SEM Experimentally Speaking...

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Message from the President

Junlan Wang, SEM President, 2025-2026

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DECEMBER MARKS THE MIDPOINT of my term as SEM President and offers me a natural moment to reflect—both with gratitude for what we have accomplished together and with optimism for what lies ahead. SEM continues to thrive because of the collective energy, dedication, and generosity of its members, volunteers, staff, and leadership teams, and I sincerely thank all of you for your continued engagement and service.

As many of you know, SEM holds two major conferences each year: IMAC, focused on structural dynamics and modal analysis, and the Annual Meeting, spanning the full breadth of experimental mechanics. We held very successful IMAC and Annual Meeting this past year, reflecting the strength and diversity of our technical community.

Looking ahead, I am excited for the IMAC XLIV, to be held January 19–22, 2026, at the Riviera Resort & Spa in Palm Springs, California. This year's IMAC theme—*Digitizing Our Reality: Modeling, Visualizing, Predicting, Interacting*—captures the rapid evolution of our field. With more than four hundred technical presentations and four pre-conference short courses, IMAC 2026 promises to be a vibrant and engaging meeting. I hope to see many of you there.

I also encourage you to mark your calendars for the 2026 SEM Annual Meeting, which will take place June 1–4, 2026, at the Hilton Norfolk The Main in Norfolk, Virginia. As the technical program takes shape, I look forward to continuing our community discussions there.

"...SEM is evolving, innovating, and preparing for a future in which experimental mechanics plays an even more central role in advancing science and engineering."

A strong professional society also depends on a strong publishing ecosystem. All three of our journals—*Experimental Mechanics, Experimental Techniques*, and the *Journal of the Dynamic Behavior of Materials*—continue to perform well. Serving concurrently this year as both SEM President and Editor-in-Chief of Experimental Mechanics has given me a deeper appreciation for the essential role our publications play—not only as engines of scholarship, but also as pillars of SEM's identity and financial health. I encourage you to submit your best work to SEM journals, share them within your professional networks, and propose special issues that showcase emerging and interdisciplinary topics.

Looking forward, SEM is entering a period of purposeful renewal. Several initiatives are

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taking shape to strengthen membership, deepen industry engagement, and position the Society for continued growth. One such effort is the proposed Industry Advisory Committee, led by Dr. Paul Gloeckner, which aims to build deeper and more strategic connections with industry and will be considered at the January Executive Board Meeting. In parallel, I have recently convened an SEM Pathfinder Ad Hoc Committee, led by Dr. Sharlotte Kramer, to identify emerging research areas, technology trends, and partnership opportunities where experimental mechanics can continue to play a leading role. As advances in AI, robotics, advanced manufacturing and sustainable technologies reshape engineering research, SEM has both an opportunity and a responsibility to help guide our community's engagement with these developments. The committee's work will help inform future conference planning and new modes of engagement in these evolving areas.

As we move into the new year, I am encouraged by the momentum building across these efforts. SEM is evolving, innovating, and preparing for a future in which experimental mechanics plays an even more central role in advancing science and engineering. I look forward to continuing this journey with all of you and hope to see many of you next month in Palm Springs at IMAC 2026.

Junlan Wang
SEM President 2025-2026 ■

Message from the Director

AS 2025 DRAWS to a close, I want to extend my sincere thanks to each of you and wish you a pleasant and healthy holiday season. It is because of you, our members, that the Society continues to thrive. Your engagement, ideas and service are the foundation of our conferences, journals, and technical community.

Reflecting on 2025

Once again, member participation and enthusiasm made this year's SEM conferences a success. IMAC and the SEM Annual Conference remain at the heart of our Society, providing opportunities to exchange ideas, strengthen collaborations, and advance the field of experimental mechanics.

IMAC-XLIII, held February 10–13 in Orlando, Florida, was a continuation of our past successes. Themed Lights, Camera, IMAC!, it brought together over 500 attendees to share their research, network and view our exhibitor's wares.

