



Applied Mechanics Division

2015 Newsletter

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Yuri Bazilevs, Editor
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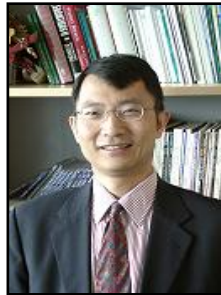
Applied Mechanics Division 2014-2015 Executive Committee



Vice-Chair
Peter Wriggers



Program Chair
Arun Shukla



Chair
Huajian Gao



Program Vice-Chair
Pradeep Sharma



Secretary
Balakumar Balachandran

Message from the Chair

Over the past five years, I have had the great pleasure and honor to serve on the Executive Committee of the Applied Mechanics Division of ASME, rotating in roles from Secretary, Program Vice-Chair, Program Chair, Vice-Chair, and finally to Chair during the last year. Time flies when you are having fun, and now my term as Chair has come to the end. During my service on the Executive Committee, I have been closely associated with a truly remarkable and dedicated group of colleagues, including past Chairs **Zhigang Suo**, **Tayfun Tezduyar**, **Ares Rosakis**, **Ken Liechti**, **Larry Bergman**, and current members **Peter Wriggers** (Vice-Chair), **Arun Shukla** (Program Chair), **Pradeep Sharma** (Program Vice-Chair) and **Balakumar (Bala) Balachandran** (Secretary). I take this opportunity to thank each of them for their help and support for me personally and for their distinguished service to the community. As of July 1, Peter Wriggers will become Chair, and **Yonggang Huang** from Northwestern University will join the EC as the new Secretary. **Dennis Kochmann** (Caltech) and **Yuri Bazilevs** (University of California, San Diego) will continue their valuable service to the EC as Recording Secretary and Newsletter Editor, respectively.

ASME is currently implementing a major reorganization throughout the Society, and there were certainly challenging times for AMD in recent months. With resolve and dedication, the EC has successfully pushed the Division's interests and goals within ASME on Division finances, conference organization, journal oversight (JAM and AMR), awards maintenance, and Haythornthwaite Research Initiation Grant and Graduate Student Travel Award programs. I am confident that the Division will continue on its success in the coming years.

IMECE 2014

IMECE 2014 was held in Montreal, Canada, November 14-20. Arun Shukla and Pradeep Sharma were the Chair and Vice-Chair, respectively, of Track 12, Mechanics of Solids, Structures and Fluids, the traditional forum for AMD, which had nearly 400 presentations. In addition, AMD co-sponsored symposia in Tracks 3, Biomedical and Biotechnology Engineering, and 4, Dynamics, Vibration and Control. The Medalists' session included the Drucker medalist, **Lallit Anand**, "Plasticity of metallic glasses and granular materials: constitutive equations and strain localization"; the Ted Belytschko Applied Mechanics Award recipient, **Glaucio Paulino**, "Polygonal Finite Elements for Dynamic Cohesive Fracture Simulations"; and the Thomas K. Caughey Dynamics Award recipient, **Alexander Vakakis**, "Intentional Nonlinearity for Targeted Energy Transfer and Passive Energy Management in Mechanical and Structural Systems". The Koiter Lecture was delivered by **Guruswami Ravichandran**, "Experimental determination of a representative texture and insight into the range of significant neighbouring grain interactions via orientation and misorientation statistics".

The Applied Mechanics Division Annual Honors and Awards Banquet and Ceremony was well attended. A highlight of the evening was **Bob McMeeking's** Timoshenko Medal acceptance speech, delivered in a traditional Scottish attire. Others receiving Society-level awards included Guruswami Ravichandran, the Warner T. Koiter Medalist, and Lallit Anand, the Daniel C. Drucker Medalist. Those receiving Division-level awards were Alexander Vakakis, the Thomas K. Caughey Awardee; Glaucio Paulino, the Ted Belytschko Applied Mechanics Awardee; and **Katia Bertoldi and Ryan S. Elliott**, the Thomas J. R. Hughes Young Investigator Awardees. The AMD-Haythornthwaite Research Initiation Grant (HRIG) Program had a highly successful year, with 40 proposals, the largest number ever, submitted for review by the members of the AMD EC. In view of the large number of high quality proposals, Professor **Jennifer Haythornthwaite** of the Johns Hopkins University, representing the Haythornthwaite Foundation, graciously offered to support five HRIG awards, up from three supported by the Foundation in previous years, with the expectation that AMD will provide a matching grant in future years. The five successful proposals were authored by **Shengqiang Cai** (UCSD), "Electro-actuation of Nematic Liquid Crystal Elastomers"; **Sevan Goenezen** (Texas A&M), "Feasibility to Characterize Heterogeneous Subsurface Material Properties from Surface Deformations"; **David Hennan** (Brown), "Toward Predictive Models of Real-World Granular Flows"; **Kejie Zhao** (Purdue), "Chemomechanics of Electrodes in Li-ion Batteries Probed by In situ Nanoindentation"; and **Hongyan Yuan** (University of Rhode Island), "A Mechanobiochemical Model of Cell-Microenvironment Interactions for Rational Design In Tissue Engineering". The Haythornthwaite Travel Grant Award Program, sponsored by the Haythornthwaite Foundations, once again funded 10 proposals from Graduate Students. The best of those 10, as judged by the EC, was then given the Best Student Paper Award by the AMD. The recipient was **Huanyu Cheng** (Northwestern), "Elastomer Surface with Directionally Dependent Adhesion Strength". Another highlight of the evening was that Jennifer Haythornthwaite attended the Banquet and personally presented the HRIG and Student Travel Awards.

