



Experimentally Speaking...

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Message from the President



Eric Brown, SEM President, 2021-2022

IT IS DEEPLY HUMBLING and exciting to be starting my term as the 2021-2022 President of the Society for Experimental Mechanics. The past two years in which I have been a member of the SEM Executive Board, have been a unique and challenging time for both the society and our members. As a society, we have held our past two SEM Annual Conferences and the intervening IMAC Conference virtually due to COVID-19. It goes without saying, that our always amazing SEM staff rose to this occasion and created a virtual format out of whole cloth, during this challenging and uncertain time. I am pleased to say that through all of this our society has remained healthy and vibrant. During our most recent virtual SEM annual conference in June 2021, it was great to “see” many friends and colleagues and the amazing work you have continued to move forward in your own research and for the society and field of experimental mechanic. In addition to the SEM staff, I would like to deeply thank my colleagues on the SEM Executive Board and every member of SEM whose leadership and contributions have contributed to where the society is today as we start to hopefully look to the future post COVID. While service roles are always invaluable to the society, the pandemic created new opportunities and needs for service and many decisions that needed to be made with more immediate impact and consequence than commonly facing the society’s leadership: I thank you all. I also want to recognize that while we have all likely been touched by COVID in vastly different ways, that every one of us has been touched by the pandemic over the past two years. I know some of you have fought the disease personally or with someone close to you. I know some of you have experienced loss from COVID and I share in your grief. I also know many of you

have experienced joy and growth, personally and professionally through births and weddings and graduations and promotions and moves that have gone without the usual gatherings and celebrations with friends and colleagues. And of course, we have three conferences worth of SEM award recipients who have not had the opportunity to share in those moments of recognition with colleagues face-to-face. I look forward over my term as president of SEM and in the coming years to finding moments with each of you to reflect on and share in those many joys and achievements.

As I start my role as President this year, I am looking at a society that has an incredibly strong history and passionate new leaders to carry us into the future. We need to define the road, we need to pave the road, we need to maintain the road and of course we need to make sure the funds allow us to do so. For the coming year, I am looking forward concentrating on the following:

- Returning the society to our new normal post pandemic
- Executing on our society strategy cultivating the next generation, being an inclusive society serving the needs of a diverse participant base, driving the state-of-the-art in experimental mechanics, and maintain healthy conference participation with a focus on pipeline.
- Expanding excellence of our publishing activities.

Assuming COVID continues to be increasingly under control and we remain on our path of returning to “normal”, my term as

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President will see SEM return to our in person SEM Annual and IMAC conferences. In collaboration between the SEM Executive Board and SEM staff, I look forward to supporting our return to in person conferences, while taking this opportunity to reflect on the aspects of in person conferences that we have missed the most and where appropriate consider aspects of our virtual conferences that are merit incorporating into the future. Past President Daniel Rixen started a process of capturing lessons learned from our virtual meetings that I look forward to incorporating into our future planning. As an international society, I also recognize that as we make plans to return to “normal” and in-person conferences, that our members are still experiencing the pandemic in highly desperate ways facing wide variability in access to vaccine, to differences in national and employer rules, and to varied travel requirements, which we will need to take into account. While taking over the presidency, I would like to thank Daniel Rixen for his presidency over the last year.

Under John Lambros’s leadership during his tenure as SEM President, the Executive Board in collaboration with the SEM Executive Director pursued the development of a draft SEM strategic plan. At the time I had the opportunity to chair the ad hoc committee developing initial proposals for key focus areas for this strategy, which includes valuing and cultivating the next generation of mechanicians through enhanced student and early career engagement; being an inclusive society serving the needs of a diverse participant base including reinvigorating industry participation in SEM Annual and IMAC conferences; driving the state-of-the-art within and beyond the field of mechanics by ensuring mechanisms for timely inclusion of hot new topics; and developing metrics for measuring the health of SEM conference participation with a focus on pipeline. While these key areas were originally developed prior to the pandemic, many of them are even more prescient today than when they were originally proposed. Now as President, I look forward to finalizing the strategy and accelerating its execution.

Publishing has long been at the core of SEM. Throughout the pandemic our SEM journals—Experimental Mechanics, Experimental Techniques, and the Journal of Dynamic Behavior Materials—served an even more important role in capturing and communicating the state of the art in our field. At the same time, the world of academic publishing continues to evolve. I look forward to working with our Editor-in-Chiefs in continuing to strengthen and grow our journals. Each journal has developed strategic plan, which I look forward to working with our Editors in continuing to execute. I encourage you to consider submitting your outstanding work for publication in our journals. As we look at how to best serve our members with our conference proceedings I also look forward to expanding our conferences as a source of outstanding archival peer reviewed manuscripts for our journals. Finally in publishing, I wish to make sure that everyone is aware of the new SEM Handbook Series. This new series will serve as a resource on the state of mechanics crosscutting the work of our SEM Annual Technical Divisions. Through the TDs

we have been soliciting both series editors and authors. For more information or to explore opportunities to contribute yourself as a series editor or author please contact the series co Editors-in-Chief—Wendy Crone, Kristin Zimmerman, and myself—or your TD leadership.

I would like to highlight two moments from the 2021 virtual SEM Annual Conference that were particularly special for me. I had an opportunity to introduce Professor Veronica Eliasson of the Colorado School of Mines as she gave the Springer/Nature Publishing Young Investigator Lecture, which as promised delivered some shockingly fun stuff. Professor Eliasson is greatly deserving of this recognition having made many exciting contributions in the field of dynamic behavior of materials, in which I also work, and making numerous service contribution to SEM since she first started participating as a postdoc. Moreover, the Springer/Nature Publishing Young Investigator Lecture, as an extension of the JSA Young Investigator Lecture, has always been a particularly meaningful award for me as the first person to receive the award from SEM and it being the first major award I received as an independent researcher after graduate school. These earlier career acknowledgments can be particularly meaningful and impactful. I would like to again congratulate Professor Eliasson on her selection for this award and thank Springer/Nature for their continued sponsorship of the award. It was also my great pleasure to introduce Professor Nancy Sottos of the University of Illinois as she gave the Society’s prestigious W.M. Murray Lecture. As my PhD advisor, it was Professor Sottos who introduced me to SEM at the end of the last millennium. In addition to being inspired by Professor Sottos’s outstanding talk on probing reaction-diffusion driven patterns and property gradients in polymers, it was for me a poignant reminder of the growth and progress of our field and all of us in our individual contributions to SEM. This was perhaps made particularly visual as she included bookend pictures of me first in her lab as a graduate student at about the time of my first SEM conference and later in her talk a current picture as I step into the role of SEM President. I would like to again congratulate Professor Sottos on her selection for this award. I would like to use this as an opportunity to encourage all of you to review the many SEM awards and consider nominating your deserving colleagues by the next deadline on April 15, 2022.

I have always known SEM to be the friendly society. To go even further, I strongly agree with many colleagues whom I have heard refer to the SEM community as an extended family. As with family, I strongly believe the heart of SEM lies in our people. Whether you are a lifelong SEM member, a new member of our society, or a perennial participant in our conference, thank you for your engagement and contributions. You are critical to the advancement of the Society through everything you make happen. SEM relies on its members and its staff to make our ideas and plans into the Society’s future. To help make this possible, I make the following appointments for the 2021-2022 year:

Kristin Zimmerman as Secretary of the Society

Nuno Lopes as Managing Director of the Society

Jon Rogers as Treasurer of the Society

Jim De Clerck, President-Elect, as Chair of National Meetings Council

Raman Singh, Vice President, as Chair of Technical Activities Council

Daniel Rixen, Immediate Past President, as Chair of Editorial Council

John Lambros, Past President, as Chair of Administrative Council

Janice Barton, At-Large Board Member as Vice-Chair of Editorial Council

Brandon Dilworth (IMAC), At-Large Board Member as Vice-Chair of Technical Activities Council

Kendra Van Buren (IMAC), At-Large Board Member as Vice-Chair of the Research Committee

Junlan Wang, At-Large Board Member as Vice-Chair of Administrative Council

Jacob Dodson (IMAC), as Vice-Chair of the Applications Committee

David Epp (IMAC), At-Large Board Member as Executive Board Representative to IMAC Advisory Board

Leslie Lamberson, as Vice-Chair of the National Meetings Council

M. Taher Saif, as Vice-Chair of the Education Committee

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

See you in Orlando, FL in February 2022 and Pittsburgh, PA in June 2022 for SEM Annual!