The 2025 SEM Annual Conference, held June 2–5 in Milwaukee, Wisconsin, brought together members from academia, industry, and government laboratories for a robust technical program and a strong exposition. These gatherings continue to demonstrate the value of SEM as a place where high-quality technical work and professional connections come together.

Our publications also continue to serve as a critical benefit of membership. *Experimental Mechanics, Experimental Techniques*, and the *Journal of Dynamic Behavior of Materials* remain strong and efficient, thanks to the dedication of our editors, reviewers, and authors, some of whom are SEM members volunteering their time and expertise. Your contributions ensure that SEM journals remain trusted venues for impactful research.

In addition, SEM's books, proceedings, and related publication efforts continue to grow, reflecting the depth and diversity of work produced within our Technical Divisions.

Looking Ahead to 2026

We are excited for what lies ahead.

IMAC-XLIV, themed *Digitizing Our Reality: Modeling, Visualizing, Predicting, Interacting*, will be held January 19–22, 2026, in Palm Springs, California. The conference will feature a comprehensive technical program, short courses, keynote lectures, and a vibrant exposition, continuing IMAC's tradition as a premier forum for dynamic testing and analysis.

The 2026 SEM Annual Conference will take place June 1–4 in Norfolk, Virginia. We look forward to welcoming members for another engaging week of technical sessions, division activities, and opportunities to connect across disciplines.

Our journals will continue under strong editorial leadership, and we are grateful to our Editors-in-Chief, associate editors, and reviewers for their service to the Society and its members.

Thank You

SEM's success is driven by its members—through presenting papers, reviewing manuscripts, organizing sessions, mentoring students, serving on committees, and supporting one another. I also want to acknowledge SEM staff for their dedication and professionalism in supporting our mission and our community.

"These gatherings continue to demonstrate the value of SEM as a place where high-quality technical work and professional connections come together."

Thank you for being part of SEM and for your continued commitment to advancing experimental mechanics.

Happy Holidays, and best wishes for a successful and rewarding year ahead.

Nuno Lopes
Executive Director ■

2026 SEM Executive Board Nominees

The SEM Nominating Committee has announced the following updates for the 2026–2027 SEM Executive Board. Biographies for each member appear in this article. Once elected, these members will join current Board members whose terms extend to 2027.

PRESIDENT

Dr. Sez Atamturktur Russcher

Dr. Sez Atamturktur Russcher returned to Clemson University in July 2023 as Associate Vice President for the Charleston Innovation Centers (located at the CURI Campus in Charleston, SC) and Professor of Mechanical Engineering. She provides leadership in academic matters and scientific research portfolio of the CURI campus and is responsible for staffing, budgeting, and maintaining the facilities and campus operations. In addition, she serves as a liaison between Clemson's Charleston campus and the main campus in Clemson.

Previously, she was the Harry and Arlene Schell Professor and Department Head of Architectural Engineering in the College of Engineering at Pennsylvania State University. As the department head, she served as the chief academic officer of her unit responsible for all matters related to instruction, finance, human-resource, and facilities management. By revitalizing the curriculum and implementing innovative strategies, she led her unit to achieve dramatic increases in student enrollment, engagement and success, notable gains in research productivity, and sharp hikes in philanthropic giving. Prior to joining Penn State, she served at Clemson University as Associate Vice President for Research and Distinguished Professor and founded the Office of Research Development. Previously, Dr. Russcher was at Los Alamos National Laboratory as an LTV technical staff member. Dr. Russcher holds a master's degree in architectural engineering and a doctorate in civil and environmental engineering from Penn State University.

PRESIDENT-ELECT

Prof. Samantha Daly

Samantha (Sam) Daly is a Professor in the Department of Mechanical Engineering at UCSB. She received her Ph.D. from Caltech in 2007 and subsequently joined the University of Michigan, where she was on the faculty until 2016 prior to her move to UCSB. Her research interests lie at the intersection of the experimental mechanics of materials and data science. Currently, the Daly group is engaged in the development of new methods for multi-scale material characterization and application of machine learning to understand the deformation and failure of advanced structural materials. Prof. Daly is a Fellow of The American Society of Mechanical Engineers (ASME), and currently serves on the Executive Committee of the ASME Applied Mechanics Division and as Vice Chair of the U.S. National Committee of Theoretical and Applied Mechanics.

