



Experimentally Speaking...

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MESSAGE FROM THE PRESIDENT



Kathryn Dannemann, SEM President, 2017-2018

My Presidential year is flying by due to the many happenings and advancements underway at SEM. This column will highlight some of them, and encourage you to take advantage of all the opportunities SEM provides.

Our dedicated headquarters staff have worked diligently to transition us to a new website, this past Fall, following a total system redesign. If you have not visited the SEM website recently, check out the improvements. The new site provides a better interface, and faster access to SEM news, events and content. Thanks to Kathy Miller, our new Communications Manager who joined us in January, for spearheading this transition. Another very recent addition to the headquarters staff is David Ciola, our new Managing Director (see the SEM website for more about David). David participated in the Officers' meeting in Bethel in early November, and is most excited to apply his diverse technical experience to further advance SEM. Kristin Zimmerman, our Executive Director, will mentor David as he transitions to the SEM family.

Other activities in progress include the addition of videos to the website for many of the technical divisions (TD's). The videos highlight the strengths and focus of each TD and provide useful info for current and future members. Our journals continue to provide the latest technical content to the Experimental Mechanics community – within SEM, and beyond. Thank you to all who

contribute to these high quality technical publications: Nuno Lopes, Managing Editor, editors, associate editors, and countless reviewers. Your service is most appreciated, and does not go unnoticed. Ioannis Chasiotis, Editor-in-Chief of Experimental Mechanics (EM), and his dedicated volunteer staff have contributed to EM's increased impact factor. EM was established in 1961 and publishes 9 issues annually. Experimental Techniques, with Paul Reynolds as Editor-in-Chief, has also sustained steady contributions. ET publishes 6 issues per year covering innovative techniques and practical applications of experimental mechanics. SEM's newest publication, the Journal of Dynamic Behavior of Materials (JDBM), has already established itself since the first issue was published in February 2015. Many thanks to Eric Brown, JDBM's Editor-in-Chief, for championing this new journal. I encourage all members to consider publishing your technical work in SEM's highly regarded journals. Other SEM publications in progress include: i) the Handbook of Structural Analysis and ii) numerous lecture books, being written by several SEM members, to be published by Morgan and Claypool with some royalties to SEM.

SEM conferences continue to attract members and newcomers alike. Their usefulness is proven by a continual increase in attendance, as well as the large number and diversity of papers presented. I'm convinced the quality of the technical programs, the opportunity

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to network with technical colleagues with similar interests, and the friendly atmosphere are what makes first time conference attendees return. The IMAC XXXVI Conference and Exposition will return to Orlando this year from February 12 through 15. IMAC's new byline, "It's not just Modal anymore" is indicative of the expanding program which includes nonlinear & structural dynamics, as well as modal analysis. The 2018 conference theme is "Engineering Extremes: Unifying Concepts in Shock, Vibration and Non-Linear Mechanics". It promises to be a success with over 400 scheduled papers and 3 pre-conference courses. The keynote, "Engineering Extremes: Experiments at the Edge of the Envelope", will be delivered by Jason Foley (AFRL).

Preparations are also underway for the Annual Conference in Greenville, SC from June 4 through 7 with more than 500 abstracts received to date. Special activities and sessions are planned to commemorate SEM's 75th Anniversary. The conference, "Celebrating Past Accomplishment and Exploring New Frontiers in Experimental Mechanics", will include an interactive session on SEM's history. A special logo, designed by Prof. Subhash (U of FL), will be used to commemorate our 75th anniversary; check it out on SEM's website. The celebration will commence with a plenary lecture by Prof. John Rogers of Northwestern University.

SEM partnered with BSSM (British Society for Strain Measurement) and ASEM (Asian Society for Experimental Mechanics) for the iDICs (International Digital Image Correlation Society) 2017 Conference and Workshop in Barcelona from November 6-9 with approximately 150 attendees. It provides a forum to extend the frontiers of DIC technology, standardize its use, and improve its practice and brings together leading experts from industry, academia, and laboratories around the world. Since its inception in 2015, iDICs has become the centralized nucleus for the state-of-the-art in DIC. SEM will manage the next iDICs US conference in 2020.