Eric N. Brown
SEM President



**IT'S NOT JUST
MODAL ANYMORE**

THE HUMAN EXPERIENCE
OF SOUND AND VIBRATION

**REGISTRATION
OPENS IN OCTOBER**

IMAC is a conference and exposition focusing on structural dynamics and has evolved to encompass the latest technologies supporting that field. This broad focus on structural dynamics includes topics in modal analysis, nonlinear dynamics, data science, uncertainty quantification, and many other related topics spanning the full range of engineering disciplines. This year we are focusing on "The Human Experience of Sound and Vibration," our theme for IMAC-XL. We invite proposals for paper presentations at IMAC-XL focused on the conference theme as well as on broader topics related to structural dynamics listed in this call.

We also encourage everyone to get involved with the various technical divisions within the Society, submit your paper for a best paper competition, or nominate someone for an award. Your participation and ideas are needed to keep IMAC responsive to the needs of the structural dynamics community. Be sure to visit the web site to learn more about IMAC and our community.

From the Directors

WITH THIS MESSAGE, we would like to share with you a few highlights from our 2021 Annual Virtual Conference held June 14-18, 2021.

During the week of June 7th, SEM's Technical Division (TD) Chairs hosted virtual TD meetings to carry out the work of putting together topics and content for the 2022 Annual Conference scheduled to be in-person in Pittsburgh, Pennsylvania, June 13-16, 2022. The TD meetings were very well attended and again offered a wonderful opportunity to speak with, and "see", our friends and colleagues.

Our Executive Board, Councils and Committees accomplished a great deal of work during the virtual business meetings held June 10th, 17th and 18th. Again, all meetings were very well attended with participants offering great ideas for new and exciting conference elements. We all worked together to build the 2022 technical program and conference activities. We continue to tap the new energy from our Council and Committee leadership and participants, which is critical to growing the membership and to conference success.

A few of the highlights from the conference and meetings included:

- SEMEF to launch a focused effort to build a sustainable process for conducting student symposia...not only in the US, but across the globe. Note, SEMEF will extend free SEM student membership to symposium participants. Check out the SEM website for details <https://sem.org/semef>
- The Membership Committee had extensive discussions about the management of member data, data mining, and access to information. A motion was approved to hire an outside consultant to essentially 'build' an interface to SEM's existing data platforms to effectively mine member data to drive strategic decision making for the Society.

- The Technical Activities Council approved two focus groups, one from IMAC: Dynamic Environments Testing, and one from Annual; Additively Manufactured Materials, to transition into two new Technical Divisions. [Click here](#) to see the new TD and Committee leadership for 2021-2022.

- SEM's journals continue to move forward with their strategic plans. Since the June conference, we learned that Experimental Mechanics and Experimental Techniques have achieved their highest Impact Factors ever (2.96, 1.122 respectively), and JDBM's cite score is holding steady, which should favorably support a strong first IF when released.

- SEM broadly announced its new Handbooks Series with Morgan and Claypool publishers during each of the TD meetings, the TAC, and during the Executive Board meetings. The Editors-in-Chief: Eric Brown, Wendy Crone and Kristin Zimmerman are working with the TD leadership to appoint series editors and author/contributors to the series. Please reach out to your TD leaders or to Eric, Wendy or Kristin if you are interested in more information.

During the virtual meetings the Editors-in-Chief (EIC) of our three journals held their respective Editorial and Advisory Board meetings and continued their efforts to increase communication across the TD's journal editors and boards to grow greater coordination and benefit to the membership. We need to continue to better understand where and why our conference attendees are publishing their work in order to promote increased member submissions to EM, ET and JDBM. Anita Lekhwani, SEM's Springer/Nature publishing representative participated in the meetings. Anita will be working very closely with the EICs to be sure that the publishing processes (author submission, editorial manager system, online first, website content, marketing, transfer desk data tracking, SEM member/author tracking, promotion of review and

feature series articles, and broad editorial board involvement to include Germany, Japan and other parts of Southeast Asia, to properly cover the areas where article submissions are coming from) are efficient and effective. We recognize the significant contributions of our Journal EICs, editors and reviewers and are extremely grateful to their service to the Society, and the experimental mechanics community.

We want to acknowledge the SEM staff for creating a virtual conference platform that enabled our SEM family to stay connected, to share our recent research, to build new ideas for future conferences, for connecting with our exhibitors, and for gathering during social events. Their tireless work in putting together an outstanding virtual IMAC conference in February and for working together, though remotely, and quickly implementing those things that worked well for IMAC 2021 so that they could be applied to Annual 2021. Our goal is to give our SEM community a valuable, learning experience. We invite you to send an email to Jen, Shari, Kathy, Dan and Nicole to acknowledge the work that they do on your behalf and on behalf of SEM. Thank You!!

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

For those who typically attend IMAC, we will see you in February 2022 for our in-person IMAC-XL conference at the Rosen Plaza in Orlando, Florida. For those who typically attend Annual, we will see you next June in Pittsburgh, Pennsylvania.

Be safe and well. ■

Kristin Zimmerman, Executive Director
Nuno Lopes, Managing Director

SEM Journal Update

BELOW ARE EXCERPTS from an email that SEM received in June from Anita Lekhwani, SEM's representative from Springer/Nature. We wanted to share this excellent news more broadly with our members.

Congratulations go to our past and present journal EICs, our journal editors and our vast portfolio of journal reviewers. Our journal accomplishments are because of you!

Anita's email to SEM:

The 2020 Impact Factors (IFs) were released today, and this remains one of the highlights of the year. I am delighted to share that the SEM portfolio saw an increase in Impact Factors from 2019 to 2020 across the board! Below, please find a table containing a comparison of 2019 and 2020 Impact Factors and CiteScores.

Behind every new IF lies a story: of a research discipline growing or shrinking; of an editorial team engaging actively with their community; or of authors, editors and peer reviewers working together to ensure that the published research is robust and accurate. IF is an imperfect measure of quality, and while we are a signatory to DORA, IF does tell a reader something about what to expect in a journal. We also know that editors and authors still care very deeply about it and use it as a way of comparing journals amidst the broader publishing landscape. The results for SEM are stunning thanks to the hard work of the editors-in-chief and editorial boards associated with

the journals along with their support teams at SEM.

This year Clarivate has slightly changed how they calculate IF, and this has had a positive effect on some of the IF scores. They have adjusted the 'cut off' point for inclusion of content, from the issue date to the date of online publication. (For most journals that publish issues, the online date is typically ahead of the issue date.) This applies to articles published after January 1, 2020, so will affect only the numerator (the number of citations recorded) this year because the number of articles from which citations are collected will be higher than it would otherwise have been. This could lead to a higher number of citations, which in turn will push some IFs up, and next year both the numerator and the denominator (the number of articles published) will be affected. The number of citations in 2020 was also likely affected by the spike in papers published across all publishers due to the pandemic. (I have attached Clarivate's detailed methodology for your reference.) CiteScores across the portfolio also increased while JDBM was flat. Now that it is included in the ESCI, it is great to see citations accumulating in the Web of Science. As you know, CiteScores have slightly different criteria including the counting of all articles in a journal and a longer (three-year) counting period. The Publisher's report will be released next month to provide greater clarity on these



metrics, and I will share them with you as soon as they have been prepared.