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VICE-PRESIDENT
Dr. David Epp

David Epp is currently the Nuclear Facilities Sr. Manager in the Radiation and Electrical Sciences Center at Sandia National Laboratories. David is responsible for two nuclear reactor facilities, a non-reactor nuclear facility, and multiple radiological facilities. He has led the transition to a positive safety culture based on positive feedback and workers as the solution at those facilities in the last several years. He is also focused on developing adequate funding models and plans for sustainment of the aging facilities.

He previously led the team of subject matter experts at Sandia supporting NNSA in the initial stages of the Capital Acquisition process for the Combined Radiation Environments for Survivability Testing (CREST) capability to recapitalize the nuclear facilities.

In 2012, David was promoted to manager of the Structural Dynamics and Radiography/NDE department. Since then, he has held several management positions, including a two-year rotation in Washington DC at NNSA, where he supported the Office of Engineering, Stockpile Assessment, and Responsiveness and the Office of Advanced Simulation and Computing. In these positions, his principal roles included managing major environmental test facilities, managing engineering research programs, and developing plans and strategies for NNSA programs.

David's focus in graduate school in mechanical engineering was on dynamics and controls. He joined Sandia in 2002 as a test engineer and progressed to experimental facility owner, principal investigator, and project leader in modal and structural dynamic testing. His career has included applications such as micro-electromechanical systems, satellites, and other Sandia mission areas.

MEMBER-AT-LARGE
Tim Marinone

Timothy Marinone, MSME, is a Senior Test Engineer and Quality Manager at ATA Engineering, Inc., specializing in the qualification and dynamic structural characterization of high-value sys-tems.

With over 12 years of experience, Timothy focuses on the execution and quality assurance of complex test programs. His expertise centers on advanced methodologies, including modal corre-lation for complex space vehicle flight hardware and conducting Ground Vibration Tests (GVT) for airworthiness certification. He is also highly experienced in overseeing and conducting envi-ronmental tests for critical product qualification.

Timothy holds both his BS and MS in Mechanical Engineering from the University of Massachu-setts Lowell. He actively contributes to the engineering community as a leader within the SEM Modal Analysis Technical Division and co-leads the New Young Engineer session offered yearly at IMAC.

MEMBER-AT-LARGE
Prof. Garrett Pataky

Dr. Garrett J. Pataky is an Associate Professor at Clemson University in Clemson, SC, USA. He obtained his Bachelor's degree in Mechanical Engineering from the University of Florida, and his Master's and PhD degrees in Mechanical Engineering from the University of Illinois at Urbana-Champaign. He is current chair of the Fracture and Fatigue technical division and serves as secretary for the Society for Experimental Mechanics Education Foundation. He also serves as an Associate Technical Editor for Experimental Mechanics. His technical and teaching accomplishments are noted by several awards including SEM's J.W. Dally Young Investigator Award and the NSF CAREER Award. His research interests focus on understanding material behavior and fracture and fatigue mechanisms by connecting high resolution multiscale experiments, consisting of microstructural information and grain-level strain fields, to continuum level deformation measurements.

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MEMBER-AT-LARGE
Prof. Ludovic Renson

Ludovic Renson is an Associate Professor in the Department of Mechanical Engineer-ing at Imperial College London, where he leads the Nonlinear Dynamics & Control re-search group. He earned his PhD in Aerospace Engineering from the University of Liège in 2014, before moving to the University of Bristol as a postdoctoral researcher, where he held Marie Skłodowska-Curie and Royal Academy of Engineering research fellow-ships. Ludovic joined Imperial in 2019.

Ludovic's research focuses on nonlinear vibrations in engineered structures, encom-passing the development of computational methods (nonlinear modelling, nonlinear modes, bifurcation analysis, optimisation), nonlinear system identification (physics-guided machine learning), and control-based experimental techniques (experimental continuation). He is part of the Vibration University Technology Centre (VUTC) support-ed by Rolls-Royce, where he leads the development of software for nonlinear vibration analysis in aeroengines.

