



Experimentally Speaking...

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MESSAGE FROM THE INCOMING PRESIDENT



Emmanuel Gdoutos, SEM President, 2013-2014

I am humbled and honored to assume the duties of the President of the Society for Experimental Mechanics for 2013-2014 effective after the closing of this conference on Wednesday, June 5, 2013. I am deeply appreciative of the trust you have placed in me by choosing me to represent SEM over the next year. I would like to thank you for the confidence you have shown in me and I would like to assure you that I will work with all my resources to prove worthy of your trust. I assume my duties with enthusiasm and I am proud to lead a prestigious society with members from around the world, serving the international community of experimental mechanics since 1943. We are excited that this year marks the 70th birthday of the Society; we have much to celebrate.

board, Executive Directors, staff, and members. I will stand on their shoulders to maintain the healthy status of the Society during the year of my presidency. Our society is strong, healthy, and robust in terms of intellectual property, participation, and finance. The two sterling annual conferences, the Spring Annual Conference and the Winter IMAC conference the two reputable journals, *Experimental Mechanics* and *Experimental Techniques*, the Newsletter (Experimentally Speaking...), the high-quality workshops, and the manual on experimental mechanics receive primary recognition around the world. My main role as next President will be to maintain these virtues, the stability, the health, the robustness, and the friendly environment of the Society. And to assure that the "friendly Society" will serve its members in the best possible way.

Following the tradition of this address, I will lay down my vision for the year ahead. The objectives of our society are: (a) to increase the knowledge of physical phenomena; (b) to further the understanding of the behavior of materials, structures and systems; and (c) to provide the necessary physical basis and verification for analytical and computational approaches to the development of engineering solutions.

The role of the President is to publically represent and express the position of the Society. It is to hear the voices of its members. On the other hand, the President should make propositions to the members and get their feedback and reaction. I had the chance to discuss the present and future status of SEM with junior and senior members. Based on these discussions, I consider that SEM should enhance its role in the domestic and international arena in experimental

These objectives have been served in the best possible way thanks to the dedication, hard work, and leadership of Presidents, members of the executive

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Continued

mechanics, primarily with four tactics. These four tactics will not only enhance the prestige of the Society, but by increasing membership and participation, will also improve the Society's financial position.

- i. Encourage development of SEM student chapters of experimental mechanics in American universities.
- ii. Increase our global presence and tighten our collaboration with experimental mechanics societies throughout the world.
- iii. Strengthen our relations with organizations with overlapping objectives.
- iv. Tighten our links with industry and national laboratories.

Let me elaborate on my above points:

Encourage development of SEM student chapters of experimental mechanics in USA universities

Students are the future of the Society. Our annual Student Paper Competition attracts more than 30 students every year. In addition, many Master's and PhD students attend our conferences. In terms of student attendance, the Society is in a strong position. However, there is a significant opportunity to increase students' involvement in the society affairs. One way to proceed in this direction is to support student chapters in experimental mechanics in our universities. I would like to urge you to establish such chapters. SEM will support the chapters by providing financial support for their activities.

Increase our global presence and tighten our collaboration with experimental mechanics societies throughout the world

Our objective will be to develop mutually beneficial collaboration with experimental mechanics societies of other countries such as, but not limited to, the British Society for Strain Measurement (BSSM), the Italian, the Japanese, the Spanish, the French, the Portuguese, the Indian, and the Chinese societies of experimental mechanics.

Strengthen our relations with organizations with overlapping aims and objectives.

Collaboration with international organizations with overlapping aims and objectives is crucial to maintain our role as world leaders in experimental mechanics. We will sign MoUs with other USA and International societies, like the American Society of Mechanical Engineers (ASME), American Society of Civil Engineers (ASCE), Materials Research Society (MRS), American Society of Composites (ASC), American Institute of Aeronautics and Astronautics (AIAA), Society of Engineering Science, American Academy of Mechanics (AAM), European Society for Experimental Mechanics (EuraSEM). Membership of these societies will get to know us better, and, possibly, join our Society, while we will benefit from their expertise.

