



Experimentally Speaking ...

<http://sem.org>

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Message from the President

It seems like only yesterday when I took over as President of the Society for Experimental Mechanics. It has been an exciting and busy year with numerous conferences and meetings. I would like to summarize some of this year's highlights and prepare you for coming events.

My tenure started with the Fall Conference in Edinburgh, Scotland which was hosted by the British Society for Strain Measurement (BSSM) and co-sponsored by SEM. The conference theme, "Advances in Experimental Mechanics – Integrating Simulation and Experimentation for Validation," spanned

three days and boasted 85 presentations including, two keynote lectures, invited talks for the best paper in the journal *Strain*, as well as the prestigious Measurements Lecture. Margaret Lucas, Eann Patterson and Simon Quinn were excellent hosts and made all of the participants welcome. I must say that I was impressed by the organization, hospitality and venue of the conference. I was also impressed by the number of participants from North America as well as from Asia. I can't wait until next year's fall SEM sponsored conference which is being organized by Wei-Chung Wang and will be held at the Grand Hotel in Taipei, Taiwan, November 8-11, 2012.

In February, the IMAC Conference and Exposition on Structural Dynamics, held in Jacksonville, Florida, marked its 30th anniversary. There were nearly 300 papers presented in 63 sessions. Additionally, this year, we had a particularly strong exhibition featuring 35 vendors exhibiting their latest in application hardware, instrumentation, and software. Al Wicks from Virginia Tech and the other conference organizers put together a strong program. One of the most notable aspects of this conference was the number of young new faces that were present at the conference, suggesting that the conference is continually reinventing itself to serve the needs of industry and research in modal analysis.



Peter G. Ifju, SEM President, 2011–2012

This spring saw a renewal of enthusiasm for local graduate student conferences. In past years the Southeast region held its Graduate Student Symposium on Experimental Mechanics. This event not only was held in the Southeast (hosted by Mike Sutton at the University of South Carolina) but also in the Northeast (hosted by Hugh Bruck and Bongtae Han at the University of Maryland). The South Carolina event was attended by 45 from the University of Florida, University of Alabama, North Carolina State, University of Alabama-Huntsville and three departments from the University of South Carolina. Talks spanned a

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2012 SEM Southeastern Graduate Student Symposium

The 2012 Southeastern Graduate Student Conference on Experimental Mechanics was hosted by the College of Engineering and Computing at the University of South Carolina on March 9 and 10. There were a total of 27 presentations by students from the University of Florida, University of Alabama, North Carolina State, University of Alabama-Huntsville and three departments in the University of South Carolina. Faculty attending the conference with their students included the President of the SEM, Prof. Peter Ifju (U. Fla); Dr. Paul Hubner (U Ala); Dr. Yong Zhu (NC State); Prof. Michael Sutton, Dr. Addis Kidane, Dr. JK Yang, Dr. Susan Lessner and Dr. Xinyu Wang (USC). Also attending in support of the Graduate Student Conferences was our SEM Director, Dr. Thomas Proulx, who brought along several SEM journals and books to distribute to the student attendees.

As has been the practice for the past several decades, the conference was

informal; coats and ties were banned from the presentation room! Talks spanned a broad range of topics including nano-materials and measurements; dynamic loading and measurements; mixed mode fracture; soft tissue biomaterial measurements; MAVs; static and dynamic composite measurements and photoluminescent coatings. Interestingly, for the first time our conference had presentations by twin sisters, Melissa and Jennifer Conway, both attending the University of Alabama. Special thanks to SEMEF for providing financial support for the evening dinner; USC College of Engineering and Computing for access to the facilities; USC Department



of Mechanical Engineering staff, especially Misty O'Donnell for their assistance; Megan and Chris McNeill for organizational support and Dr. Ning Li for photographic services and organizational support.

2012 SEM Northeast Graduate Student Symposium

The University of Maryland's Department of Mechanical Engineering hosted the 2012 Northeast Society for Experimental Mechanics (SEM) Graduate Student Symposium in the university's Jeong H. Kim Building on March 22 and 23, reactivating a regional conference that had been on hiatus since the 1990s.