The extent of SEM publications, technical programming and events is quite extensive given the small size of our society. Though small in number (~1400 members worldwide), we are large in commitment in this "friendly" society. Thank you to all SEM members for your dedication to the application of experimental mechanics to addressing technical challenges that ultimately improve our world. A special thank you to Kristin Zimmerman, our Executive Director, who stepped in following the unexpected loss of Tom Proulx. It is hard to believe that three years has passed already! I vividly recall Tom's promise at the 2014 Annual Conference, also in Greenville, that he would not retire until after my Presidency. Hence, it is fitting that we return to Greenville for the Annual Meeting at the close of my Presidency. We fondly remember Tom whose spirit lives on at SEM. The Thomas W. Proulx SEM Development Fund was created in recognition of Tom's dedication, leadership, mentoring and forward thinking that enabled SEM to achieve sustainability. The fund remains open for those wishing to contribute. Kristin's leadership has further advanced SEM technically and ensured the financial viability of the society.

Jon Rogers deserves special recognition for returning as Treasurer of the society, following his "retirement" from that position after more than twenty years of service. We are also most grateful to the headquarters staff (Jen, Joni, Kathy, Nuno, Shari, Sharon) who make all of the above mentioned events and publications possible.

The health of any technical society is displayed in the vibrancy of its membership. SEM is blessed to have many active long-time members who continue to contribute to our mission. I've learned much from their wisdom and expertise. It is also exciting to meet students and first time conference attendees who are filled with enthusiasm. Thank you to all who encourage their attendance. Here's a New Year's challenge: invite a student or colleague to participate in an upcoming SEM conference. Personal invitations make such a difference and could greatly influence the future career of another, and SEM's future. Several SEM leaders have organized regional student conferences to introduce students to experimental mechanics and the wonders of networking with technical colleagues from other institutions. These conferences, held on a weekend at the host's university, are not a significant time commitment if many members are involved. The SEM Educational Foundation can provide minimal funds to assist with programming. Please contact me or Kristin if you would like to lead or participate in a student regional conference in 2018. Some have already expressed interest in organizing student conferences in the following regions: New England, Mid- Atlantic, Southeast (SC, NC, FL), Southwest (OK, TX), Midwest, and Southern California.

Our colleagues in industry could also benefit from SEM's technical offerings in structural dynamics and experimental mechanics to solve new technical challenges, especially those relative to infrastructure – so critical as evidenced by recent natural disasters. With their increased participation, we might also take new technical directions to address new challenges.

I look forward to seeing you at an upcoming conference (IMAC XXXVI, or the 75th Anniversary Celebration), or learning something new from your technical contributions to SEM journals. In the interim, please reach out to me with feedback on upcoming events, or suggestions for future programs and plans.

Best wishes for a happy holiday season and a fulfilling 2018!



Kathryn Dannemann
SEM President

FROM THE EXECUTIVE DIRECTOR

With this message, I would like to take the opportunity to share with you a few 2017 highlights.

SEM welcomes its newest staff member. On November 20, 2017, Dave Ciola joined the SEM Staff as its new Managing Director. David will manage day-to-day operations working closely with myself and the rest of the staff as we prepare for 2018. Please join me in welcoming Dave to our SEM team!

Our IMAC and Annual Conferences were both successes with strong technical programs and participation that enabled SEM to achieve its budget targets. Our Executive Board, Councils and Committees and Technical Divisions (TDs) accomplished a great deal and are hard at work putting together strong programs for 2018. At Annual, we launched our new coordinated track on Adaptive & Advanced Manufacturing with 3 days of programmed papers.

I continue to be encouraged as we tap into the new energy that I am feeling across, not only the veteran members, but amongst the rising number of new, young conference attendees and members. To this point, we evolved two of our existing IMAC Focus Groups into two new Technical Divisions (TDs). Our new Nonlinear Structures & Systems TD is led by the team of Gaetan Kerschen, Matthew Brake and Ludovic Renson; and our new Dynamic Substructures TD is led by the team of Andreas Linderholt, Matt Allen and Daniel Rixen. I look forward to the growth of the new TDs in terms of conference participation, contribution of presentations and publication in our SEM journals.

I want to also touch on the special planning that is ongoing in preparation for Annual 2018: SEM's 75th Anniversary – Celebrating Past Accomplishments and Exploring New Frontiers in Experimental Mechanics, June 4-7, 2018 in Greenville, South Carolina. The technical program, symposia, and special panels look

outstanding for what I'm sure will be a very successful conference and celebration of 75 years of SEM.

Our three SEM Journals continue to grow in quality and ranking. After our Annual conference we learned that EM and ET achieved their highest impact factors ever of 2.091, and 0.932 respectively. And, our Journal of Dynamic Behavior of Materials was recommended for Scopus indexing. A special thanks goes out to the Editor in Chief's, Ioannis Chasiotis, Paul Reynolds and Eric Brown and to their editorial teams for the outstanding work that they do on behalf of SEM!