These are tremendous results, and they don't simply happen. In our case, they are due to the years of hard work by the SEM and SN teams to attract, improve, and showcase the research we publish by way of engaging authors and peer reviewers, developing the journals' content, and making them attractive places to submit. It's very much a team effort, and I would like to extend an enormous and heartfelt congratulations and thank you to the SEM staff that has contributed to these fantastic Impact Factor results. Thank you for your passion, dedication, and unrelenting quest for quality throughout the SEM journal portfolio, and we hope to continue supporting it with our own in the years to come.

With best wishes,
Anita

Journal Full Title	ISSN	Total Cites	2020 2-YR Journal Impact Factor	2019 2-YR IF	5 Year Impact Factor	2019 5-YR IF	2020 Cite Score	2019 Cite Score
EXPERIMENTAL MECHANICS	0014-4851	6436	2.808	2.496	2.96	2.655	5	4.9
EXPERIMENTAL TECHNIQUES	0732-8818	1077	1.167	1.058	1.122	1.022	2.3	2.1
JOURNAL OF DYNAMIC BEHAVIOR OF MATERIALS	2199-7446	151	n/a	n/a	n/a	n/a	3.1	3.2

2021 SEM Awards

THE SOCIETY FOR EXPERIMENTAL MECHANICS, INC., was founded in 1943 as a nonprofit scientific and educational organization. Since its inception, SEM has made a special effort to live up to its goal to be the "friendly society." The members of SEM encompass a unique group of experimentalists, development engineers, design engineers, test engineers and technicians, students, and research and development scientists from industry and educational institutions.

Since its organization in 1943, SEM has relied heavily upon volunteer leadership and the professional expertise of its members. In the early 1950's, the Executive Board began to explore means to formally

recognize worthy individual contributions to the Society. Over the years several awards were established. Prior to 1967, the selection of award recipients was the sole responsibility of the Executive Board. In 1967, an Honors Committee was established and now functions as a screening committee for the majority of SEM awards with final approval resting with the Executive Board.

The Honors Committee seeks nominees from the general membership (except where noted). For those with internet access, the simplest procedure is to submit the online Nomination Form that can be found on the [Society Web site](#).

25 and 50 Year Members of SEM

The Society for Experimental Mechanics gratefully acknowledges the following individuals who have been members of the Society for 25 and 50 consecutive years. Each will receive a special certificate commemorating their dedicated support to SEM over the past quarter or half century.

Gold (50 Year) SEM Members

Sidney Green
Shafik Iskander
Richard Rhorer
R. Tang
Halei Vasconcelos

Silver (25 Year) SEM Members

James Akers
Thomas Drinan
David Dillard
Fabrice Pierron

Fellow Awards

In 1975, the Honors Committee recommended a bylaws change which enabled a Fellow grade of membership to be established. The recommendation, which was approved, changed Article IV, Section 3 to read: "A Fellow shall be an individual who has distinguished himself/herself in some field in which the Society has interest, who has been a member of the Society for at least ten consecutive years, and whose contributions to the Society and the technical community have justified this honor. The number and manner of election of Fellows shall be as specified by the Executive Committee."

The Fellows Committee has prepared a nomination form which details all pertinent information required to have someone's name placed for nomination. A copy of the form can be found on the [Society website](#).

2021 Recipients

Douglas Adams
Francois Hild
Yasushi Miyano
Michael Prime

In recognition of distinguished contributions to the field of experimental mechanics, and service to that field through the Society.



Dr. Doug Adams is the Daniel F. Flowers Professor of Engineering at Vanderbilt University. He has pioneered the development of nonlinear system identification approaches in experimental structural dynamics to realize state estimation and health monitoring technology for application in the energy, defense, and manufacturing sectors. He has advised 59 graduate students, written 270 papers, and received 10 patents. He authored a textbook on structural health monitoring as well as 5 book chapters including one on nonlinear experimental dynamics for the upcoming SEM Experimental Structural Dynamics Handbook. He has organized sessions and delivered talks at the International Modal Analysis Conference for 27 years.



François Hild is a research professor at the Laboratoire de Mécanique et Technologie (ENS Paris-Saclay). He graduated from Ecole Normale Supérieure Paris-Saclay in 1989, received his PhD in Mechanics of Materials from the Pierre & Marie Curie (Paris 6) University in 1992, and from the University of California at Santa-Barbara in 1995. His research focuses on the identification and validation of constitutive models with full-field measurements at different scales and various modalities. He was awarded the CNRS 2017 silver medal for all his work. He serves as Associate Editor for the Experimental Mechanics journal since 2008.



Yasushi Miyano became a professor of Kanazawa Institute of Technology (KIT) in Japan in 1977. He received Ph.D. degree from Keio University in 1964. He had worked in Hitachi Ltd until 1977 and moved to KIT. He was the director of Materials System Research Laboratory of KIT from 1981 to 2020. He has been a member of SEM from 1982 and belonging to Time Dependent Materials Division. His research is focused on the prediction methodology for the long-term fatigue life of polymer composites and structures based on the time-temperature superposition principle for the viscoelasticity of polymer matrix. For 50 years, he has been publishing the research works for academic journals.



Michael Prime received a Ph.D. in Mechanical Engineering from U.C. Berkeley in 1994 and has worked at Los Alamos National Laboratory (LANL) for 26 years. He is known worldwide for the invention of the contour method for residual stress measurement, which is used extensively in industry and is the focus of startup companies in California and the UK. Mike is also known for some important early contributions on structural health monitoring and recent advances in modeling and measurement of material behavior in extreme conditions. Mike was named a Fellow at LANL in 2019, a rare honor for an engineer.

William M. Murray Lecture

The William M. Murray Lecture was initiated in 1952 as the Society's prestige lecture. It is presented each year, at the SEM Annual Conference, as a continuing honor to Dr. William MacGregor Murray, first president and long-time secretary-treasurer, for his many contributions to SEM.

2021 Recipient

Nancy Sottos

For distinguished contributions to the mechanics of complex heterogeneous materials, autonomic materials systems and broad leadership in the field.



Nancy Sottos is the Donald B. Willet Professor of Engineering in the Department of Materials Science and Engineering at the University of Illinois Urbana-Champaign. She is also a co-chair of the Molecular and Electronic Nanostructures Research Theme at the Beckman Institute. Sottos started her career at Illinois in 1991 after earning a Ph.D. in mechanical engineering from the University of Delaware.

Springer/Nature Publishing Young Investigator Lecture

Sponsored by Springer/Nature Publishing

The Society has a number of awards which, by their nature, are intended to recognize senior members of the Society for their work in Experimental Mechanics. However, it is also important that the Society recognize members early in their career whose work demonstrates considerable potential in the field of Experimental Mechanics. That is the focus of this new lecture.

As with all SEM awards, we strongly solicit nominations from the members of the Society for this lecture. The nominee should be recognized for the potential of work early in his/her career, and should be a member of the Society. On the academic side, this could be someone at the Assistant or Associate Professor level. On the industrial or Government Lab side, it could be someone up to 10 years after hire. These are only guidelines and not absolute rules.

2021 Recipient

Veronica Eliasson

In recognition of outstanding mid-career contributions to experimental mechanics.



Veronica Eliasson is an Associate Professor in the Mechanical Engineering Department at Colorado School of Mines, with a joint appointment in the Mining Engineering Department. Prof. Eliasson obtained an MSc Degree in Vehicle Engineering and a PhD in Mechanics from the Royal Institute of Technology, Stockholm, Sweden. Prof. Eliasson's research interests are multi-disciplinary and range from shock wave dynamics to fracture mechanics — all explored relying on a strong foundation of experimental mechanics coupled with different types of ultra high-speed photography techniques.