MEMBER-AT-LARGE
Dr. Caroline Winters

Dr. Caroline Winters is a Principal Member of the Technical Staff at Sandia National Laboratories in Albuquerque, New Mexico, USA. She designs and implements advanced laser and optical diagnostics in extreme environments to measure: simultaneous, full-field surface strains and temperatures, gas-phase temperatures, and quantitative species concentrations. Her work at the intersection of material physics, engineering science, and spectroscopy has been recognized by the Presidential Early Career Award for Scientists and Engineers. Dr. Winters earned her B.S. in Mechanical Engineering from Rose-Hulman Institute of Technology in 2011 and her Ph.D. in Aerospace Engineering from The Ohio State University in 2017. ■

IMAC-XLIV Pre-Conference Courses

We look forward to seeing you at IMAC-XLIV. Enhance your Conference experience by attending one of the following pre-conference courses. Got to www.sem.org/imac to register and make the most of your IMAC experience.

A Short Course in Experimental-Analytical Substructuring

Course Description:
Dynamic substructuring is a powerful approach that enables engineers and researchers to analyze and optimize complex structural systems by breaking them down into manageable components. This methodology is particularly valuable in experimental settings, where structures that are difficult to model can be tested and then connected to analytical models of well-understood components. By leveraging dynamic substructuring techniques, practitioners can effectively address challenges in vibration control, structural integrity, and system response, making it an essential skill in modern engineering practice.

This short course provides a comprehensive exploration of dynamic substructuring principles and applications. We begin with a concise overview of structural dynamics, establishing a solid foundation for understanding the dynamic behavior of structures. Participants will learn how to connect two structures across physical, frequency, and modal domains, providing various tools for practitioners hoping to use these techniques. The course includes practical exercises in MATLAB and Python, allowing participants to apply theoretical concepts to real-world scenarios and gain hands-on experience with data analysis and simulation.

In the second half of the course, we will delve into advanced topics, including decoupling techniques, nonlinear substructuring, and key experimental considerations for validating models. Additionally, we will discuss transfer path analysis, which helps identify how vibrations propagate through structures and influence dynamic responses.

**Sandia National Laboratories is a multimission laboratory managed and operated by National Technology & Engineering Solutions of Sandia, LLC, a wholly owned subsidiary of Honeywell International Inc., for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-NA0003525.*

Instructors: Dan Roettgen, Andreas Linderholt, Ben Moldenhauer, Steven Carter
Date/Time: Saturday, January 17, 2026 | 9:00 a.m. – 6:00 p.m.
Cost: $500 regular/$250 student

Nonlinear Spectral Model Reduction for Equations and Data

Course Description:
A long-standing objective in applied science and engineering has been to reduce complex nonlinear differential equations and data sets to simple, low-dimensional models. The main topic of this mini-course, model reduction to spectral submanifolds (SSMs), introduces a mathematically well-founded solution to this objective.

SSMs are very low-dimensional attracting invariant manifolds tangent to eigenspaces (spectral subspaces) of linearizations of nonlinear systems at steady states. The internal dynamics of SSMs provide simple reduced-order models with which typical system trajectories synchronize exponentially fast. Applications of SSM reduction include accelerated finite-element computations, reduced-order modeling of fluid-structure interactions from experimental data, derivation of equations of motion from videos, prediction of transitions to turbulence in pipe flows, model-predictive control of soft robots and other physical problems. Open-source Matlab and Python codes with growing libraries of worked examples are now available for both equation-driven and data-driven SSM reduction.

This mini-course targets both the more applied and the more theoretical attendees of IMAC. The former group will receive a practical introduction to constructing explicit SSM-based models, whereas the latter group will learn about very recent mathematical advances that further extend the applicability of SSM-reduction..

Instructor: George Haller, Shobhit Jain, Leonardo Bettini
Date/Time: Sunday, January 18, 2026 | 9:00 a.m. – 6:00 p.m.
Cost: $500 regular/$250 student

Tribute to Randy Allemang

(October 26, 1949 – October 5, 2025)

RANDY ALLEMANG WAS A GIANT and he left behind many capable engineers working in this field which is a very big accomplishment. And all those respected him like a dad, a mentor, a friend.