I want to touch on a major effort that we have spent significant time working on, especially since June. We have purchased two new web platforms; one to manage our membership and events, and the other to manage technical programming and paper processing for publication in our proceedings. Over the past year plus, the website that we were using was not able to manage technical programming needs and most importantly, the members and their needs. There was a huge lack of member data quality making it impossible for the SEM staff to manage. We now have a new platform that will allow SEM to grow in many ways concerning communication with and amongst our conference attendees and membership. You will see a new look to our website with different types of outreach efforts from SEM as we ramp up for IMAC and Annual 2018.

The technical programming, paper processing web platform is requiring our broad team of member/volunteers as well as the staff to learn a brand new approach to collecting, programming and managing papers with our conference/session organizers. This new platform will roll out differently than the membership piece and will take time and significant effort from all of us as we learn how to maximize the site's capabilities such that it enables greater efficiency for all and far better ease

in preparing all aspects of conference programming.

Please continue to be patient with us as we work out the bugs on the site and we ask that you send us your input. We are striving to create your 'go-to' website for all things regarding SEM and the experimental mechanics community.

I always like to close with a special thank you to the SEM staff for their tireless work in putting together two outstanding conferences this year, for being there to answer the numerous emails from the conference attendees and members in preparation for the conferences, for going way above and beyond to learn the operational elements of the new web platforms, and for all of the other things that they do, day-in and day-out as a team to be sure SEM continues on its strong growth trajectory. The SEM staff is a key reason why we are referred to as the friendly society. I invite you to send an email to Jen, Shari, Joni, Nuno, Kathy, Sharon and Dave to acknowledge the work that they do on your behalf and on behalf of SEM. Thank You!!

I look forward to seeing many of you at IMAC and Annual 2018 and as always, invite your questions and comments, so please don't hesitate to email or call.

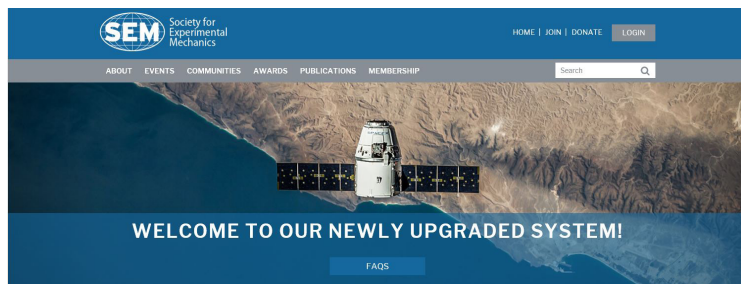


Kristin Zimmerman,
Executive Director

YOUR MEMBERSHIP

SYSTEM UPGRADE

We have recently updated our website to better serve you. The new system incorporates events, abstracts and member only sections. Please visit www.sem.org to see the changes.



IMAC REGISTRATION IS OPEN

IMAC registration is open and we are actively registering attendees for the conference. Those attending IMAC have learned that our registration site and process is a bit different this year. We hope that you are finding it easy to navigate and process your conference registration, add-ons, and payments.



We ask that you please go to sem.org, login and make sure that we have the most up to date information for you on file...including your preferred email and home address.

MEMBERSHIP AND DISCOUNTS

Are you interested in renewing your SEM membership? If so, when you register for one of our conferences, please click "Renew Membership" in order to take advantage of another year of membership.

Note: You must be a member in good standing in order to take advantage of the member discounts at the time of registration. If you join SEM when you are registering for the conference, we will be sent an email notice alerting us. For attendees joining SEM as individual members during the registration process, you will be invoiced an additional \$10. For student attendees, you will be invoiced an additional \$35.

What if you never attend an SEM conference but want to renew your membership? Not to worry, simply go online to sem.org, login and click "Renew Membership."

WHAT BENEFITS ARE INCLUDED IN YOUR SEM MEMBERSHIP?

- Access to over 20 Springer journals saving you thousands of dollars
- Access to Experimental Mechanics, Experimental Techniques, Journal of Dynamic Behavior of Materials (SEM's three peer reviewed journals)
- Access to Conference Proceedings
- Ability to Exhibit during our Conferences
- Discounts on Conference Registration
- Discounts on printed SEM journals
- Discounts on Wiley publications
- Discounts on Morgan and Claypool Publications
- NEW starting in 2018: Social Media connectivity to your SEM colleagues and fellow Technical Division members via Facebook, Twitter, LinkedIn, Twitter, Instagram, etc.