Sage Publishing Young Engineer Lecture

Sponsored by Sage Publications Limited

The Society has a number of awards which, by their nature, are intended to recognize senior members of the Society for their work in Experimental Mechanics. However, it is also important that the Society recognize members early in their career whose work demonstrates considerable potential in the field of Experimental Mechanics. This is the focus of this new lecture given at IMAC.

As with all SEM awards, we strongly solicit nominations from the members of the Society for this lecture. The nominee should be recognized for the potential of work early in his/her career, and should be a member of the Society. On the academic side, this could be someone at the Assistant or Associate Professor level. On the industrial or Government Lab side, it could be someone up to 10 years after hire. These are only guidelines and not absolute rules.

2021 Recipient

Luke Martin

In recognition of outstanding early-career contributions to experimental mechanics.



Luke A. Martin earned a Ph.D. in Mechanical Engineering from Virginia Polytechnic Institute and State University in 2011. He is currently employed with the Naval Surface Warfare Center, Dahlgren Division as a Technical Expert. Luke's interest in vibration measurements and analysis began when he used vibration measurements and Fourier analysis for predictive maintenance of rotating equipment during an undergraduate internship. Upon graduation from West Virginia University Institute of Technology, he pursued graduate studies at Virginia Polytechnic Institute earning a Master of Science in 2004. His research and professional interest has spanned from modeling viscoelastic materials undergoing shock loading to pioneering the Navy's first multiple degree of freedom random vibration test for a major weapon system. He has authored over twenty-two significant publications or briefings.

2021 Recipient

Jennifer Jordan

In recognition of contributions to the shock and mechanical characterization of polymers and energetics.



Jennifer L. Jordan is the Technical Deputy in LANL's UK Program Office. Prior to this position, she was Group Leader for Shock and Detonation Physics at Los Alamos National Laboratory. She has also served as the Dynamic Materials and Interactions Program Officer at the Air Force Office of Scientific Research and the Lead for the Munitions Energetic Materials Core Technical Competency, Munitions Directorate, Air Force Research Laboratory. Jennifer's research has focused on the high strain rate response of polymers and composites. Within SEM, she is the Editor-in-Chief for the Journal of Dynamic Behavior of Materials, an active member of the Dynamic Behavior of Materials Technical Division and the Research Committee. Jennifer is a recipient of the A.J. Durelli Award (2018) and the G.A. Brewer Award (2021). She received her BS, MS, and PhD in Materials Science and Engineering from Georgia Tech.

G.A. Brewer Award

In memory of Given A. Brewer, Teledyne Engineering Services, located in Waltham, Massachusetts, established the Brewer Teledyne Award in 1989 (now called the G.A. Brewer Award). Mr. Brewer created Brewer Engineering Laboratories. As its director, Mr. Brewer carried out over 700 projects using experimental and theoretical techniques. His business was later sold to Teledyne, and he became a consultant to the company. Mr. Brewer was a valued member of SEM and was active in both leadership and technical activities.

The annual award will consist of an award plaque in the recipient's name. The criteria for the award stipulates that it be given to "an outstanding practicing experimentalist" chosen by the Honors Committee. The award is intended as recognition of skill in the practical application of experimental mechanics techniques. A person whose primary affiliation is with a university would be eligible if substantial amounts of consulting work involved hands-on experimental analysis.

The first Brewer-Teledyne award was presented in June, 1989, to Mrs. Heidi Brewer in her husband's memory.

James W. Dally Young Investigator Award

James W. Dally, P.E., Ph.D., has been internationally recognized for seminal contributions to the development of experimental methods for studying dynamic fracture mechanics and stress wave propagation problems; for academic leadership; and for developing innovative teaching materials and textbooks for undergraduate and graduate education.

Since his retirement from active teaching and research at the University of Maryland, College Park, Jim serves as an engineering consultant for the Defense Threat Reduction Agency and manages College House Enterprises, LLC (Knoxville, TN), a niche publisher of engineering textbooks.

Previously, Jim taught at Cornell University (Ithaca, NY); the Illinois Institute of Technology, Chicago; and the U.S. Air Force Academy (Colorado Springs, CO); and he served as dean of engineering at the University of Rhode Island, Kingston. He also held positions at the Mesta Machine Co. (Homestead, PA); IIT Research Institute, Chicago; and IBM (Manassas, VA).

An ASME Fellow, Jim is also a Fellow and Past President of the Society for Experimental Mechanics (SEM) and the American Academy of Mechanics, and a member of American Society for Engineering Education and the National Defense Industrial Association.

Among his distinguished honors, he was elected to the National Academy of Engineering (1984); was selected by his peers to receive the Senior Faculty Outstanding Teaching Award in the College of Engineering (1991) and the Distinguished Scholar Teacher Award (1993) at the University of Maryland. He was a member of

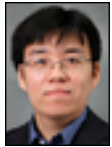
the University of Maryland team that received the Outstanding Educator Award sponsored by the Boeing Co. (1996), and more recently, he received an Outstanding Alumni Award (2009) from the Illinois Institute of Technology's mechanical engineering department, the 2012 Daniel C. Drucker Medal from ASME and the Archie Higdon Distinguished Educator Award from the Mechanics Division of ASEE in 2013.

Jim earned his bachelor's and master's degrees in mechanical engineering from Carnegie Institute of Technology, Pittsburgh, in 1951 and 1953, respectively. He earned his Ph.D. in mechanics from the Illinois Institute of Technology in 1958.

2021 Recipient

Kejie Zhao

For seminal contributions to the forefront of electro-chemo-mechanics using well integrated in-situ experimental and theoretical mechanics.



Dr. Kejie Zhao is an associate professor of mechanical engineering at Purdue University. He received his Ph.D. degree in Engineering Science in 2012 from Harvard, and obtained his bachelor's and master's degrees from Xi'an Jiaotong University in 2005 and 2008, respectively. He worked as a postdoctoral associate at MIT in 2012-2014. His group focuses on the chemomechanics of electrochemically active materials using experimentation and multi-scale modeling approaches. He is a recipient of the EML Young Investigator Award, 3M Non-tenured Faculty Award, EnSM Young Scientist Award, NSF CAREER Award for his research and multiple teaching awards at Purdue University.

Dominick J. DeMichele Award

This award, established in 1990 in honor of Dominick J. DeMichele, recognizes an individual who has demonstrated "exemplary service and support of promoting the science and educational aspects of modal analysis technology." This award is presented at the annual IMAC Conference & Exposition on Structural Dynamics.

Dominick J. DeMichele (1916-2000) was the past director of the International Modal Analysis Conference (IMAC), having directed 13 annual IMACs, and was founder and president of Instrumentation and Measurement Technology Services. He held a B.S.M.E. from Rensselaer and was also a graduate of the New York Diesel Institute. He joined the mechanical engineering department of the general engineering laboratory at the General Electric Company, Schenectady, NY, in 1940 as a project engineer and retired from GE in 1979. He received the coveted Charles E. Coffin Award, the company's highest award to its employees, for his contribution in the field of solid mechanics (vibration, shock, stress-strain, and acoustics). While at GE, Mr. DeMichele was awarded four patents: High Temperature Strain Gages; Strain Gages; Method for Making Resistance Strain Gages; and Strain Gage Pressure Transducer.

Mr. DeMichele was a 42-year member and a Fellow of SEM. He was also recognized by the Society as an Honorary Member. One of his last positions with the Society was Chair of the Fellows Committee. He was chair of two national meetings, a member of the Executive Board, a member of the Technical Papers Committee, chair of the national technical session on high temperature strain gages, and organizer and first chairman of the New York-Hudson Section of the Society. He was a senior member of the Instrument Society of America and of the American Society for Nondestructive Testing. He served as a member of the National Academy of Sciences Instrumentation Committee for the American Association of Highway Officials Road Test. Mr. DeMichele was appointed a member of the National Commission on Technical Education of the National Science Foundation. He had published numerous technical papers and in-house reports covering the development of high-temperature strain gages, special projects in strain gage applications, vibration, acoustics and other measurement programs.