Tighten our links with industry and national laboratories

Our work is closely aligned with many companies and national laboratories particularly in terms of design and testing. Companies such as Ford and GM, Boeing, Northrop Grumman, and Lockheed Martin and federal labs such as the Jet Propulsion Laboratory in Pasadena, CA, Sandia in Albuquerque, NM, Los Alamos in Los Alamos, NM, and Lawrence Livermore in Livermore, CA, provide forums where our Society can establish mutually beneficial collaboration. Links have already been established with many of these institutions, however, there is an opportunity to further our relationship in a substantive way.

I would like to share with you some personal reminiscences from some time ago. I joined the Society 38 years ago when I was an Instructor at the National Technical University of Athens. The first conference of the Society I attended was the: "Sixth International Conference on Experimental Stress Analysis," in Munich in 1978. I admired big names of the Society such as Max Frocht, A.J. Durelli, Jim Dally, Albert Kobayashi, Dan Post, C.W. Smith, Chuck Taylor, Mike and Bill Fourney, Fu-pen Chiang, Isaac Daniel, my advisor P.S. Theocaris. They were my heroes. I am happy to have had the opportunity to

know most of these people personally. In 1975, when I joined the Society, I could not imagine that I might one day serve the Society as President.

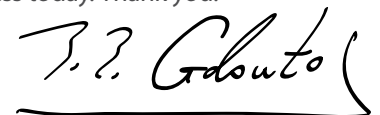
My appointments for the coming year are as follows:

1. Tom Proulx as Secretary of the Society
2. Jon Rogers as Treasurer of the Society
3. Carlos Ventura, Immediate Past President, as Chair of the Administrative Council
4. Guruswami Ravichandran, current Vice President, is appointed for a two-year term as Chair of the Technical Activities Council
5. Eric Brown – At Large Board Member as Vice-Chair of Technical Activities Council
6. Linda Hanagan (IMAC) – At Large Board Member as Vice Chair of Editorial Council
7. Chris Niezrecki (IMAC) – At Large Board Member as Executive Board Representative to IMAC Advisory Board
8. Bob Rowlands – At Large Board Member as Vice Chair of National Meetings Council
9. Isaac Daniel -At Large Member of Honors Committee

Please join me in thanking the Director and staff for their hard work in running and keeping the Society healthy. They are the backbone of the Society. We come and go. They stay, assure and safeguard the vitality, continuity and growth of the Society.

I would like to express once more my enthusiasm, excitement, and determination in assuming the duties of the President for the next twelve months and I am looking forward to working closely with you for the achievement of our objectives. I would be delighted to discuss with you any ideas, recommendations, or suggestions.

Before closing I would like to say how thankful I am to God for making me so fortunate and worthy to deliver this address today. Thank you.



INTEL INTERNATIONAL SCIENCE AND ENGINEERING FAIR 2013

The Intel International Science and Engineering Fair, a program of Society for Science & the Public, is the world's largest pre-college science competition, and included 1,581 high school students from more than 70 countries, regions and territories. Finalists showcased their independent research as they competed for more than \$4 million in awards.

Students are able to compete as a finalist in the Intel International Science and Engineering Fair after winning a top prize from one of 454 affiliate fairs (433 of which brought finalists). In addition

to presenting their research on a global stage, Intel International Science and Engineering Fair finalists were judged by and interacted with doctoral level scientists as they competed for prizes. Each year, more than 400 finalists receive awards and prizes for their groundbreaking research.

Thanks to the financial support of SEMEF, SEM has sponsored an award to recognize excellent projects in the experimental study of materials and mechanical structures. Congratulations to our 2013 award recipients.



From left-to-right: Gary Foss, Rohan Palanki, Alma Amad Alhussaini, Vladislav Sevostianov, Kathryn Dannemann

FIRST AWARD \$2500

Vladislav Sevostianov, 15, Las Cruces High School, Las Cruces,

EE076

"Self-diagnosing Smart Bolts to Save Your Life" The student embedded galfenol wire in a bolt and experimentally verified that plastic deformation of the bolt could be detected by a magnetic sensor.