We want you to collaborate with one another in between conferences. You have communicated to us that you prefer using the social media sites listed. Our new web platform will enable you to do this. Please let us know what else you may want or need in the social media space.

MEMBERSHIP ALERT: OUR EMAILS ARE NOW @SEM.ORG

The SEM Member Newsletter is looking to hear from you, our members, to be sure that you understand all of your member benefits and learn what is new.

IMAC-XXXVI

IT'S NOT JUST MODAL ANYMORE

The IMAC Board made an interesting observation while reviewing the IMAC 36 program submissions from the Technical Divisions and Focus Groups. Modal analysis, which originally brought the community together, has branched out to verification and validation, shock, rotating machinery, health monitoring and many other diverse fields and applications represented in more than 425 presentations at IMAC 36. Describing IMAC as a "Structural Dynamics Exposition" falls short of what IMAC has become. The new tag line, "It's Not Just Modal Anymore" reminds us of the foundation of our community and removes any implied boundary for the IMAC stage.



REGISTER EARLY

Early Bird Rates*

Until 1/15/18 @ 5:00PM EST

Member - \$780

Non-Member - \$890

Student Member - \$250

Student Non-Member - \$325

**You must be a member in good standing by December 31st to take advantage of the member discount.*

COURSE 101: TEACHING, LEARNING & PERFORMING VIBRATION ANALYSIS – USING THE FREE ABRAVIBE MATLAB TOOLBOX

Sunday, February 11, 2018 | 9:00 a.m.–5:00 p.m.

Instructor:

Anders Brandt—University of Southern Denmark

This course is designed for teachers, students and practicing engineers alike. The course demonstrates how the free, open ABRAVIBE toolbox can be used for teaching, learning, and applying vibration analysis. It gives in-depth descriptions of typical methods used for noise and vibration analysis, modal analysis, and order tracking. The ABRAVIBE toolbox and website includes powerful tools including time domain filtering, integration and differentiation etc., spectrum analysis tools, and very powerful simulation tools for illustration and simulation of mechanical systems. This allows teachers to design good and informative examples, students to learn by applying and looking through the provided tools, and practicing engineers get a powerful tool for vibration analysis.

Detailed course information can be found on our website at sem.org

COURSE 102: INSTRUMENTATION, MONITORING AND ANALYSIS OF RECORDED MOTIONS FROM STRUCTURES USING OMA

Sunday, February 11, 2018 | 9:00 a.m.–5:00 p.m.

Instructors:

Prof. Rune Brincker—Aarhus University

Prof. Carlos E. Ventura—The University of British Columbia

This is a one-day course covering various aspects of instrumentation, monitoring and analysis of recorded motions in structures arising from dynamic excitations. The course will discuss practical aspects of instrumentation of structures, as well as the theory behind operational modal analysis techniques for vibration data. The use of these techniques will be illustrated by several application examples from instrumented structures, which include laboratory tests as well as in-situ tests of buildings and bridges.

COURSE 103: THEORY, EXPERIMENTS & APPLICATIONS FOR STRUCTURE MONITORING & MACHINE LEARNING – DESIGN, BUILD & ANALYZE REAL DATA USING LOW COST SENSORS

Sunday, February 11, 2018 | 1:00 p.m.–5:00 p.m.

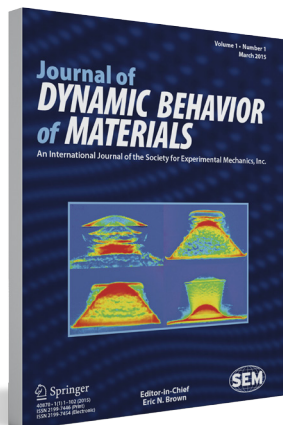
Instructors:

Haeyoung Noh—Carnegie Mellon University

Fernando Moreu, PE—University of New Mexico

First or second year graduate students who want to learn about sensors, data acquisition systems, signal processing, and machine learning, and want to become familiar with experimental processes related to structure monitoring. Engineers, researchers and graduate students who deal with structural design, inspection, and assessment and want to become familiar with using vibration measurements using lowcost sensing technologies and quantitative data post-processing.