2021 Recipient

Jason Blough

In recognition of the quality and breadth of his technical contributions, his outstanding commitment to education and his continuous support to the IMAC community.



Dr. Jason Blough received his BSME and MSME from Michigan Technological University. Dr. Blough attended the University of Cincinnati to obtain his Ph.D. in structural dynamics. Dr. Blough's Ph.D. was on rotating machinery signal processing methods. Dr. Blough is currently a Professor in the Mechanical Engineering-Engineering Mechanics Department at Michigan Technological University. Dr. Blough has been active in SEM and IMAC for over 20 years publishing papers, serving on the SEM Executive Board, and continues to be an instructor in the "Young Engineers" program at IMAC. Dr. Blough's research is industry funded, with support from the auto and powersports industries, and defense. Dr. Blough has graduated over 40 graduate students and published over 135 papers. Dr. Blough has taught over 40 short courses to industry on various NVH topics.

A.J. Durelli Award

This award was established in 2004 in honor of A.J. Durelli. Mr. Durelli was one of the most outstanding experimental stress analysts in the world during the second half of the twentieth century. Known primarily for his work in brittle lacquer techniques, photoelasticity, and moiré methods, throughout his career, Dr. Durelli consistently sought out new methods to solve problems rather than to solve new problems with existing methods. He often challenged his students and colleagues to view the world from a different perspective, and bestowed on our Society some of its greatest gifts—productive, caring, and competent people.

The award in question is designed to recognize a relatively young individual for distinguished, innovative work in experimental mechanics; one of the qualities that A.J. recognized and instilled so well in others. The individual should be a young professional who has introduced, or helped to introduce, an innovative approach and/or method into the field of experimental mechanics. The individual's contribution shall be distinguished in that it departs from the norm and/or challenges the existing train of thought in the Society. The recipient should be a member of SEM, but need not have held any prior leadership position in the Society.

The Society is actively soliciting nominations for this award.

2021 Recipient

Yong Zhu

For the development and application of innovative methods to study the interfacial mechanics of nanomaterials on polymers.



Yong Zhu is a Professor and University Faculty Scholar in the Department of Mechanical and Aerospace Engineering, with joint appointments in the Departments of Materials Science and Engineering and Biomedical Engineering, at North Carolina State University. He received his PhD at Northwestern University in 2005 and did his postdoc at the University of Texas at Austin before joining NC State in 2007. His group conducts research at the intersection of solid mechanics and micro/nano-technology, including nanomechanics, interfacial mechanics, microelectromechanical systems, and nanomaterial-enabled stretchable electronics. His work has been recognized with a number of awards such as ASME/Pi Tau Sigma Gustus L. Larson Memorial Award (2019), ASME Sia Nemat-Nasser Early Career Award (2015), and SEM JSA Young Investigator Lecture Award (2013). He is currently an Associate Editor for Journal of Applied Mechanics and Experimental Mechanics.

M.M. Frocht Award

Dr. Max Mark Frocht was honored for his accomplishments by the 1967 initiation of the M.M. Frocht Award. The award recognizes "outstanding achievement as an educator in the field of experimental mechanics," and is presented annually to the "Educator of the Year." Dr. Frocht's work involved research in photoelasticity, stress concentration factors, and 3-D techniques. His two-volume treatise on photoelasticity is considered a classic and has been translated into Russian, Spanish, and Chinese. Its publication was credited with revitalizing photoelastic research in England and the laboratories of the eminent photoelastician, Dr. Filon.

Dr. Frocht was a student of Steven Timoshenko and many of his own students have made important contributions to the field of experimental mechanics. He has presented papers and lectures on photoelasticity and experimental stress analysis in all parts of the world.

2021 Recipient

Michael Mello

In recognition of outstanding achievements as an educator in the field of experimental mechanics.



Michael Mello is a Teaching Professor in the Department of Mechanical and Civil Engineering (MCE) at Caltech. He earned a B.S. degree in physics from Bridgewater State College, an M.S. degree in optics from the University of Rochester, and a Ph.D. from Caltech (GALCIT). Mike began his career as a research engineer in the Brown University plate impact lab from 1988 – 1997. He later worked at Intel from 1997 – 2006 as an electronics packaging engineer, where he supported product certification and metrology development and managed the company's premier mechanical testing laboratory. Mike is also currently an Associate Technical Editor of Experimental Mechanics, a post he has held since 2013.

D.R.Harting Award

(The Experimental Techniques "Outstanding Paper" Award)

Darrell R. Harting, a 37-year SEM member and one of Experimental Techniques founders, passed away in 1996. In recognition of his considerable contributions to SEM as a member, as its President in 1977-1978, as Fellow in 1983, and as an early proponent of Experimental Techniques, the SEM Honors Committee recommended, and the Executive Board approved, that the ET Outstanding Paper Award be renamed the D.R. Harting Award.

This award was formally established in 1987 by the Executive Board. However, the award was first presented in 1981, when Experimental Techniques started publication on a regular basis. The award, consisting of a plaque, is presented at SEM's Annual Conference. Candidates are nominated by ET reviewers who cite papers they consider worthy of "Outstanding Paper" status. In January of the year, the ET Senior Technical Editor prepares a list of nominated papers. Subsequently, all pertinent information is submitted to the Honors Committee for the final selection.

2021 Recipients

Fabio Lo Savio

Guido La Rosa

Marco Bonfanti

Damiano Alizzio

Ernesto Rapisarda

Eugenio Pedullà

For the outstanding paper entitled "Novel Cyclic Fatigue Testing Machine for Endodontic Files" published in Experimental Techniques 44-5, 649–665 (2020).



Prof. Fabio Lo Savio graduated in Civil Engineering at the University of Catania in 1991. He is currently Researcher and Adjunct Professor in "Mechanical and Thermal Measurements" and "Non-Destructive Evaluation of Mechanical Elements" at the University of Catania. His research is focused on the characterization of composite and biocompatible materials using traditional and customized testing machines. He is author of numerous international and national publications on devices dedicated to the testing of endodontic instruments in nickel-titanium.



Guido La Rosa is a full Professor of Mechanical Design at DICAR- University of Catania (Italy) since 2000. Manager of the Mechanical Laboratory. Since the 80s, he taught many courses of Machine Design, Stress Analysis, Mechanical Behaviour of Materials, Biomechanics, and Integrated Product Design.

Author of more than 250 papers, among journal and proceedings, on experimental mechanics (in particular thermography and fatigue), machine design, ecodesign and biomechanics, one international book and 8 National Patents.

His research interests focus on the analysis and design of mechanical component and systems, as well as in material testing, by traditional and innovative methodologies in dynamics, biomechanics, and eco-design.



Marco Bonfanti graduated in "Mechanical Engineering" and PhD in "Structural Mechanics", and is currently engaged in research activity at the D.I.E.E.I. (Department of Electrical, Electronic and Computer Engineering) of the University of Catania. His main research activities concern "Mechanical and Thermal Measurements", applied to the study of Polymers/Elastomers and Endodontic Instruments and aimed to the mechanical characterization. He provides didactic support in "Mechanical and Thermal Measurements", "Non-Destructive Tests" and "Machines Design".



Damiano Alizzio graduated in "Mechanical Engineering" at University of Catania, and is currently involving PhD course in "Engineering and Chemistry of Materials and Construction" at University of Messina. His main research activities concern realization of innovative strategies for

Mechanical and Thermal Measurements, Non-Destructive Tests and Machines Design, especially in automated tests implementation and numerical tests simulation. Main applications of his research are focused on dedicated systems for energy recovery from renewable sources, design and performances investigation on trabecular structures and mechanical characterization of smart materials for Endodontics.