The symposium was co-sponsored by the Department of Mechanical Engineering and SEM and organized by graduate students Sandip Haldar, Azadeh Keshtgar, Erik Levin, Karak Parmar, and Preeti Chauhan with the help of Professors Hugh Bruck and Bongtae Han and Amarildo DeMata. Forty participants from the Department of Mechanical Engineering as well as University of Maryland Baltimore County, University of Delaware, Brown University,

Columbia University, and the University of Rhode Island presented research on a variety of areas involving experimental mechanics, ranging from the characterization of biological tissues to the control of microparticles using laser tweezers. Many projects focused on the mechanics of advanced composite structures, and the effects of using nanotechnology on the mechanics of materials.

There were many opportunities for participants to network with future colleagues and to view different



methods of research, such as the University of Maryland Baltimore County's log of research on biological materials, and the University of Rhode Island's dynamic loading of structures.

The conference's success inspired Haldar, a third year Ph.D. student, to try to reactivate the SEM student chapter on campus.

Remembering David Zimmerman

David Zimmerman was my 4th Ph.D. student and my first from the U.S. I met him whilst teaching a junior level course of 240 in System Dynamics at the University of Buffalo, my first year as an Assistant Professor. Even in that large class, he distinguished himself through his brilliance and his keen sense of humor. He sat with a group of guys who sat together, asked great questions and became known to me as the "Burrito Brothers" for reasons not polite to discuss. Dave was certain at that time to go to work for a local company (Hooker Chemical, if I recall) so resisted my attempts to recruit him to grad school. In the end, Hooker had a big lay off and he became my grad student. We flew to NASA together and secured a NASA Graduate Student Fellowship for his Ph.D. He spent many months at Langley working with Garnet Horner and Jer-Nan Juang and establishing himself with NASA even before his first academic position. He was a fabulous student and great friend during his graduate years. He helped mentor my other students and continued to keep in contact with them. When Dave graduated with his Ph.D., he had several offers, Princeton and the University of Florida. He took the job at Florida because "the people were nicer". That was Dave, as much interested in people as he was in engineering. I watched his career develop with a great deal of pride and happiness. He was an excellent person, and excellent professional and the world is now missing a special person.

– Dan Inman

Professor David Zimmerman, a distinguished and internationally renowned researcher and leader in the field of experimental and analytical structural dynamics, passed away Tuesday, April 10, 2012. He was 51.

Professor Zimmerman was an exceptional and well-accomplished educator and researcher who has served his profession and students during a shortened 25 year career. He received

his B.S., M.S., and Ph.D. in Mechanical Engineering from the State University of New York at Buffalo in 1982, 1984, and 1987, respectively. His first employment was with the University of Florida in the Department of Aerospace Engineering, Mechanics, and Engineering Science with a tenure spanning from 1987 to 1993. While at the University of Florida, he reached the rank of Associate Professor and created the Dynamic Systems and Controls Laboratory. In the fall of 1993, Dr. Zimmerman joined the Department of Mechanical Engineering with the Cullen College of Engineering at the University of Houston as an Associate Professor and became a Professor in 2000. He served in several leadership roles with the Mechanical Engineering Department including Associate Chairman from 2000 to 2009 and as Interim Chairman from 2010 to 2011. At the University of Houston, he also created the Dynamic Systems and Controls Laboratory which housed four faculty members.

Dr. David Zimmerman's research activities spanned a very broad range of technical areas, including, structural health monitoring of infrastructure, structural model validation and verification of payloads, fault detection and isolation in actively controlled structures, MEMs modeling and validation, vehicle dynamics, and tissue engineering. He authored or co-authored over 170 technical publications and received multiple teaching and research awards. He served as graduate student advisor to 12 Ph.D. and 31 M.S. students. He also mentored several junior faculty members and was involved in multiple professional activities including, journal editor, conference organization, conference session chair, conference technical committee, journal technical reviewer and professional society officer. The overwhelming consensus among his friends, colleagues, and students is that Dr. Z, as his students called him, was extremely



intelligent, knowledgeable, innovative, enthusiastic, funny and open-minded that he knew how to work with people and how to bring people to work together. He unselfishly vested every effort and resource to develop his students beyond the classroom and laboratory by providing them the opportunity to attend professional conferences and symposiums. In some instances, this required him to undercut his own accommodation. Most of all, Dr. Z was a great family man and an outstanding father. He will be dearly missed by everyone that has ever dealt with him. He has definitely made some notable contributions and impacts to the world that he has prematurely left behind which will continue to live on for years to come.

