informatics, 2001), and Xerox Best Paper Award (ASME International Conference on Design Theory and Methodology, 2002). He is currently an Editorial Board member of International Journal of AI in Engineering Design, Analysis, and Manufacturing (AIEDAM) and International Journal of Advanced Engineering Informatics. He also served as Conference Chair and Program Chair of the ASME Design Theory and Methodology (DTM) Conferences, and Vice Chair of the DTM Committee.

Areas of interest: design cognition, conceptual design method and technology, self-organizing and complex systems, and engineering collaboration



Pierre M. Larochelle, Ph.D., P.E., is the Assistant Dean for Academics & Accreditation and Professor of Mechanical Engineering at the Florida Institute of Technology. At Florida Tech he is the founder and director of the Robotics and Spatial Systems Laboratory (RASSL). He received his Bachelors of Science in Mechanical Engineering from the University of California at San Diego (1989), and his Masters of Science (1991) and Ph.D. (1994) degrees in Mechanical Engineering from the University of California at Irvine. He has over 100 publications, is the holder of one US patent, and has served as a consultant to a number of companies in the areas of robotics, automation, machine design, and computer-aided design. He is a Fellow of ASME and a recipient of the MDI Mechanical Simulation Software Award.

Areas of interest: kinematics, robotics, mechanisms, machines, and design of robotic mechanical systems



Zissimos P. Mourelatos, Ph.D., is a Professor of Mechanical Engineering at Oakland University in Rochester, MI. Before joining Oakland University, he spent 18 years at the General Motors Research and Development (GM R&D) Center. He holds a diploma in Marine Engineering and Mechanical Engineering from the National Technical University of Athens, Greece, two M.S. degrees (Naval Architecture and Marine Engineering, and Mechanical Engineering) from The University of Michigan, and a Ph.D. degree (Naval Architecture and Marine Engineering) from The University of Michigan. He is active in the dynamics and vibrations as well as design automation communities. Dr. Mourelatos has published over 110 journal and conference publications in the areas of design under uncertainty and structural dynamics. He is the Editor-in-Chief of the International Journal of Reliability and Safety, an Associate Editor of the ASME Journal of Mechanical Design, and a SAE Fellow.

Areas of interest: design under uncertainty, probabilistic and non-probabilistic uncertainty theories, structural dynamics



Karthik Ramani is a Professor in the School of Mechanical Engineering and of Electrical and Computer Engineering (by Courtesy) at Purdue University. He earned his B.Tech from the Indian Institute of Technology, Madras, in 1985, an M.S. from The Ohio State University, in 1987, and a Ph.D. from Stanford University in 1991, all in Mechanical Engineering. He has been recognized by Purdue University through a University Faculty Scholars Award (2002), Discovery in Mechanical Engineering Award (2005), Research Excellence Award throughout the College of Engineering at Purdue University in 2007. He serves in the editorial board of Elsevier Journal of Computer-Aided Design. He is also serving on the Engineering Advisory Board for the National Science Foundation (Industrial Innovation and Partnerships) for 2007–2010. He also serves as the technology-business advisor at Imaginestics, that launched the world's first commercial on-line shape-based search engine for the manufacturing supply chain. <https://engineering.purdue.edu/~ramani/>

Areas of interest: digital and computational geometry, shape design and analysis, shape and ontology search, computational tools for early design innovation



José M. Rico, Ph.D., is an Associate Professor in the Department of Mechanical Engineering at the Institute of Technology at Celaya. He received a B.S. degree from the Calaya Institute of Technology in 1975 and a Masters from the Monterrey Institute of Technology and Higher Education in 1977, both in Mechanical Engineering. Since his retirement in 2005, he is affiliated with the Department of Mechanical Engineering at Guanajuato, Campus Irapuato-Salamanca. He has been a visiting scholar at the University of Florida, Arizona State University, University of California-Davis, and the French Institute of Advanced Mechanics under the sponsorship of Professor Joseph Duffy, Professor Joseph K. Davidson, Professor Bahram Ravani, and Professor Grigore Gogu, respectively. He has been author or co-author of 40 papers in archival journals and 60 papers in conferences and has been an ASME member since 1975.