Prof. Ernesto Rapisarda was graduated in Medicine and Surgery in 1977, specialized in Dentistry and Dental Prosthetics in 1980 at the University of Catania. He is retired Full Professor in the Odontostomatological Diseases sector at the University of Catania. Former director of the Department of General Surgery and Medical Surgical Specialties and former president of the Degree Course in Dentistry and Dental Prosthetics. Prof. Rapisarda is author of international and national publications on nickel-titanium instruments and endodontics. Moreover, he acts as private practitioner in Catania practicing especially Endodontics and Operative Dentistry.



Dr. Eugenio Pedullà was graduated with honors in Dentistry at the University of Catania in 2003, he obtained his Ph.D. at the same university in 2007 and Master's Degree at the University "La Sapienza" of Rome in 2008. He is currently Researcher and Professor in Dentistry at the University of Catania where he is professor of Conservative dentistry and Endodontics. Dr. Pedullà is author of international and national publications on nickel-titanium instruments and endodontics. Italian Original Research in 2014. Moreover, Dr. Pedullà acts as private practitioner in Catania practicing especially Endodontics and Operative Dentistry.

Author of more than 250 papers, among journal and proceedings, on experimental mechanics (in particular thermography and fatigue), machine design, ecodesign and biomechanics, one international book and 8 National Patents.

His research interests focus on the analysis and design of mechanical component and systems, as well as in material testing, by traditional and innovative methodologies in dynamics, biomechanics, and eco-design.

M. Hetényi Award

(The Experimental Mechanics "Outstanding Paper" Award)

This award was established in 1967 for the best research paper published in Experimental Mechanics. It was named in honor of Dr. Miklos Hetényi. A brief biography and an abridged list of Dr. Hetényi's professional accomplishments follow:

Education: University of Technical Sciences, Budapest, Hungary, 1924-30; Diploma in Civil Engineering, 1931; Graduate work with H.M. Westergaard, University of Illinois, 1934-35 and with S.P. Timoshenko, University of Michigan, 1935-36; Ph.D. in Engineering Mechanics, 1936.

Publications: Author of over 70 scientific papers on analytical and experimental mechanics and on the theory of structures; Beams on Elastic Foundations, University of Michigan, 1946; Coeditor of Proceedings of the Tenth International Congress on Applied Mechanics, Springer Ed., 1969.

Contributions to SEM: 1 of 4 founders, 1943; Vice President, 1943-44; 2nd President, 1944-45; Editor, Handbook of Experimental Stress Analysis, 1950.

General Contributions: Development and Application of Three-Dimensional Photoelasticity; Development of a "Reduction Method" for the Analysis of Continuous Frames; Development of a "Method of Initial Parameters" for the Analysis of beams, beam-grillages, and beams in elastic foundations; Solution for Axi-Symmetrical Deformation of Spherical Shells and Related Structures.

2021 Recipients

Sivareddy Dondeti

Hareesh V. Tippur

For the outstanding paper entitled "A Comparative Study of Dynamic Fracture of Soda-Lime Glass Using Photoelasticity, Digital Image Correlation and Digital Gradient Sensing Techniques" published in Experimental Mechanics 60, 217-233 (2020)



Sivareddy Dondeti is currently a mechanical engineering PhD student and a Woltosz Fellowship recipient at Auburn University, Alabama. Previously, he has worked as a stress analyst at General Electric, United Technologies Corporation (UTC) Aerospace Systems, and Bombardier Aerospace. He received his master's and bachelor's degrees in mechanical engineering from Indian Institute of Technology - Madras and JNTU - Hyderabad, India, respectively. His current research interests include dynamic fracture mechanics of brittle materials and experimental mechanics with an emphasis on vision-based techniques such as DIC and DGS. His works have appeared in peer reviewed journals such as Experimental Mechanics, International Journal of Solids and Structures, Additive Manufacturing.



Hareesh V. Tippur is the McWane Endowed Chair Professor and Associate Chair of Mechanical Engineering at Auburn University, Alabama. He has worked extensively in the areas of fracture and failure mechanics of solids with an emphasis on high-strain rate response of materials. He is credited with the development of several quantitative visualization tools including Coherent Gradient Sensing (CGS), infrared rough surface interferometry, digital image correlation with ultrahigh-speed photography and more recently the Digital Gradient Sensing (DGS). To date his research has resulted

in over 250 publications in archival journals, book chapters and conference proceedings. Several federal agencies including NSF, DOD, NASA and FAA have sponsored his research over the years. He has received awards and recognitions from various professional societies including the Hetényi and Tatnall Awards from SEM, Beer-Johnston Mechanics Educator Award from ASEE, Fellow status in ASME and SEM, Orr Award from ASME, Fylde Electronics Prize from the British Society for Strain Measurement, A.S. Kobayashi Award from ICCES. He has served as the editor-in-chief of Experimental Mechanics journal between 2010-2015 and was a member of SEM executive board during 2015-2017. Currently he serves on the executive committee of the Materials Division of ASME.

R.E. Peterson Award

(The Journal of Dynamic Behavior of Materials "Outstanding Paper" Award)

This award recognizes the best paper published in the Journal of Dynamic Behavior of Materials in a given year. This award is given annually starting with volume 1 of the Journal of Dynamic Behavior of Materials published in 2015. This award was originally established in 1970 to recognize the best applications paper published in Experimental Mechanics over a two-year period, with the final award for an applications paper in Experimental Mechanics being given in 2014. In 1973 the award was named in honor of Rudolph Earl Peterson.

Affiliation: Westinghouse Electric Corp.: 1926 with J.M. Lessells in mechanics dept.; 1931-manager, mechanics dept.; 1965-Consultant.

Publications: (primarily in stress analysis, strength of materials & design). More than 60 papers; chapters in 6 handbooks; Book: Stress Concentration Design Factors (Wiley, 1953).

Professional Society Service: SEM: Executive Committee, 1946-47; Vice President, 1947-48; President, 1948-49; ASTM: Fatigue Committee Chairman, 1946-59; Administrative Committee on Simulated Service Testing, 1962; Board of Directors, 1957-60; Executive Committee, Materials Science Division, 1962; ASME: Fellow; Chairman.

2021 Recipients

Christian Kettenbeil

Zev Lovinger

Suraj Ravindran

Michael Mello

Guruswami Ravichandran

For the outstanding paper entitled "Pressure-Shear Plate Impact Experiments at High Pressures" published in the Journal of Dynamic Behavior of Materials 6, 489-501 (2020)



Christian Kettenbeil received his Ph.D. at the California Institute of Technology in 2019. His main research interests lie within the field of dynamic behavior of materials at very high pressures. In particular, Christian investigated the dynamic strength of brittle materials such as silica glass and ceramics using the pressure shear plate impact experiment. He then applied his experience in laser-based metrology systems and dynamic finite element simulations at the NASA Jet Propulsion Laboratory. Since January 2021, he has been working as a Product Design Engineer at Apple Inc.



Zev Lovinger works at Rafael, Advanced Defense Systems Ltd., Israel, since 2001, where he is currently a senior researcher and an R&D project manager. His field of expertise is strength and failure of materials under extreme conditions. He completed his B.Sc. in 1999 and M.Sc. in 2001 in civil engineering at the Technion, Israel Institute of Technology. In 2014 he received his Ph.D. from the faculty of mechanical engineering at the Technion. His Ph.D. research was on shear band failure evolution in collapsing cylinders. From 2017 to 2019, he was visiting associate in the Graduate Aerospace Laboratories at Caltech.