Dr. Zimmerman is survived by his daughter, Taylor Zimmerman, of Houston, a sister, Sandra Gareton, of Cary, N.C., and niece Julie Gareton. Contributions may be made to the David Zimmerman Memorial Fund, 102 Grey Bridge Row, Cary, N.C. 27513 to benefit students of mechanical engineering.

God Bless You Our Dear Friend and Mentor. Rest in Peace.

– Mo Kaouk, Ph.D. (Zimmerman's 1st Ph.D Student)

2012 SEM/IMAC Awards

Since its organization in 1943, SEM has relied heavily upon leadership in the professional expertise of its members. In 1967 an Honors Committee was established now functions as a screening committee for the majority of SEM awards with final approval resting with the Executive Board. The Honors Committee solicits nominations from the membership. Please see the SEM website, <http://sem.org>, for information on how to nominate a candidate. We congratulate these people for their outstanding achievements.



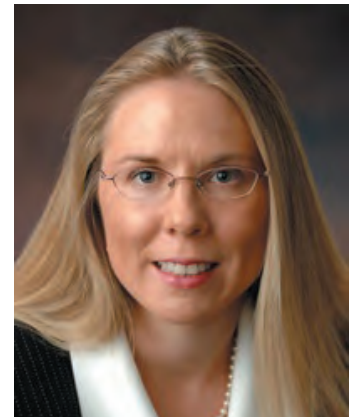
SEM Honorary Member
William N. Sharpe, Jr.



SEM Fellow
Edwin O'Brien



SEM Fellow
Daniel Rittel



SEM Fellow
Nancy Sottos



William M. Murray Lecturer
Gary L. Cloud



**Journal of Strain Analysis
Young Investigator
Lecturer**
Chiara Daraio



**Dominick J. DeMichele
Award**
Raj K. Singhal



**Dominick J. DeMichele
Scholarship Award**
Siavash Dorvash



G.A. Brewer Award
Hubert W. Schreier



A.J. Durelli Award
Michael B. Prime



M.M. Frocht Award
Sia Nemat-Nasser



D.R. Harting Award
Maxime Chartrand



D.R. Harting Award
Vladimir Brailovski



D.R. Harting Award
Yannick Baril



M. Hetényi Award
Krishna N. Jonnalagadda



M. Hetényi Award
Ioannis Chasiotis



M. Hetényi Award
Sivakumar Yagnamurthy



M. Hetényi Award
John Lambros



M. Hetényi Award
Jeffrey Pulskamp



M. Hetényi Award
Ronald G. Polcawich

Continued



M. Hetényi Award
Madan Dubey



B.J. Lazan Award
Kaliat T. Ramesh



R.E. Peterson Award
Tore Børvik



R.E. Peterson Award
Michael J. Forrestal



R.E. Peterson Award
Thomas L. Warren



**F.G. Tatnall Award and
C.E. Taylor Award**
Arun Shukla



F. Zandman Award
Krishnamurthi Ramesh

An Opportunity for Collaboration

Last year, I was invited to present a paper in a session of the Acoustical Society of America on Musical Acoustics. This gave me the opportunity to study and report on reeds for musical instruments, specifically clarinet reeds, both natural cane and made from synthetic materials. One of the things my study showed is that, despite manufacturer's

claims, the materials used for synthetic reeds do not truly reproduce the characteristics of natural cane. Our laboratories at Karl Stetson Associates, LLC, are very well suited to measurement of reed properties, both static and dynamic, and I should like to help develop a better substitute for natural cane, but I do not have the necessary experience in materials. I

would like to invite any materials expert interested in this problem to contact me at kastetson@holofringe.com.