Areas of interest: theoretical and computational kinematics and applied mathematics



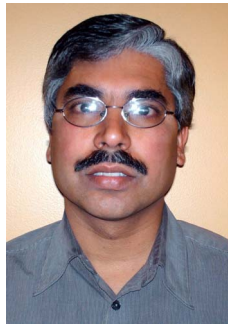
James P. Schmiedeler, Ph.D., is an Associate Professor in the Department of Aerospace and Mechanical Engineering at the University of Notre Dame. He received a B.S. degree from the University of Notre Dame and M.S. and Ph.D. degrees from The Ohio State University, all in mechanical engineering. He was previously an Assistant Professor at the University of Iowa (2002–2003) and at The Ohio State University (2003–2008). In 2002, he was a summer faculty research fellow at NASA's Jet Propulsion Laboratory in Pasadena, CA, and in 2007, he was awarded the Presidential Early Career Award for Scientists and Engineers (PECASE) for his work in modeling human motor coordination and robot-assisted rehabilitation.

Areas of interest: machine design, robotics, biomechanics



Timothy W. Simpson, Ph.D., is a Professor of Mechanical and Industrial Engineering at the Pennsylvania State University in University Park, PA. He also holds faculty appointments in the School of Engineering Design, Technology, and Professional Programs and the College of Information Sciences and Technology. He received a B.S. degree in mechanical engineering from Cornell University and M.S. and Ph.D. degrees in mechanical engineering from the Georgia Institute of Technology. He is the lead editor on the book *Product Family and Product Platform Design: Methods and Applications* (2005). He is an Associate Fellow of AIAA and is active in ASME and ASEE. He is the recipient of a NSF Career Award, SAE Ralph R. Teetor Educational Award, AIAA Multidisciplinary Design Optimization Technical Committee Outstanding Service Award, and the Pennsylvania State University President's Award for Excellence in Academic Integration.

Areas of interest: product family design, product platforms, metamodeling, visualization



Avinash Singh, Ph.D., is a Senior Staff Engineer in the Advanced Power Transfer Group of GM Powertrain, General Motors Corporation. He received his B.Tech. degree from the Institute of Technology, BHU, India in 1990, and his M.S. and Ph.D. degrees in Mechanical Engineering from the Ohio State University in 1992 and 1997. Dr. Singh works on power transmission component technology and his research interests are in the areas of gear system design and analysis, gear system dynamics and noise, development and validation of high fidelity models, power losses, rotating system diagnostics, and fatigue life prediction. He currently serves as the Vice Chair of the ASME Power Transmission and Gearing committee of the DED. Areas of interest: transmission component design and analysis, model development and validation



Alexander H. Slocum is the Pappalardo Professor of Mechanical Engineering at MIT. Alex has written two books on machine design, *Precision Machine Design* and *FUNdaMENTALs of Design* (free download on <http://pergatory.mit.edu>), published more than 150 papers, and has over seven dozen patents issued or pending. Alex regularly works with companies on the development of new products and has been significantly involved with the invention and development of 11 products that have been awarded R&D 100 awards. Alex is a Fellow of the ASME and the recipient of the Society of Manufacturing Engineer's Frederick W. Taylor Research Medal, ASME Leonardo daVinci Award, and the ASME Machine Design Award.

Areas of interest: machine elements, precision machine design, MEMs



Janis Terpenney, Ph.D., is an Associate Professor of Engineering Education and Mechanical Engineering and an affiliate faculty of Industrial and Systems Engineering at Virginia Tech. She is the Director of the Center for e-Design, a five-university NSF industry/university cooperative research center. She is an Advance Professor and Diggs Teaching Scholar at Virginia Tech and a Dean's Faculty Fellow in the College of Engineering. Formerly, she was an assistant professor at the University of Massachusetts Amherst and has prior industrial work experience with General Electric (GE) Corporation, including the completion of a two-year corporate management program. She received her B.S. degree in Applied Mathematics from Virginia Commonwealth University (1979). She earned her M.S. degree in Industrial Engineering and Operations Research (1981) and Ph.D. degree in Industrial and Systems Engineering (1996) from Virginia Tech. She is a member of ASME, ASEE, and senior member of IIE.