JOURNAL UPDATE



DYNAMIC BEHAVIOR OF MATERIALS

I am pleased to share that 2017 was another very successful year for the Journal of Dynamic Behavior of Materials. We published 48 outstanding papers, including a Special Issue on Ejecta Edited by W. T. Buttler, R. J. R. Williams, F. M. Najjar of Los Alamos National

Laboratory in the USA, AWE PLC in the UK, and Lawrence Livermore National Laboratory in the USA respective. I am very excited to announce that following a rigorous application and review process the Journal of Dynamic Behavior of Materials was selected for inclusion in the SCOPUS index starting in 2017. We continue to be highly international with manuscripts published with authors from Belgium, Canada, China, Japan, France, Germany, India, Iran, Russia, Turkey, United Kingdom, and the United States of America. Thanks to robust submissions of high quality papers we continuing to grow in papers and page count. We have maintained our ability to offer timely reviews and prompt publication with median time to publication online of 3 months from submission for regular submissions and time from submission to inclusion in an issue of 5 months.

The journal publishes experimental and theoretical studies of metals, polymers, glasses, composites, granular materials, explosives, biological materials, geological materials, phase transitions, and structural response. The journal includes application and development of techniques including split Hopkinson pressure bar, Kolsky bar, plate impact with light gas guns and powder guns, Taylor anvil, spectroscopy- and pyrometry-based shock temperature measurements, optical and x-ray imaging methods, interferometry and velocimetry techniques, dynamic fracture, laser based dynamic drivers, penetration and ballistics, Equation of State and Spall Failure.

After the initial first two years with our publishing partner Springer Nature making papers freely available online at <http://www.springer.com/materials/special+types/journal/40870>, the Journal of Dynamic Behavior of Materials has moved to a subscription model. Please look for it in many of the Springer Nature bundles or encourage your library to subscribe. For SEM members, the Journal of Dynamic Behavior of Materials articles are freely available as a membership benefit through the SEM website.

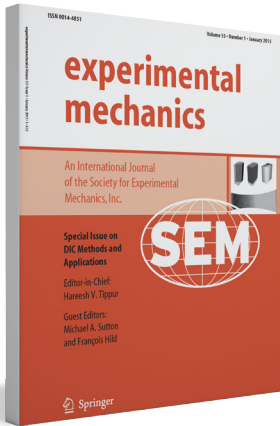
As part of the Society for Experimental Mechanics celebrating our 75th Anniversary in 2018, each issue of JDBM will feature a different image on the cover from past SEM publications. We also plan to include at least one review article in each issue. I welcome proposals for review articles highlighting the historic role of SEM in the field of dynamic behavior of materials for possible publication (email en_brown@lanl.gov).

For the past three years the cover image of the Journal of Dynamic Behavior of Materials has featured a series of proton radiographs of explosively shocked disks (left to right, top to bottom) of aluminum, copper, tantalum, and tin. These images were provided courtesy of Dr. David Holtkamp and the Los Alamos National Laboratory Proton Radiography Team. I am sad to share that David Holtkamp—my friend, colleague and mentor—passed away June 16, 2017. In recognition of his passing, we will retire the image from the cover the Journal of Dynamic Behavior of Materials after Volume 3, Issue 4.

Thank you to everyone who continue to make of the Journal of Dynamic Behavior of Materials a success including the authors without whom the journal would not have been possible, the Associate Technical Editors: Nadia Bahlouli, Nicola Bonora, Neil K. Bourne, Daniel T. Casem, Ellen K. Cerreta, Trevor Cloete, Kathryn A. Dannemann, Jow-Lian Ding, Pascal Forquin, Mikko Hokka, Jennifer L. Jordan, Leslie Lamberson, Jeffrey Nguyen, Thomas D. Sewell, Bo Song, Parameswaran Venkitanarayanan, Tracy Vogler, and Takashi Yokoyama, the Advisory Board members: Arun Shukla (Chair), Dana M. Dattelbaum, William L. Fourney, Yogendra Gupta, K. T. Ramesh, Naresh Thadhani, and Hareesh Tippur, and SEM Staff particularly Nuno Lopes.

Eric Brown,
Editor in Chief, Journal of Dynamic Behavior of Materials

JOURNAL UPDATE



EXPERIMENTAL MECHANICS

In 2017, Experimental Mechanics published 120 original papers in nine issues, one of which was a Special Issue, co-edited by Professors Hongbing Lu and Reza Mirshams with focus on Recent Advances in Nanoindentation. The remaining eight issues of EM

contained novel works, among others, on Digital Image (DIC) and Digital Volume Correlation (DVC), micro-computed tomography, mechanics of 3D printed materials, thermomechanics, high strain rates experiments, and optical, electron and probe microscopy based experimental methods for the study of a broad range of engineering and novel materials. All papers are available on online at <http://link.springer.com/journal/volumesAndIssues/11340>.