Karl A. Stetson
Karl Stetson Associates, LLC
2060 South Street
Coventry, CT 06238

Susan K. Foss Named Editor Emeritus

The Executive Board of the Society has named Susan K. Foss Editor Emeritus of *Experimental Techniques*. For those of you who may be unaware of Susan's contributions to ET, let me give you some background. The earliest printed mention I can find of Susan's involvement in ET goes back to 1980. At that time ET was the responsibility of the Applications Committee and Susan, as Vice-Chair of the Committee, served as de facto Technical Editor of ET. When ET appointed its first "official" Technical Editor in 1985, it was Susan Foss. She served

in this position 1985-1987 and again 2001-2003. She served as Associate Editor from around 1997 to the present day. While many other people have made significant contributions to ET, Susan has been a constant presence in ET's growth and has been a major supporter of the Publication. Susan will be presented with a plaque commemorating her appointment at the Awards Lunch at our meeting in Costa Mesa.

-Tom Proulx



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broad range of topics including nano-materials and measurements, dynamic loading and measurements, mixed mode fracture; soft tissue biomaterial measurements, MAVs, static and dynamic composite measurements and luminescent photoelastic coatings. The Maryland event was attended by 40 participants from the University of Maryland, University of Delaware, Brown University, Columbia University, University of Rhode Island, and University of Maryland Baltimore County. Research presentations were delivered on a variety of areas involving experimental mechanics, ranging from the characterization of biological tissues to the control of microparticles using laser tweezers. Tom Proulx, our Society's Executive Director and I attended both events. I would like to personally thank Mike and Hugh for being such good hosts. By all indications, it looks like next year the tradition will continue to pick up pace. Hopefully similar events will be spawned in the mid-west and western regions.

Every fourth year the Annual Spring Conference takes on a more international flavor, thus is deemed the International Congress. This year marks the 12th International Congress and will be held in Costa Mesa, California. The conference will span 5 days, starting on Sunday, June 10 and ending on Thursday, June 14. There are nearly 450 papers to be presented in 96 sessions. Additionally, this year, we have a particularly strong exhibition featuring 25 vendors. As usual, there is a series of pre-conference courses on Sunday. The Society's premier lecture, the William M. Murray Lecture, will be presented by Professor Gary Cloud from Michigan State University on Tuesday, and the Journal of Strain Analysis Young Investigator Lecture will be presented by Chiara Daraio from Caltech on Monday. Since this is a congress year, we will also have two plenary talks by Wei-Chung Wang (our former President) of National Tsing Hua University, and Robert V. Goldstein from the Russian Academy of Sciences. Other highlights include the

Annual SEM International Student Paper Competition as well as a Student Poster Session. There will also be a panel on Junior Career Development in Industry and Research Labs, as well as a panel discussion on High-Rate Imaging. I invite you to attend the All Society Awards Luncheon on Wednesday. Additionally, we will host a pizza lunch on Tuesday to promote participation in our technical divisions.

In closing, it has been a very busy year. Our society is as healthy as ever. Our staff is efficient and friendly, so please take the time and thank them for their hard work. Certainly, they make my job much easier and enjoyable.

A handwritten signature in black ink, appearing to read "Peter Alper". The signature is fluid and cursive, written on a light-colored background.



Experimentally Speaking . . .

Upcoming SEM/IMAC Conferences

SEM Annual Conferences

June 11-14, 2012

SEM XII International Congress and
Exposition on Experimental and
Applied Mechanics

*Measurement Challenges for New
Structures and Materials*

Hilton Orange County/Costa Mesa
Costa Mesa, CA USA

June 3-6, 2013

2013 SEM Annual Conference and
Exposition on Experimental and
Applied Mechanics

The Westin Lombard Yorktown Center
Lombard, IL USA

Fall Conferences

November 6-11, 2012

Current Trends and Future Directions
in Experimental Mechanics

Taipei, Taiwan

IMAC Conferences

February 9-10, 2013

IMAC-XXXI

Preconference Courses

February 11-14, 2013

IMAC-XXXI Conference and Exposition
on Structural Dynamics
*Engineering Nonlinearities in Structural
Dynamics*

Hyatt Regency Orange County
Garden Grove, CA USA

7 School Street • Bethel, CT 06801