McMAT 2015

The 2015 Applied Mechanics and Materials Conference (McMAT 2015), with the Materials Division taking the lead, will have successfully taken place on June 29-July 1, 2015, Seattle in Seattle, WA, by the time this Newsletter is published. **Junlan Wang** serves as the conference chair. A total of 436 presentations are expected, spread over 25 symposia and 79 sessions. This includes four plenary speakers. Members of AMD have been encouraged to participate in the meeting, which will cycle back to AMD in 2019.

IMECE 2015

Preparations are well under way for IMECE 2015, to be held in Houston, Texas, November 13-19. Pradeep Sharma and Bala Balachandran will serve as chair and co-chair, respectively, of Track 12, Mechanics of Solids, Structures and Fluids, and more than 500 abstracts and papers have been received to date. The following AMD members will be recognized at the AMD Honors and Awards Banquet and Ceremony on Tuesday, November 17:

Michael Ortiz (Caltech)	Timoshenko Medal
K. Ravi-Chandar (University of Texas at Austin)	Drucker Medal
Kaushik Battacharya (Caltech)	Koiter Medal
James R. Barber (University of Michigan)	Ted Belytschko Applied Mechanics Award
Gábor Stépán (Budapest U. of Technology and Economics)	Thomas K. Caughey Dynamics Award
Thao (Vicky) D. Nguyen (Johns Hopkins)	Thomas J. R. Hughes Young Investigator Award

Please join the members of the AMD EC in congratulating the awardees.

ICTAM 2016

Planning for the 24th International Congress on Theoretical and Applied Mechanics, August 21-26, Montreal, Canada is under way. Members of AMD are encouraged to participate in the meeting.

Journal of Applied Mechanics

Yonggang Huang, Editor of JAM, continues his efforts to increase quality and speed up the publication process. The review time has been reduced to an average first decision within 15 days and average final decision around 30 days. An annual best paper award for young authors was established in 2013, sponsored by the AMD. The 2014 recipients, announced at IMECE 2014, were **Markus Buehler** (MIT), **Katia Bertoldi** (Harvard) and **Oscar Lopez-Pamies** (University of Illinois at Urbana-Champaign).

Applied Mechanics Reviews

Harry Dankowicz, Editor of AMR, has made significant progress in revamping the journal since 2012. In 2014, AMR published six issues totaling 457 pages. Special initiatives included articles developed in collaboration with ASME Journals of Pressure Vessel Technology (JPVT) and Vibration and Acoustics (JVA), Society of Engineering Science, Midwest Mechanics Seminar Series, and organizers of a Nordic Institute of Theoretical Physics summer school. The AMR Podcast series, launched in 2014 by AMR and ASME Digital Collection, features full-length, edited audio interviews with members of the applied mechanics and engineering science research community. A biannual paper award was established in 2014 for AMR authors in memory of Lloyd Donnell, the first editor of AMR. The recipients of the inaugural award, announced at IMECE 2014, were **Nathan Sniadecki**, **Marita Rodriguez** and **Patrick McGarry**, for the paper "Review on Cell Mechanics: Experimental and Modeling Approaches", published in the November 2013 issue of AMR.

Haythornthwaite Foundation Awards

The Haythornthwaite Foundation has pledged continuous support in 2015 of the HRIG program for young faculty and Student Travel Award program for students. In 2014, the EC received 40 proposals for HRIG and awarded five, all funded by the Foundation, with the expectation that AMD will provide a matching grant in future years. The awardees, Shengqiang Cai (UCSD), David L. Henann (Brown), Kejie Zhao (Purdue), Sevan Goenezen (Texas A&M), Hongyan Yuan (URI), will report their work at IMECE 2015. The EC also awarded 10 Student Travel Grants. Out of the 10 Travel Grants, the Best Paper Award went to Huanyu Cheng of Northwestern University. With

continuous support from the Foundation, the EC is planning to again award 5 initiation grants and 10 student travel awards in 2015. Both award programs will be announced via direct e-mail to AMD members as well as on the ASME web site. Awardees will be announced at IMECE 2015.