In 2017, the impact factor of Experimental Mechanics reached a new high of 2.091, for the first time surpassing the 2.0 mark, thanks to the efforts of its Editorial Board and the quality of papers submitted by all authors. The Editorial and International Boards of Experimental Mechanics invite all SEM members to submit your outstanding research to Experimental Mechanics and help further propel the reputation of our Society and continue the lasting contributions of Experimental Mechanics in the last 57 years.

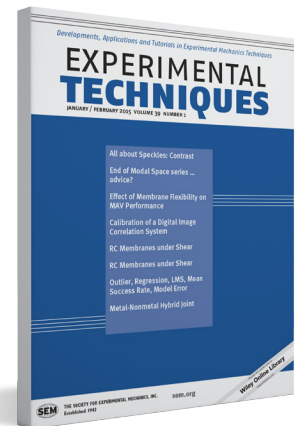
2018 marks the 75th anniversary of the Society for Experimental Mechanics. EM will celebrate this anniversary with invited review articles and several Special Issues that are currently in progress or will begin soliciting papers very soon: Professors Shuman Xia, Pradeep Guduru, and Henry Sodano have co-edited a Special Issue on "Mechanics of Energy Materials" which is expected to appear in early 2018, followed by a Special Issue on "Advances in Digital Image Correlation: Extreme-scale Applications, Algorithms, and Uncertainty Quantification", co-edited by Prof. Michael Sutton and Drs. Phillip Reu and Daniel Turner. Two more Special Issues will begin soliciting papers in early 2018: The first is titled "Experimental Advances in Mechanobiology" and will be co-edited by Professors Jonathan Reichner and Christian Frank, and the second planned Special Issue will be co-edited by Professors Yong Zhu and Taher Saif, and Dr. Frank DelRio with title "Recent Advances in Micro/Nano-scale Experimental Mechanics".

In closing, I would like to thank everyone who contributed to the success of EM in 2017, including the authors and reviewers, the Technical Editors: Antonio Baldi, Janice Barton, Vijay Chalivendra, Weinong Chen, Samantha Daly, Adrian DeWald, Christian Franck, Michel Grédiac, Louis Hector, Francois Hild, Jamie Kimberley, Francesco Lanza di Scalea, Hongbing Lu, Michael Mello, Paul Reynolds, John Shaw, Raman Singh, Clive Siviour, Junlan Wang, Huimin Xie, Satoru Yoneyama, Alan Zehnder, Yong Zhu, EM's Managing Editor Nuno Lopes, and Diane Jeffers for her support with the logistics of the journal.

Ioannis Chasiotis,
Editor-in-Chief, Experimental Mechanics

EXPERIMENTAL TECHNIQUES

2017 has been a year of significant activity for the Experimental Techniques (ET) journal. Over the past few years, ET has transitioned to a high quality formal peer reviewed format and has achieved its highest impact factor of 0.932. In addition, ET moved to a new publisher, Springer in 2016 introducing



both change and opportunity for the journal. The backlog of papers is now eliminated offering those interested in submitting their work to ET a chance to quickly publish their articles.

I would like to thank all those who work tirelessly to ensure the success of the journal. In particular, our current Associate Technical Editors; Masoud Allahkarami, Bonnie Antoun, Javad Baqersad, Jason Blough, Alfredo Cigada, Cosme Furlong, Paul Gloeckner, Jeff Helm, Luciano Lamberti, Brian Owens, Xing Zhang and Kristin Zimmerman; and our Managing Editor Nuno Lopes. Thanks also to all of our authors and reviewers, who's contributions continue to ensure the success of Experimental Techniques.

Paul Reynolds,
Editor in Chief, Experimental Techniques

2018 SEM EXECUTIVE BOARD NOMINEES

The SEM Nominating Committee has announced the following updates for the 2018–2019 SEM Executive Board. Biographies for each member appear in this article. Once elected, these members will join current Board members whose terms extend to 2019.