SECOND AWARD OF \$1500

Alma Amad Alhussaini, 17, Dhahran Schools, Khobar, Saudi Arabia

EN054

"The Study of the Effectiveness of Novel Optimization of Digital Image Correlation to Obtain Accurate Full-field Displacement Measurements" The student studied speckle images obtained from stressed tensile coupons and optimized several test setup parameters to get the best comparison to finite element estimates.

THIRD AWARD OF \$1,000

Rohan Palanki, 16, W.P. Davidson High School, Mobile, Alabama

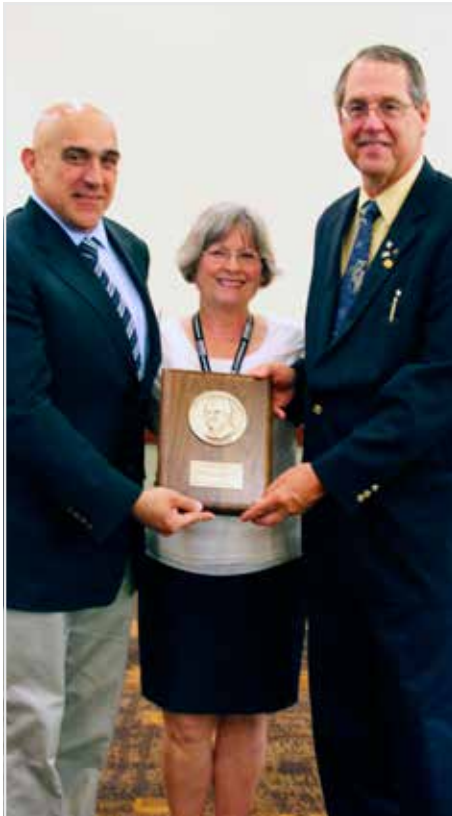
EN056

"Piezoelectric Energy Harvesting from Human Breath for Biomedical Applications" The student demonstrated that by fluttering in an airflow, a semicircular ribbon of piezoelectric PVDF could be used for energy harvesting for biomedical and other applications. He also showed that it could be used to develop an inexpensive instrument to measure respiratory distress.

2013 SEM ANNUAL CONFERENCE AND EXPOSITION

JUNE 3–5, 2013 AT THE WESTIN LOMBARD YORKTOWN CENTER, LOMBARD, IL USA

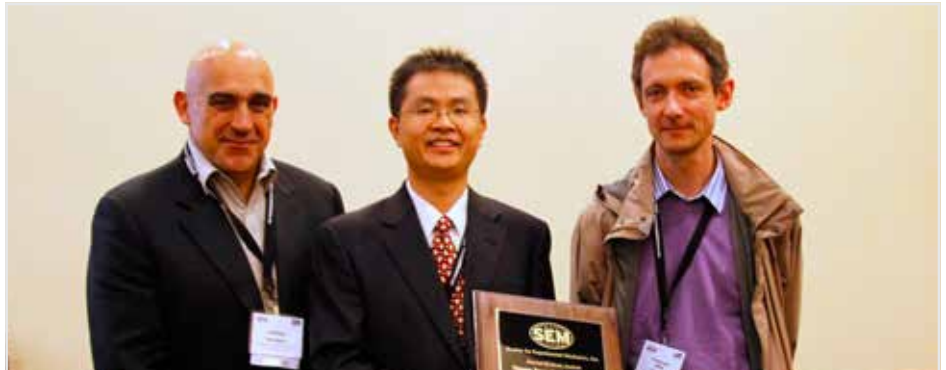
Highlights and awards of a very well attended 2013 SEM Annual Conference and Exposition in Lombard, Illinois. Our sincerest congratulations to all those who received awards and to the attendees for making this another successful conference.