I first met Randy back in the late 1970s at the University of Cincinnati – a Modal Analysis and Digital Signal Processing seminar. He was a light, in the dark, leading the technology forward. And just remember that IMAC hadn't even started yet!

Over the years I have intersected with Randy teaching seminars at IMAC, UC and UML. We had many technical interactions over the years. Maybe the most important was the publishing of the SEM Experimental Structural Dynamics Handbook 1st Edition.

I nominated Randy for the SEM Honorary Award (highest award in the society) two years ago due to his stature in this field. I made this nomination because Randy was a Pillar in our community. And more than a Pillar, he was a Cornerstone of our technology. A true Giant in our field.

And I told Randy we nominated him because he really didn't realize his importance to all of us and the community. He was shocked that he was even considered – a true statement to his demeanor.

From that package, there were some strong keywords that stood tall from the letters of support:

"Backbone of IMAC"
"contributions are immense"
"TITAN of modern modal analysis"
"impact on SEM is exponential"
"research has been fundamental"
"one of the most significant contributors"
"contributions are outstanding and exemplary"
"tireless commitment to this professional community"

Now those are words that clearly set him apart - and the reason the nomination for SEM Honorary Member was submitted.

On the day I heard the news, I just sat back in my chair, stunned, shocked, confused, and sad because a good man was taken from us all. I remember seeing email after email from the people associated with IMAC and SEM with the shock of the news.

Randy will be missed by all in many different ways. The society owes him a great debt of gratitude for his dedication, hard work, motivation, and professional yet friendly attitude towards all those he has touched in his years at SEM. We are all beyond grateful that Randy has crossed our individual paths and made such a significant mark on the IMAC and SEM community. ■

Peter Avitabile
Friend, Colleague, Former President, Society for Experimental Mechanics

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RANDY WAS ONE OF MY PhD advisors, a lifelong friend, a mentor and a steady presence in my life since 1993 when I started my education at the University of Cincinnati. With the passing of Randy Allemang the SEM and Experimental Dynamics communities lost one of our outstanding people, educators, great leaders, and a very dear friend. Randy had a steady presence and was a foundational person in the development of many aspects of our communities. Randy published over 250 papers with over 6500 citations, he co-authored the Structural Dynamics Handbook, and chaired and organized uncounted IMAC sessions, he attended and taught at many ISMA conferences at KUL in Leuven, Belgium.

Randy became President of SEM in 2003, he was the first SEM president from the IMAC community and led the SEM Executive Board through a very difficult financial time for SEM. Working with Tom Proulx they recognized the value of the intellectual property of the SEM journals and negotiated to receive more significant royalties than what was historically received. This realization changed the trajectory of SEM and put them onto their current track of being financially stable. SEM continues to rely on this business model. SEM continues to be very healthy financially, even through COVID, when many professional organizations struggled. Randy's leadership and impact lead to several more SEM President's from the IMAC community. Randy stayed active and involved with SEM until his passing through both IMAC and as a judge for the Michael Sutton Internation Student Paper Competition at the SEM Annual Conference.

In the structural dynamics community Randy was a true academic and leader in every way. Randy was a faculty member at the University of Cincinnati for his entire career, along with Dave Brown, they worked tirelessly for nearly 40 years to promote and develop the experimental dynamics community and IMAC. Randy was the Director of the Structural Dynamics Research Laboratory that led the early development of many of the tools and techniques that built the field of structural dynamics. The mission of the SDRL was to educate

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and support the development of experimental dynamics and in particular modal analysis through supporting and nurturing 100's of students from undergraduate and master's to PhD's. The lab worked to promote and enhance the development of the field of experimental dynamics and modal analysis in every way through supporting and helping to develop IMAC into the prestigious conference that it is, through teaching countless short courses on modal analysis and dynamic measurements. Every major experimental dynamics lab, both university and industry, has been touched by their work. The lab developed many of our foundational tools and methods such as MAC, MIMO FRF measurements, UMPA, and CMIF techniques as well as many others. Early on, the lab worked to develop and understand many signal processing techniques and the use of the FFT.

Randy's impact was truly worldwide through his relationship with KUL and the ISMA Conference in Lueven, Belgium as well as the international trips for courses or consulting around the world including, Japan, South Korea, Germany, Belgium and several others.

In short, Randy was an amazing person, mentor, leader, friend and engineer who was totally committed to supporting SEM and the experimental dynamics community. Randy recognized the value of leading, not by keeping IP restricted but by sharing it for the good of the community which lead to many successes and the acceleration of the development of the field. He never turned someone who wanted to understand something away, he was always willing and excited to

talk about the details to help a fellow dynamicist out. We owe many thanks to Randy for his foresight, commitment, personality, and leadership. He truly was an outstanding person and a very close true friend to many, including myself.

IMAC and SEM will miss his presence and guidance for years to come. Rest in peace Randy, you made a remarkable difference and we thank you for it! ■

Jason R. Blough
Former President, Society for Experimental Mechanics

I FIRST MET RANDY WHEN I was a graduate student attending my first IMAC in Orlando. At the time, he was a giant in the field, and I did not get to know him well until much later when I became active in professional societies. Over the years, I had the privilege of experiencing his mentorship, not as a student in his classroom, but as a junior colleague navigating the complexities of our profession.

One of my earliest memories of working alongside Randy was serving as a presentation judge at an early SAE Clean Snowmobile Challenge. Many of the judges, myself included, were new to the role and tended to overcomplicate the evaluation process. Randy stepped in with his characteristic clarity. He convinced us to trust the rubric, record our ratings, and move forward. He taught us how to break down a daunting day of design presentations into simple, efficient steps. In doing so, he demonstrated a rare leadership quality: the ability to value everyone's input while keeping the process moving toward a goal.

Randy's impact on the Society for Experimental Mechanics (SEM) was profound. As the first SEM President hailing from the IMAC community, he worked to commonize processes between the two conferences and expand the Technical Divisions (TDs) supporting IMAC.

I recall when the Pizza Lunch/TD meetings were first introduced at IMAC. At the time, I was Chair of the IMAC Board, but the role of representing society leadership at these meetings did not come naturally to me. Randy personally took me under his wing. He showed me how to navigate TD meeting rooms, how to ensure the TDs were on track for the following year, and—most importantly—how to represent the values of both SEM and IMAC with confidence.

Soon after I joined Michigan Tech, I became the advisor for our Formula SAE (FSAE) team. I was thrilled to discover that Randy advised the team at the University of Cincinnati. Even though our teams were technically competitors, Randy's spirit was never about the rivalry, it was about the students. He was eager to help me navigate the grueling multi-day competition process, and he never failed to ask, with genuine interest, "How is your team doing?"

Randy Allemang's legacy is often measured by his monumental contributions to Modal Analysis and his decades of academic excellence. However, for those of us who worked beside him, his true impact lay in his ability to make the complex seem simple. Whether he was streamlining a judging rubric or bridging the gap between two professional societies, he led with a quiet, efficient authority that empowered everyone around him.

He was a mentor who didn't just teach us how to be better engineers; he taught us how to be better leaders, better colleagues, and better stewards of our professional community. Randy's presence will be deeply missed at IMAC and beyond, but his influence remains in the simplified processes he built, the societies he strengthened, and the many "junior colleagues" he helped find their way. ■

Jim De Clerck
Former President, Society for Experimental Mechanics

Upcoming Events

2026

IMAC-XLIV | **January 19–22, 2026**
Riviera Resort & Spa Palm Springs
Palm Springs, CA, USA

2026 SEM Annual Conference | **June 1–4, 2026**
Hilton Norfolk The Main
Norfolk, VA, USA

2027

IMAC-XLV | **February 1–4, 2027**
Embassy Suites by Hilton Orlando Lake Buena Vista South
Kissimmee, FL, USA

2027 SEM Annual Conference | **June 7–10, 2027**
Hilton Vancouver Washington
Vancouver, WA, USA