Areas of interest: design process and methods, knowledge engineering, product families and platforms, product obsolescence, student learning and engagement related to design education



Kwun-Lon Ting is a Professor of Center for Manufacturing Research and Mechanical Engineering Department at Tennessee Tech University. He has a B.S. degree from National Taiwan University, an M.S. degree from Clemson University, and a Ph.D. degree from Oklahoma State University. During his tenure at Tennessee Tech, he received eight research grant awards from National Science Foundation, Caplenor Faculty Research Award from the university, and Kinslow Engineering Research Award twice from the engineering college. He was the recipient of the South-Pointing Chariot Award and Bernard Roth Award from Applied Mechanisms and Robotics Conference. He is a Fellow of ASME.

Areas of interest: kinematics, mechanisms, robotics, linkage mobility, geometric design



Philippe Velex graduated from INSA Lyon (France) in 1984 with Meng. in Mechanical Engineering. He obtained his Ph.D. from the same establishment in 1988. He was appointed Full Professor of Mechanical Engineering in 1998. He is head of the “Mechanical Systems and Contact” research group of LaMCoS (INSA Lyon) and director of the CETIM-INSA joint laboratory on Mechanical Transmissions. His research topics comprise the analysis of interactions between lubricated contacts and the static and dynamic behavior of mechanical systems. He is also the director of the International English-Speaking Undergraduate Section at INSA Lyon.

Areas of interest: gear dynamics, power losses, loads and stresses, lubrication in gears



Hong-Sen Yan is an NCKU Chair Professor at the National Cheng Kung University (Tainan, Taiwan) in the Department of Mechanical Engineering. He also serves as the Director of the NCKU Museum. He holds a B.S. degree from the National Cheng Kung University, M.S. degree from the University of Kentucky, and Ph.D. degree from Purdue University, all in mechanical engineering. He is the author of two Springer books, *Creative Design of Mechanical Devices* (1998) and *Reconstruction Designs of Lost Ancient Chinese Machinery* (2007). He is a Fellow of ASME, and recipient of ASME Best Paper Award (Mechanism Conference) and National Chair Award (Ministry of Education, Taiwan, ROC). And, he collects ancient Chinese padlocks as a hobby.

Areas of interest: kinematics, conceptual design of mechanisms and machines, reconstruction design of ancient machinery

Recently Completed Terms



Shapour Azarm, Ph.D., P.E., is a Professor of Mechanical Engineering at the University of Maryland (UMD), College Park. He holds a faculty appointment with the Applied Mathematics and Scientific Computation Program at UMD. He has B.S., M.S., and Ph.D. degrees, all in mechanical engineering, from the University of Tehran, George Washington University, and the University of Michigan, respectively. He is the past chair of the ASME Design Automation Conference, Design Automation Committee, and Design Engineering Division. He is the recipient of the 2007 Design Automation Award. He is a Fellow of ASME.

Areas of interest: multi-objective optimization, multi-disciplinary optimization, sensitivity analysis, approximation, multi-attribute decision making



Larry L. Howell, Ph.D., P.E., is a Professor and past chair of the Department of Mechanical Engineering at Brigham Young University (BYU), where he holds a University Professorship. Professor Howell received his B.S. degree from Brigham Young University and his M.S. and Ph.D. degrees from Purdue University. Prior to joining BYU in 1994 he was a visiting professor at Purdue University, a finite element analysis consultant for Engineering Methods, Inc., and an engineer on the design of the YF-22 (the prototype for the U.S. Air Force F-22). He is a Fellow of ASME and past chair of the ASME Mechanisms & Robotics Committee. Professor Howell's patents and technical publications focus on compliant mechanisms and microelectromechanical systems. He is the author of the book *Compliant Mechanisms* published by Wiley.

Areas of interest: compliant mechanisms, microelectromechanical systems (MEMS) design