Suraj Ravindran is currently a postdoctoral scholar at the Graduate Aerospace Laboratories, California Institute of Technology (GALCIT), working on the high-pressure dynamic behavior of materials. He received his Ph.D. in mechanical engineering from the University of South Carolina in 2018. During his Ph.D. research, he developed a novel experimental technique to measure the local strain and temperatures at high spatiotemporal resolution. His research interests are in the mechanics of materials under extreme pressure, strain rate, and temperature.



Michael Mello is a Teaching Professor in the Department of Mechanical and Civil Engineering (MCE) at Caltech. He earned a B.S. degree in physics from Bridgewater State College, an M.S. degree in optics from the University of Rochester, and a Ph.D. from Caltech (GALCIT). Mike began his career as a research engineer in the Brown University plate impact lab from 1988–1997. He later worked at Intel from 1997–2006 as an electronics packaging engineer, where he supported product certification and metrology development and managed the company's premier mechanical testing laboratory. Mike is also currently an Associate Technical Editor of *Experimental Mechanics*, a post he has held since 2013.



Guruswami (Ravi) Ravichandran is the John E. Goode, Jr. Professor of Aerospace and Mechanical Engineering at the California Institute of Technology. He received his B.E. in mechanical engineering from the University of Madras (Regional Engineering College, Trichy), and master's degrees in Engineering and Applied Mathematics and Ph.D. in Engineering (Solid Mechanics and Structures) from Brown University. He has held visiting scholar appointments at Ecole Polytechnique,

Indian Institute of Science, and Tokyo Institute of Technology. His research interests include deformation, failure, dynamic behavior, micro/nano mechanics, active materials, cell mechanics, and experimental mechanics.

B.J. Lazan Award

This award was established in 1967 to recognize individuals who have made outstanding original technical contributions to experimental mechanics. In 1973 this award was named in honor of Dr. Benjamin J. Lazan, a pioneer in his field who achieved recognition in dynamic testing, vibration, materials damping, and fatigue.

The award honors inventors, developers, or contributors to the introduction of new devices or methods.

2021 Recipient

Ghatu Subhash

For innovative contributions to experimental mechanics and development of in-depth understanding of multiaxial dynamic response of ceramics and soft materials.



Professor Ghatu Subhash obtained his PhD from University of California San Diego and conducted his post-doctoral research at California Institute of Technology. He joined Michigan Tech in 1993 and moved to University of Florida in 2007. His research focusses on multiaxial behavior of advanced ceramics, metals, composites, gels and biological materials. He has developed novel experimental methods which have been patented and widely used. He has co-authored 200 peer reviewed journal articles, 85 conference proceedings, 2-books, and 6 patents. He has graduated 35-PhD students and is currently advising 6-PhD students and one post-doctoral fellow. He is a Fellow of ASME, SEM, and the American Ceramic Society. He has received numerous awards, including the SEM 'Frocht Award', 'Best Paper'-Journal of Engineering Materials and Technology, 'Significant Contribution Award' American Nuclear Society, 'Technology Innovator Award' from University of Florida, ASME Student Section Advisor Award, 'SAE Ralph R. Teetor Educational Award', and 'ASEE Outstanding New Mechanics Educator' award. He has served as the National Academies Panel Member at the Army Research Laboratory (2015-2018). He is the Editor-in-Chief of *Mechanics of Materials*.

F. Zandman Award

The award honors individuals who have made significant contributions to the development of measurements or applications utilizing photoelastic coatings or strain measurement techniques. The selection will be based upon the best paper published by SEM or any other recognized journal which publishes photoelastic

coatings or strain measurement techniques papers. Alternatively, a person who may not have published an outstanding paper, but has distinguished him or herself in other ways in the use of photoelastic coatings or strain measurement techniques may also be nominated. The first recipient to be recognized in 1990 was Alex S. Redner.

2021 Recipient

Fabrice Pierron

In recognition of significant contributions strain measurement techniques including development of the Virtual Fields Method and longstanding leadership of Strain.



Dr. Fabrice Pierron is currently Professor at the University of Southampton, UK. He graduated from ENSEM in Nancy, France, in 1989, and received his PhD from Lyon University, France, in 1994. Prof. Pierron is an expert in the development of novel identification strategies based on full-field measurements and heterogeneous tests. In particular, he has been instrumental in the development of the Virtual Fields Method. He has published over 140 journal papers and co-authored more than 300 conference communications. He has been Editor-in-Chief of Strain and Associate Editor of Experimental Mechanics. He is a cofounder of the MatchID company.

Michael A. Sutton International Student Paper Competition Awards

Sponsored by Correlated Solutions, Inc.

The Student Paper Competitions were originated to encourage excellence in technical communication in the experimental mechanics field. A regional paper competition was initiated in 1984 in a joint effort by SEM's Milwaukee Local Section and SEM's Student Chapter of Michigan Technological University. Since that time, students from the University of Wisconsin-Madison, University of Wisconsin-Milwaukee, and Michigan Technological University have participated in the regional competition held each spring in Milwaukee at one of the regular local section meetings.

The first national competition was held during the 1991 SEM Annual Conference. The competition was sponsored by SEM's Milwaukee Local Section along with the Education and Local Sections Committees of SEM. Twelve students from nine different schools participated in the competition.

Beginning with the VIII International Congress in 1996, the Competition was sponsored by the SEM Education Foundation and expanded to include students from around the world. In 2009, Correlated Solutions, Inc. began sponsoring the Competition. The title of the competition changed to the Michael A. Sutton International Student Paper Competition in 2018.

The presentations are judged on the basis of technical content, organization of material, effectiveness of delivery, adherence to allotted presentation time, and response to questions.

2021 Recipients

Chealsea Fox

Robin Martens

Hadi Mirmohammad



Chealsea Fox has just completed her Master's in Mechanical Engineering and Applied Mechanics at the University of Rhode Island in May 2021 in the Dynamic Photomechanics Laboratory under Dr. Arun Shukla and Dr. Carl-Ernst Rousseau. She will be starting her PhD in Mechanical Engineering at Caltech in September 2021. Her research interests are in additively manufactured and soft material testing, specifically under extreme thermo-mechanical loadings.



Robin Martens began his bachelor Biomedical Engineering in 2012 at TU/e, broadening his knowledge by following extracurricular courses. He continued with the master Biomedical engineering in the research group Cardiovascular Biomechanics (CVBM) combined with the master Mechanical Engineering in the research group Mechanics of Materials. He went to Kungliga Tekniska högskolan (KTH) in Stockholm for his internship. After finishing both masters in 2018, he continued with a PhD guided by Johan Hoefnagels, Olaf van der Sluis and Marc Geers. A combined numerical/experimental approach is used to understand the residual stresses and mechanical behavior in capacitive micromachined ultrasound transducers (CMUT).



Hadi Mirmohammad received his bachelor's in Mechanical Engineering from the University of Tehran, Iran in 2016. He joined the "High Strain-Rate Mechanics of Materials Laboratory" at the University of Utah under the direction of Dr. Owen Kingstedt in 2017 in pursuit of his master's. Hadi worked on transitioning the Grid-Method to microscale during his master's. After graduating with his master's in 2019, he continued with his Ph.D. in the same research group. The subject of his Ph.D. is "Benchmarking Microscale Ductility Measurements" funded by DOE-NEUP. In his free time, Hadi likes to play his acoustic and electric guitars as well as biking and skiing.

Technical Division Best Paper Awards

2021 - IMAC

Computer Vision and Laser Vibrometry

Sponsored by Polytec, Inc.