Technical Committees

The Technical Committees operating under the auspices of the AMD will continue to be encouraged to remain active. The primary functions of the committees include proposing and organizing symposia at IMECE and other meetings, providing nominations for the Society- and Division-level awards as well as the Haythornthwaite award programs, and maintaining a significant web presence.

Closing Remarks

Let me close by thanking everyone who contributed to the continued success of AMD during the past year. I am particularly grateful to all of the current members of the AMD EC for their support; to **Donna Mojahedi** for administrative support; to the editors and associate editors of JAM and AMR for making the AMD journals again the top journals in our field; to the organizers of the many symposia at IMECE and other AMD-related conferences for their invaluable service; to ASME staff **Ty Booker, Stacey Cooper, Deidra Hackley, Elio Manes, Jacinta McComie-Cates, and Kristine Reilley** for their assistance; and to everybody who support the AMD through attendance at conferences, publishing and reviewing technical papers, and participating on Technical Committees.

Huajian Gao, 2014- 2015

Chair, Applied Mechanics Division

THE 2014 AMD AND ASME SOCIETY AWARDS

TIMOSHENKO MEDAL

Robert M. McMeeking



The Timoshenko Medal was established in 1957 and is conferred annually in recognition of distinguished contributions to the field of applied mechanics. Instituted by the Applied Mechanics Division, it honors Stephen P. Timoshenko, world renowned authority in the field, and it commemorates his contributions as author and teacher.



The 2014 Timoshenko Medal was awarded to Robert M. McMeeking, Tony Evans Professor of Structural Materials and Professor of Mechanical Engineering, University of California, Santa Barbara for “pioneering contributions to broad areas of applied mechanics including nonlinear fracture mechanics, transformation toughening, mechanics of composites, powder consolidation, and ferroelectric fracture and constitutive modeling.” The acceptance speech that follows was delivered at the Applied Mechanics Honors and Award Banquet at the 2014 ASME International Mechanical Engineering Congress held in the Palais des Congrès de Montréal, Quebec, Canada, on November 18th, 2014:

Now I can say whatever I like in my Timoshenko Lecture and it won't matter – because you will only remember Ken Liechti playing the bagpipes and, perhaps, the kilts. Thank you Ken.

I wish to thank those who are responsible for awarding me the Timoshenko Medal. That includes those who nominated me and who wrote the letters of support. Thank you – as John Willis said in his Timoshenko Lecture – for exaggerating my case. I'd also like to thank the Timoshenko Medal Committee. I am very grateful to you for seeing fit to honor me with this award, certainly the summit of honors in applied mechanics – the one that young researchers in our field dream of receiving one day. To actually receive it is the crowning point of my career.

I appear to be the first Scot to be awarded the Timoshenko Medal, and thus I am probably the first person to accept it wearing a kilt. In fact I am probably the first to give this speech in what some call a skirt – though I trust that will become commonplace in the future.

In our field we are happy to give a plenary lecture in front of a thousand conference attendees, or to give a controversial talk on applied mechanics in a wolves' lair inhabited by your fiercest critics. But when we are confronted with having to give an after dinner speech to several hundred friends, you quake in your boots. So the first thing you do is to go to iMechanica and read a sampling of speeches by previous recipients.

After this you realize that you cannot possibly give a speech as erudite, wise and informative as those that went before. In addition, you come to the conclusion that everything that can be said about applied mechanics has been said before in Timoshenko Lectures, and all the amusing anecdotes are someone else's such as Jock Eshelby's, who told this one in his 1977 speech. He arrived at the ASME

conference to receive the medal, but at the registration table he found a brochure stating that it was to be awarded to Ras Lee. At that point he decided that ASME had come to their senses and found a recipient for the medal who actually deserved it, so he decided to go home. Jock was on his way back to the airport before he realized that the brochure was from the year before! Now, with the medal in hand, I can set aside my fears that what Jock thought had happened to him hasn't happened to me!

Like many researchers in this room, I learned strength of materials from the classic books by Timoshenko, and, of course, in advanced classes we studied elasticity from Timoshenko and Goodier, and plates and shells from Timoshenko and Woinowsky-Krieger. However, I never met Timoshenko. My closest connection to Timoshenko is that I was a post-doc with E.H. Lee, who was Timoshenko's PhD student in the 1930s at Stanford. Now I wish I could recall all the stories Ras told me about his advisor, but what I do remember is that in the Durand Building at Stanford there was a Timoshenko Room filled with his books and memorabilia, I think including his own Timoshenko Medal. The room was used occasionally for group meetings, for discussions with visitors, and committee meetings – all presided over by a bronze bust of Timoshenko on the credenza. I often sat alone in the room for many a pleasant hour reading his work and his autobiography.