SEM President—Carlos Ventura (L), William M. Murray lecturer—Michael Sutton (R) and his wife Ann



President Ventura and SEM Honorary Member—Cesar Sciammarella



(Left-to-Right): President Ventura, JSA Young Investigator lecturer—Yong Zhu, Editor for the Journal of Strain Analysis—François Hild



16 of the 18 participants in the International Student Paper Competition with President Ventura



SEM Fellow—John Lambros and President Ventura



SEM Fellow—Fabrice Pierron and President Ventura



SEM Fellow—K. T. Ramesh and President Ventura



A. J. Durelli recipient—Ioannis Chasiotis and President Ventura



President Ventura and M. M. Frocht recipient—Wendy Crone



B. J. Lazan recipient—Gary Schajer (L), President Ventura and SEM Executive Director—Tom Proulx (R)



President Ventura and S. Nemat-Nasser recipient—Horacio Espinosa



F. G. Tatnall recipient—José Freire and President Ventura



Winners of the International Student Paper Competition (Left-to-right):

- Gregory Parsard** (2nd place)
- Phillip Jannotti** (3rd place)
- Desislava Bacheva** (1st place)

with President Ventura



President Ventura and P. S. Theocaris recipient—Ares Rosakis (Center) and his son Alexandros



F. Zandman recipient—James Paul Hubner and President Ventura



President Ventura and M. Hetényi recipient—Samantha Daly

EVENTS

Attendees mingling at the various reception and award functions and interacting with Exhibitors.



CLOSING REMARKS BY THE OUTGOING PRESIDENT



My tenure as the president of SEM for the 2012-2013 has been a remarkable experience, and I would venture to say that it has been an "easy tenure." I say it because during these last twelve months I have been working with great people who have made things so easy for me. The Executive Board has been very active and has accomplished many things, as you could appreciate from the reports presented today. And the support of the SEM staff has been fantastic!

Emmanuel, Nancy, Peter, Tom, Jon, Rich, Cosme, Jane, Paul, Todd, Alberto, Kathryin, James, Chuck, your contributions and enthusiasm about the activities of SEM have been remarkable and you have made "things happen" during this last year. Likewise, the staff has been outstanding this year, so I would like to express my sincere thanks to Tom, Jen, Shari, Joni, Sharon and Jocelyn for making things so easy and smooth for me this year. I would also like to welcome Nuno to the SEM family.

My goals during my term as President were simple and very straight forward. These were: continue with the mission and current directions of SEM; promote growth of SEM; and strengthen our links. And I think that I succeed in achieving these humble goals, and not because I did all of this, but because I had a remarkable team working with me that contributed to this success!

During these last twelve months I had the opportunity to share with you my vision about diversity and creative thinking, and how SEM is a great organization to promote these two concepts. I hope that these ideas are useful for planning the future directions of SEM.

This year we celebrate the 70th anniversary of SEM. When SEM was founded in 1943 the original goal of the Society was to "further the knowledge of stress and strain analysis and related technologies." Over the years, these related technologies have become an important component of the Society, and the conference this year provides a great opportunity to learn about the journey from photoelasticity to digital image correlation, and other emerging technologies.

The conference organizers have put together a strong and interesting program and I would like to express my sincere thanks to them for this excellent conference program. I would like to thank and welcome all of the paper authors. I would also like to extend a special welcome to the students that will be presenting their work at the conference. We are committed to ensure that SEM gives them the opportunity to share and discuss their research findings.

Please take the time to thank the SEM staff. Take full advantage of the program and visit the exhibits. And be sure to talk to old acquaintances and make new ones during the special social events during the conference. Networking is an important part of SEM and we want to provide the right environment for you to accomplish this.

SEM has flourished since its birth in 1943. I am grateful for the opportunity to help ensure that SEM remains a vital and strong society for years to come and also to ensure that it remains as the "Friendly Society."

Thank you

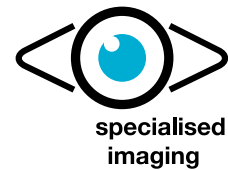
A handwritten signature in black ink, appearing to read "J. E. Denting." The signature is fluid and cursive.



Experimentally Speaking...

THANK YOU TO OUR SPONSORS!

2013 SEM ANNUAL CONFERENCE AND EXPOSITION



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