"Multi-Level Damage Detection using Octree Partitioning Algorithm"

Mehrdad S. Dizaji, Zhu Mao, University of Massachusetts, Lowell

Computer Vision and Laser Vibrometry -

Sponsored by Trillion Quality Systems

"Full-Field 3D Experimental Modal Analysis from Dynamic Point Clouds Measured using a Time-of-Flight Imager"

Moisés Silva, Federal University of Pará; Andre Green, John Morales, Peter Meyerhofer, Los Alamos National Laboratory; Yongchao Yang, Michigan Technological University; David Mascareñas, Los Alamos National Laboratory; Eloi Figueiredo, Universidade Lusófona de Humanidades e Tecnologias

Data Science –

Sponsored by Los Alamos Dynamics, LLC

"On an Application of Graph Neural Networks in Population Based SHM"

Georgios Tsialiamanis, University of Sheffield; Charilaos Mylonas, Eleni Chatzi, ETH Zürich; David Wagg, Nikolaos Dervilis, Keith Worden, University of Sheffield

Dynamic Environments Testing

"Investigation of Transmission Simulator Based Response Reconstruction Accuracy"

Matthew J. Tuman, Christopher A. Schumann, Matthew S. Allen, University of Wisconsin-Madison; Washington J. DeLima, Eric Dodgen, Honeywell Federal Manufacturing & Technologies

Dynamic Substructures

"Introducing pyFBS: An Open-Source Python Package for Frequency Based Substructuring and Transfer Path Analysis"

Tomaž Bregar, Gorenje d.o.o.; Ahmed El Mahmoudi, Technische Universität München; Miha Kodric, Gregor Cepon, Miha Boltezar, University of Ljubljana; Daniel J. Rixen, Technische Universität München

Dynamics of Civil Structures

"Physics-Guided Sparse Coding for Multiple Occupant Identification Using Floor Vibration Sensing"

Jonathon Fagert, Carnegie Mellon University; Mostafa Mirshekari, Stanford University; Pei Zhang, Carnegie Mellon University; Hae Young Noh, Stanford University

Dynamics of Civil Structures

"Transfer Learning from Audio Domains a Valuable Tool for Structural Health Monitoring"

Eleonora M. Tronci, Columbia University; Homayoon Beigi, Recognition Technologies, Inc.; Maria Q. Feng, Raimondo Betti, Columbia University

Dynamics of Civil Structures

"Experimental Evaluation of Drive-by Health Monitoring on a Short Span Bridge Using OMA Techniques"

William R. Locke, Laura Redmond, Matthias; J. Schmid, Clemson University

Model Validation and Uncertainty Quantification –

Sponsored by Los Alamos Dynamics, LLC

"Uncertainty Quantification of Inducer Eigenvalues using Conditional Assessment of Models and Modal Test of Simpler Systems"

Andrew M. Brown, Timothy J. Wray, NASA/Marshall Space Flight Center; Jennifer L. DeLessio, JSEG/ESSCA-NASA/Marshall Space Flight Center

Nonlinear Structures and Systems

"Effects of the Geometry of Friction Interfaces on the Nonlinear Dynamics of Jointed Structures"

Jie Yuan, Loic Salles, Christoph Schwingshackl, Imperial College London

2021 - ANNUAL

Dynamic Behavior of Materials

"Crack Branching in Soda-Lime Glass: Optical Measurement of Precursors using Digital Gradient Sensing"

Sivareddy Dondeti, Hareesh V. Tippur, Auburn University ■

Member News

Grande-Allen Named Fellow of Medical and Biological Engineering Academy

Rice bioengineer also receives Diamond Award for Distinguished Achievement in Academia from the University of Washington.



JANE GRANDE-ALLEN, the Isabel C. Cameron Professor of Bioengineering at Rice's Brown School of Engineering, has been named one of 26 fellows of the International Academy of Medical and Biological Engineering (IAMBE) for 2021.

Grande-Allen was nominated "for developing mechanically complex biomaterials and bioreactors to investigate cardiovascular and intestinal mechanobiology, and for

identifying disease-based and age-specific remodeling programs affecting the extracellular matrix and mechanics of heart valves," according to the academy.

IAMBE, which has fewer than 250 fellows worldwide, was established to conduct programs that encourage young people entering the field and also their development in the early stages of their career.

Grande-Allen will also receive the 2020 Diamond Award for Distinguished Achievement in Academia from the University of Washington's College of Engineering for her pioneering research in heart valve biomechanics and heart valve tissue engineering. The award will be presented in an online ceremony May 21.

In recent studies, Grande-Allen and her lab have developed mechanical models that mimic conditions in intestines to show how bacteria cause disease, created paper-based structures to help learn how heart valves calcify, invented soft microparticle sensors to monitor oxygen in hydrogel-based tissue scaffolds, and discovered some of the strategies heart valve cells use to maintain a supply of life-giving oxygen.

Along with her many professional and teaching awards, Grande-Allen is former director of Rice's Institute of Biosciences and Bioengineering, and is also a fellow of the American Institute for Medical and Biological Engineering; the Biomedical Engineering Society; the American Heart Association's Council on Arteriosclerosis, Thrombosis and Vascular Biology; the Society for Experimental Mechanics; and the American Association for the Advancement of Science.

Grande-Allen joins Lydia Kaviraki, the Noah Harding Professor of Computer Science and a professor of bioengineering, electrical and computer engineering and mechanical engineering and director of the Ken Kennedy Institute, and Antonios Mikos, the Louis Calder Professor of Bioengineering and Biomolecular Engineering, as IAMBE fellows. ■

Article Source: Mike Williams, senior media relations specialist in Rice University's Office of Public Affairs - [click here](#) for original article.

Archon - Teacher of the Nation

THE POPE AND PATRIARCH of Alexandria and All Africa bestowed Emmanuel Gdoutos, former SEM President, the honorary title of "Archon - Teacher of the Nation".



Remembering John Christopher O'Callahan

JOHN CHRISTOPHER O'CALLAHAN, Ph.D. PE, passed away on 5/19/21; he was born 11/28/38 in Cambridge, MA.

John O'Callahan, Professor Emeritus of Mechanical Engineering at University of Massachusetts Lowell, earned undergraduate (B.S.) and graduate degrees (M.S. and Ph.D.) in Mechanical Engineering and Computer Science from Northeastern University, where he was an instructor from 1961-1969 until he moved on the University of Lowell (now University of Massachusetts Lowell). In the late 1970's, John O'Callahan and G. Dudley Shepherd started The Modal Analysis and Controls Laboratory at University of Massachusetts Lowell where they introduced modeling and testing tools to address complicated structural dynamic problems.

John was a common face at the IMAC Conferences until he retired; his wife Kathy was also a fixture at the conference too. John made many significant technical contributions to the IMAC Community starting from the first IMAC Conference. Analytical modeling, structural dynamic modification, system modeling, model reduction and expansion, test-analysis correlation and model updating were some of his more specific areas of interest. At the IMAC Conference, people would seek him out to discuss their technical difficulties and pick his brain to help solve their problem. And John was always very open in discussing anyone's problems.



He was also very well known in local industries in New England where he would always be sought after to help solve some perplexing problem and develop specialized software to address sticky issues. And in the 1970s, he was also known for developing customized finite element and niche software for particular applications.

As an educator, Dr. O'Callahan was second to none. He taught with a passion that was invigorating and had the rare ability to take complicated engineering concepts and explain them in a detailed way to enlighten his students. His dedication to his

students and colleagues allowed them to grow and contribute to the engineering profession.

John's contributions to the structural dynamics community were significant and long lasting. He will be remembered by many people, in many different ways, depending on their interaction with him in their various dealings. But rest assured John will not be forgotten. He has touched many in different ways.

John certainly was a small giant with a big technical stick.

I had the unique pleasure to know John and have worked with him for over 4 decades.

Remembrance by Pete Avitabile

Full obituary can be found [here](#). ■

Upcoming Events

2021

iDICs Conference | Nov 3-5, 2021

La Cité Nantes Events Center

Nantes, France

2022

IMAC-XL | February 7–10, 2022

Rozen Plaza Hotel

Orlando, FL USA

2022 SEM Annual | June 13-16, 2022

Omni William Penn Pittsburgh

Pittsburgh, PA US:

