



Experimentally Speaking...

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MESSAGE FROM THE PRESIDENT



Wendy Crone, SEM President, 2018-2019

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Our most recent IMAC held in Orlando, Florida was a success by every measure, including another year of strong attendance. IMAC has a vibrant community with fantastic interactions, both in the conference and the exhibition. It was a phenomenal first year for Mike Mains, IMAC Conference Director. His leadership was instrumental in making it a successful event. The ongoing success of IMAC is due in no small part to the long-term contributions of Al Wicks and Raj Singhal, who served as conference director and co-director for roughly two decades. Of course, we should also recognize the hard work of SEM staff members and the wide array of session organizers and advisory board members behind the scenes.

In addition to excellent session talks, attendees were able to hear the conference keynote address by Dr. Mary Baker of ATA Engineering, whose election to the National Academy of Engineering was announced shortly after IMAC. She spoke on *New Methods for "Predictive Modeling and Engineering Design Decisions" by Removing the Organizational Barriers*. Prof. Zhu Mao of the University of Massachusetts Lowell gave an excellent talk for the SAGE Publishing Young Engineer Lecture on the topic of *Non-Contact Modal Testing and Uncertainty Quantification in Structural Dynamics Identification*.

We had the opportunity to recognize a number of award winners at the IMAC banquet, and I congratulate all of them. I'd like to particularly recognize Ralph Brillhart, Vice President of ATA Engineering, who is the 2019 recipient of the D.J. DeMichele Award in recognition of his exemplary service and support in promoting the science and educational aspects of modal analysis technology. He has been a long-time participant at IMAC and has served the society as an Executive Board member and IMAC Advisory Board member.

The SEM Annual Conference scheduled for June 3–6, 2019 in Reno, Nevada is shaping up nicely with over 500 abstracts submitted to 7 parallel sessions. We have several symposia continuing during the June conference, with Micro- and Nanomechanics in its 20th year, Biological Systems and Materials in its 9th year, and Composites and Multifunctional Materials in its 5th year. In addition to the core tracks that have been long term strengths of the conference, we are continuing to grow the Additive Manufacturing track and are keeping our eye on emerging areas to include in our 2020 SEM Annual Conference, which will be an International Congress year. Please plan to attend the Technical Division luncheon on Tuesday where you can take part in shaping future sessions, tracks and other activities related to your research interests.

In addition to our conferences, another key component of the society is our journals: *Experimental Mechanics*, *Experimental Techniques*, and *Journal of Dynamic Behavior of Materials*. I encourage you to look at the scopes of these journals, particularly that of *Experimental Techniques* which has been recently updated. These journals serve the broader mechanics community and provide our members with excellent venues in which they may publish their research. We are always looking to highlight the excellent work of our SEM members in these journals, so please consider making a submission.

I look forward to seeing you at the SEM Annual Conference in June!

Wendy Crone
SEM President

FROM THE DIRECTORS

With this message, we would like to highlight the outcomes from our IMAC-XXXVII conference.

IMAC was held in sunny Florida at the Rosen Plaza Orlando, January 28-31. The conference was a success in attendance, revenues and energy. Attendance was over 480 with 163 individuals attending for the first time.

The technical program was strong and that made for a great conference. We have our IMAC Advisory Board, our Program Planning Committee, our session organizers and Technical Division chairs to thank for putting together an outstanding program. They clearly hit the mark. Next, we look to the hotel venue as an important variable in the success of a conference. The Rosen Plaza fits our SEM/IMAC technical program, trade show and reception requirements very well and the staff are great to work with. We then look to the dates that we selected three years ago when negotiating the Rosen Plaza contract. We were two weeks earlier this year. This alone could be a key reason, why we were close to 500? There was another difference this year. We had 354 programmed papers but over 480 attendees. Typically, folks come to conferences to present a paper, but for the past two years at IMAC, people came to the conference to listen and learn without the requirement for a paper presentation. This is a very good sign and one that we will watch closely going forward. It is a sign that suggests that SEM/IMAC is staying very true to its mission.

We published eight Volumes in our IMAC Conference Proceedings, which will be available in mid-April. We are clearly doing some things right in terms of our conferences and we want to continue to enable emerging Technical Divisions (TDs) to blossom and grow, while pruning back those emergent TDs that are no longer as relevant as they used to be. To this point, there are three focus groups that are being nurtured into our tracks and programs. They are: Dynamic Environments Testing, Laser Vibrometry Methods & Applications, and Optical Methods & Computer Vision for Structural Dynamics. The new focus groups represent emerging growth areas for IMAC.