Wendy C. Crone



John Lambros



Daniel Rixen



Bonnie Antoun



Jason Blough



Raman Singh



Michael Todd

PRESIDENT

WENDY C. CRONE

Wendy C. Crone is a Professor in the Department of Engineering Physics with affiliate appointments in the Departments of Biomedical Engineering and Materials Science and Engineering at the University of Wisconsin–Madison. Her research is in the area of solid mechanics, and many of the topics she has investigated are connected with nanotechnology and biotechnology. She has applied her technical expertise to improving fundamental understanding of mechanical response of materials, enhancing material behavior through surface modification and nanostructuring, exploring the interplay between cells and the mechanics of their surroundings, and developing new material applications and medical devices. In addition to more than 50 peer reviewed journal publications, dozens of explanatory education products, and four patents, she is the author of the book *Survive and Thrive: A Guide for Untenured Faculty*. Prof. Crone has garnered awards for research, teaching and mentoring, including Fellow (2015) and M.M. Frocht Award (2013) from the Society for Experimental Mechanics (SEM). She has been a member of SEM since 1988 and has served on the Executive Board (2010–2012); National Meetings Council (2010–2012); Vice-Chair, MEMS and Nanotechnology Technical Division (2001–2006); and society representative to the US National Committee on Theoretical & Applied Mechanics, National Academy of Science (2015–2018). She has also served in numerous leadership roles at UW-Madison, including Interim Dean and Associate Dean of the Graduate School (2011–2015).

PRESIDENT-ELECT

JOHN LAMBROS

Prof. Lambros received a B.Eng. degree in Aeronautical Engineering from the Imperial College of Science and Technology of the University of London in 1988, an M.S. degree in Aeronautics from Caltech in 1989, and a Ph.D. degree also in Aeronautics from Caltech in 1994. After a year as a postdoctoral researcher, he joined the Mechanical Engineering department of the University of Delaware as an Assistant Professor in 1995 and moved to the Aerospace Engineering department of the University of Illinois in 2000, where he is currently a Professor. He is a Fellow of the American Society of Mechanical Engineers, the Society for Experimental Mechanics, and the American Academy of Mechanics. He has served as an Associate Editor for *Experimental Mechanics* (1999–2005) and the *ASME Journal of Applied Mechanics* (2011–2014). He has also served on the Executive Board of the SEM (2008–2010) and recently completed one term as Associated Head for Graduate Studies in the Aerospace Engineering Department at Illinois (2011–2016). Over his 20-year career he has received numerous honors and awards for both research and teaching achievements including an NSF CAREER Award (1999), the SEM Hetényi (2012) and Frocht (2015) Awards, and the UIUC Campus Award for Excellence in Graduate and Professional Teaching (2015).

VICE-PRESIDENT

DANIEL RIXEN

Daniel Rixen, born in 1967, received his engineering degree in Electromechanics and doctoral degree in Applied Sciences from the University of Liège (Belgium), at the Laboratoire de Techniques Aéronautiques et Spatiales (LTAS). He also holds a master degree in Aerospace Vehicle Design from the College of Aeronautics in Cranfield (UK). After a post-doctoral stay at the University of Colorado (Center for Aerospace Structures), he was appointed in 2000 professor and chair of Engineering Dynamics at the Delft University of Technology (The Netherlands). Since 2012, he leads the chair of Applied Mechanics at the Technical University of Munich (Germany).

His research focuses on the dynamics of mechanical systems and covers the fields of numerical methods, experimental techniques, multiphysics and mechatronics. A significant part of his research involves partitioning problems in order to apply parallel computing, model reduction techniques or experimental substructuring. He regularly collaborates with industry to apply theoretical developments to real-life applications (automotive, aerospace, wind energy, ...). Since 2012, his research field also includes robotics and humanoids.

MEMBERS-AT-LARGE

BONNIE ANTOUN

Dr. Antoun is a Distinguished Member of the Technical Staff in the Mechanics of Materials Department at Sandia National Laboratories in Livermore, California. She received her B.S. in Civil Engineering, M.S. degrees in Mechanical Engineering and Engineering Mechanics, and Ph.D. in Engineering Mechanics from Rensselaer Polytechnic Institute in 1998, after which she joined Sandia. Her research interests are in the mechanical behavior of materials with emphasis on coupled thermal-mechanical experiments and time and temperature dependence.

Bonnie has enjoyed active participation in the Society for Experimental Mechanics (SEM) as a presenter and author, Secretary, Vice-Chair and Chair of the Time Dependent Materials Technical Division, organizer of Track 2 (Challenges in the Mechanics of Time Dependent Materials) for the SEM Annual conference for several years, organizer of Track 5 (Mechanics of Additive and Advanced Manufacturing) for the 2017 and 2018 SEM Annual conferences, and organizer of several SESM conference sessions on metallic materials and extreme environments. She currently serves as an associate editor of SEM's Journal of Experimental Techniques..