The work done by our Technical Program organizers, TD Chairs, Track Chairs, and Session Chairs, coordinated by the tireless work by our SEM staff, is responsible for creating outstanding programs that continue to bring in large numbers of conference attendees. We, however, need to stay

agile and very aware of the emerging areas that we should include in our programs. Our Conference success rests in large part on the success of the Technical Program.

Our three Journals also met either face to face or by phone at IMAC. We take the opportunity at both IMAC and Annual to engage in discussions with Springer, our publisher. We were able to talk through some changes each journal needed that should enable our Editors-in-Chief the ability to enable their five-year plans.

We continued to discuss the lack of interest in IMAC attendees to publish in SEM's journals. The journal that looks to be the best fit for the IMAC community is Experimental Techniques. Therefore, last year, we updated the aims and scope in order to recruit IMAC papers. Paul Reynolds, Editor-in-Chief of ET, spoke at the TD luncheon to alert attendees of the changes and invite papers being given at the conference to be submitted to ET. Please visit the website to learn more. We need to provide our SEM/IMAC members a journal to publish their work. We think we have made significant progress in enabling our IMAC community to publish in SEM.

We are also working on the completion of the SEM Handbook of Structural Mechanics. We have Pete Avitabile and Randy Allemang to thank as our co-editors. They have worked very hard to ensure that each contributor is fully aware of SEM's ownership of the copyright.

Our Annual Conference in Reno, NV is ramping up nicely. We had 500 abstracts submitted, with 428 papers programmed into six tracks with three symposia and two panels over four days that are sure to make Reno a success. Please visit the SEM website to learn more.

SEM has been working closely with the International Digital Image Correlation Society (iDICS) leadership on the 2019 Conference in Portland, OR, October 14-17, 2019. Stay tuned as more information becomes available on the SEM website.

SEM is defined by its ability to remain agile, focused and open to all experimental mechanicians who enjoy and use our conference environment as the go-to place to learn and grow as experts in their field of study. Our relatively small conference size enables our agility...allowing us to keep our finger on the pulse of what is next, create a conference

track to represent an emerging area of interest, and carve out our niche in that new area. A niche that sends the message to our meeting participants that SEM's IMAC, Annual and Fall conferences are the ones to attend. This, I believe is one of the keys to what defines us and gives strength to the meaning of the "friendly society."

SEM launched a new member survey. The survey button is on the homepage of the website. Our last survey was in 2008. We will need your input by participating in the survey. We need to learn what membership in SEM means to you and where we need to improve communication of the value of an SEM membership.

We look forward to your questions or comments so please don't hesitate to email or call.

To those of you that attended IMAC, we want to personally thank you for a successful conference. And we look forward to seeing you in Houston, TX, in 2020. We guarantee another exciting conference as we celebrate IMAC 38.

To those planning on attending the Annual Conference in Reno, NV in June, we look forward to seeing you, engaging with you and we invite you as you register for the conference to either renew your membership, or become a new member of SEM!

Kristin Zimmerman, Executive Director
Nuno Lopes, Managing Director

MEMBER NEWS

MIKE MAINS



Alumnus returns to University of Cincinnati as professor and Bearcat Motorsports mentor. Mike Mains, newly appointed IMAC Conference Director, transitions from industry to academia. Mike credits his involvement with SEM as a link in helping him make the transition. For the full article, please go to <https://www.uc.edu/news/articles/2019/02/n2070926.html>.

WENDY CRONE



SEM President and Karen Thompson Medhi Professor of the College of Engineering at the University of Wisconsin-Madison named to the National Academies' Board on International Scientific Organizations http://sites.nationalacademies.org/PGA/biso/PGA_045431.

TRIBUTE TO LOTHAR GAUL



Lothar Gaul, a wonderful gentleman and highly respected scholar, passed away on 18th of December, 2018. Prof. Dr.-Ing. Gaul headed the Institute of Applied and Experimental Mechanics (former Institute A for Mechanics) in Stuttgart for 20 years until 2013.

After his Ph.D. in 1976 and his habilitation in 1980 both at the University of Hanover, he became a Full Professor in 1981 at the University of Federal Armed Forces Hamburg and headed the Institute of Mechanics until 1993 before he moved to Stuttgart.