JASON BLOUGH

Dr. Jason R. Blough – Professor, Mechanical Engineering – Engineering Mechanics, Dynamic Systems Laboratory at Michigan Technological University (MTU) received his B.S.M.E. (1990) and M.S.M.E. (1991) from MTU and his Ph.D. from the University of Cincinnati (1998). Dr. Blough has over 25 years of experience in experimental dynamics having worked at General Motors, the Keweenaw Research Center, and as an independent consultant. Dr. Blough has been a faculty member at MTU since 2003 and advises the SAE Student Chapter and Clean Snowmobile Team at MTU. Dr. Blough has won numerous awards for both research and advising.

Dr. Blough's research covers a broad range of topics including shock testing, torque converter noise, and snowmobile noise as well as a range of driveline vibration issues and innovative dynamic measurement techniques. Dr. Blough is widely known

for rotating equipment signal processing methods, modal analysis, and general signal processing research as well as teaching. Dr. Blough has taught the Young Engineer's course and given tutorial seminars at IMAC for over 10 years..

RAMAN SINGH

Dr. Raman P. Singh serves as the Associate Dean for Engineering at OSU-Tulsa and as the Head of the School of Materials Science and Engineering in the College of Engineering, Architecture and Technology at Oklahoma State University (OSU). He also serves as the Director of the Helmerich Advanced Technology Research Center on the OSU-Tulsa campus and is appointed as the Helmerich Family Endowed Chair Professor of Engineering.

Raman holds M.S. and Ph.D. degrees in Mechanical Engineering and Applied Mechanics from the University of Rhode Island, and a B.Tech. degree in Mechanical Engineering from the Indian Institute of Technology-Kanpur, India.

Prior to joining OSU in 2006 he was a faculty member at the State University of New York at Stony Brook, and before that a post-doctoral scholar at the California Institute of Technology.

Raman's academic interests are in student mentorship, development, and re-tention with a focus on new pedagogical methods. His research interests are in the mechanics of advanced materials, with an emphasis on the investigation of modern engineered materials and development of new techniques for mechanical characterization at highly localized length scales. His research has been funded by the National Science Foundation, NASA, the Oklahoma Center for the Advancement of Science & Technology, the Oklahoma Transportation Commission, the US Army Research Office, the Department of Energy, and industry. He has authored or co-authored several archival journal publications and conference proceedings and holds two patents. He is an active member of the Society of Experimental Mechanics (SEM) and serves as an Associate Technical Editor for Experimental Mechanics. He is also a member of the Materials Research Society and the American Society of Mechanical Engineers.

MICHAEL TODD

Michael Todd received his B.S.E. (1992), M.S. (1993), and Ph.D. (1996) from Duke University's Department of Mechanical Engineering and Materials Science, where he was an NSF Graduate Research Fellow. In 1996, he began as an A.S.E.E. post-doctoral fellow, then a staff research engineer (1998), and finally Section Head (2000) at the United States Naval Research Laboratory (NRL) in the Fiber Optic Smart Structures Section. In 2003, he joined the Structural Engineering Department at the University of California San Diego, where he currently serves as Professor of Structural Engineering. He has published over 350 papers and proceedings and holds 4 patents in his research areas, which are in applying nonlinear time series techniques to structural health monitoring (SHM) applications, adapting Bayesian inference frames for optimal decision-making in SHM, developing novel ultrasonic interrogation strategies for aerospace structural assessment, optimizing sensor networks for various SHM-rooted performance measures, developing RF-based sensing systems for structural assessment, creating real-time shape reconstruction strategies for highly flexible aerospace and naval structural systems based on limited data sets, creating rapid assessment checks for validation of satellite systems, designing and testing fiber optic measurement systems for many structural applications, and modeling noise propagation in fiber optic measurement systems. Prof. Todd won the 1999 Alan Berman NRL Publication Award, the 2003 and 2004 NRL Patent Award, was a 2004-2005 UC San Diego Hellman Fellow, was an invited speaker at the 2003 National Academy of Engineering Japan-America Frontiers of Engineering Symposium, won the 2005 Structural Health Monitoring Person-of-the-Year Award, presented at Stanford University in September 2005, was named a 2009 Benjamin F. Meaker Fellow at the University of Bristol (UK), and won the 2016 Society of Experimental Mechanics D. J. DeMichele Award for contributions to research and education in experimental mechanics. He serves as the Managing Editor of Structural Health Monitoring: An International Journal.

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