Amongst other honors, he was awarded the ICCES Lifetime Achievement Award in 2012 and the ASME Thomas K. Caughey Dynamics Award in 2013 for his contributions in structural dynamics with focus on damping and mechanical joints. In 2015, he received the Helmholtz Medal from the German Acoustic Society (DEGA) for his work in the field of acoustics.

He was a deeply appreciated lecturer and supervisor, and a central figure in German and international engineering sciences. His research interests were broad, working both on industrial problems and fundamental aspects of numerical and experimental techniques. He contributed significantly to developing the boundary element method in vibro-acoustics, making fuzzy logic useful for engineering problems, advancing experimental modal identification and describing damping mechanisms in complex applications, never forgetting his passion for ships. Lothar Gaul has pioneered the idea of fractional calculus applied to structural dynamics. He was the instigator of the research on joint dynamics and, until recently, was passionately contributing to the research efforts in that field.

Lothar Gaul was member of SEM since 1993 and participated in many IMAC conferences. He played an active role in the Technical Committees and was a highly respected colleague, attending with great interest presentations of both young PhD students and established scientists, engaging in enthusiastic discussions to share his immense experience and knowhow. His immense kindness will be missed, but his innovative ideas addressing many scientific challenges in structural dynamics will continue to influence future generations of engineers. We would like to share our sincere sorrow with his wife, Ulrike Else Kat, who regularly accompanied him during his many trips and supported endlessly.

2019 IMAC-XXXVII CONFERENCE AND EXPOSITION ON STRUCTURAL DYNAMICS

JANUARY 28–31, 2019 AT THE ROSEN PLAZA HOTEL, ORLANDO, FLORIDA USA

HIGHLIGHTS AND AWARDS OF IMAC-XXXVII IN ORLANDO, FLORIDA

Newly appointed IMAC Conference Director, Mike Mains, conducted his first Awards luncheon ceremony. Mike presented various awards in recognition of outstanding achievements in structural dynamics and service to SEM/IMAC.

Our sincerest congratulations to all those who received awards and

to the attendees for making this a successful IMAC conference.

With a theme of *Predictive Modeling for Engineering Design and Decision Making*, the conference attracted over 480 attendees and 163 individuals attending for the first time.



Wendy Crone—SEM President, Mary Baker—IMAC Keynote Speaker with Mike Mains—IMAC Conference Director



Wendy Crone—SEM President, Ralph Brillhart—D.J. DeMichele Awardee with Mike Mains—IMAC Conference Director



Wendy Crone—SEM President, Dan Inman, and Zhu Mao—SAGE Publishing Young Engineer Lecture Awardee with Mike Mains—IMAC Conference Director



Kyle Neal—Best Paper Model Validation & Uncertainty Quantification Awardee with Mike Mains—IMAC Conference Director



Javad Baghersad, Benjamin Miller and Joshua Mullins—Best Paper Optical Techniques & Computer Vision Awardees—with Mike Mains—IMAC Conference Director



Wendy Crone—SEM President, Soheil Sadeghi—D.J. DeMichele Scholarship Awardee with Mike Mains—IMAC Conference Director

SUBMIT A NOMINATION

Do you have a colleague you'd like to nominate? The Honors Committee meets each year at the SEM Annual Conference (generally held the first week in June) to determine award recipients for the following year.

Go to sem.org/awards to submit a nomination!

The committee will consider all Nominations received by April 15 of that year. A nomination received is kept for active consideration for three years

IMAC-XXXVII PEOPLE AND EVENTS

Attendees mingling and interacting with exhibitors during receptions and show hours.



IMAC-XXXVII





2019

480+ Number of attendees at IMAC-XXXVII.



UPCOMING EVENTS

2019

2019 SEM ANNUAL

ANNUAL CONFERENCE AND EXPOSITION ON
EXPERIMENTAL AND APPLIED MECHANICS
EXPANDING THE BOUNDARIES OF MECHANICS

JUNE 3-6, 2019
PEPPERMILL RESORT SPA CASINO
Reno, NV USA

IDICS 2019

OCTOBER 14-17, 2019
DOUBLETREE BY HILTON
Portland, OR USA

2020

IMAC-XXXVIII

FEBRUARY 10-13, 2020
HYATT REGENCY HOUSTON
Houston, TX USA

2020 SEM ANNUAL

JUNE 8-11, 2020
ROZEN PLAZA HOTEL
Orlando, FL USA