The tradition in Scotland when I was a student was to attend the local university, and in my case it was Glasgow University. I was very fortunate that at it was a time when Glasgow was at one of its peaks in regard to mechanics. I studied mathematics under Ian Sneddon, and took classes in mechanics and materials from John Orr, David Brown and Alec Mackenzie and John Hancock of Hancock-Mackenzie fame. All of these fine engineers mentored me and guided my development. And, of course, I had Ken Liechti as a colleague and friend.

While at Glasgow, I did a piece of work that probably has had more impact than anything else I did subsequently. In the summer of 1971 I worked for Colin Dodds, a lecturer who was interested in vehicle suspension dynamics. He needed road data to program into an MTS machine that he used to impose dynamic loading on car suspensions, so he sent the only people lower on the academic ladder, me and another fellow, out to survey the A726 road from East Kilbride to Strathaven. We were tasked with identifying every bump, cant, slope and slant along a five mile stretch of the road. No high visibility vests or cones in the road for us! Colin subsequently moved to MTS in Minneapolis and used our data for the system they use in the design and testing of vehicle suspensions. So now you know that when you are driving in your Chevrolet or Dodge, and you get carsick from the design of the suspension, that it is a minor road in Scotland and my data that are making you unwell.

In my final year at Glasgow I went to see Ian Sneddon for advice on graduate school and he said I should go to Brown. He told me "There's a gie canny worker there ca'd James Rice da'ing grand things in nonlinear fracture mechanics. I dinnae understand' it masel but it's braw stuff." [1]. Professor Sneddon had a strong Glasgow accent.

So I went to Brown.

Brown at that time was also at one of its peaks – in the case of Brown solid mechanics there are endless arguments regarding when the best period was – to most of us it is simply always superior. In the '70s Brown had a score of workers in mechanics whose names you would recognize---and that was just the faculty, never mind the graduate students. I was part of a fantastic cohort of graduate students whose names you would recognize as well. I counted myself lucky to be in their company. To all the faculty and students at Brown I say a profound thank you.

And of course, Jim Rice was inspirational as a PhD supervisor. He turned my vague understanding of fracture mechanics, and other subjects, into a firm grasp of detail and context, though it wasn't easy

for him. He taught me to be effective at research, by his example of connecting applied mechanics to wide ranging, important problems in all sorts of fields.

It was an exciting time in fracture mechanics, with efforts underway to develop the nonlinear methods for components and specimens with extensive yielding. Through my involvement I met and interacted with many fascinating researchers – among them George Irwin, Frank McClintock, Paul Paris, Jim Begley and John Landes. I mentioned to my Advisor that I thought it was a very interesting time to be in fracture mechanics – Jim quickly deflated my enthusiasm by his reply that the subject was not what it used to be and that the really exciting time for it was in the sixties.

My next stop was Stanford. I mentioned before that I was a post-doc with Ras Lee, where I worked on applying large deformation finite element methods to plasticity problems such as metal forming. My title was actually Acting Assistant Professor. I had to tell people that I did not teach dramatic arts. Stanford was also a dream come true for a young researcher in applied mechanics – at that time it was staffed by many famous researchers. When I expressed my gratitude to those Stanford colleagues for being able to take part in the exciting work going on there---the reply was the same as Jim's – you should have been here 10 years ago.

I got to drop the “acting” and become a real Assistant Professor at the University of Illinois at Urbana-Champaign. Back home my parents were disappointed for me, as they thought I had wanted to be a professor, not someone's assistant. U of I was a fantastic place to start my faculty career. Dan Drucker was Dean of Engineering and Dick Shield was Head of Theoretical and Applied Mechanics. Dan taught me a lot and liked nothing better than to talk solid mechanics – I suppose it was a diversion from being Dean. I also got on famously with Dick Shield – mainly because he was born near Newcastle in England, and he thought of Scotland as merely a bit of Northumberland that had got away. When I arrived, the Department was also full of colorful faculty members, including Herb Corten, George Costello, Jo-Dean Morrow, Marv Stippes, and George Sinclair among others. Again, it was such a stimulating place to work that I couldn't miss.

Champaign-Urbana also brought me into contact with Fred Leckie, a fellow Scot who became a lifelong friend and mentor, and who did a tremendous amount of important work on high temperature solid mechanics. Fred was a fantastic example to me through his enthusiasm and interest in anything that came along in solid mechanics and materials. He was also amusing company with a fund of anecdotes, such as the time he was involved in engineering work in the 1940s to repair bomb damage to Tower Bridge in London. He was sent up with his boss to inspect the damage and had to go out on a narrow girder to see what repairs were needed. He had no safety harness or netting to catch him if he fell into the Thames, so when Fred crawled out on the girder, he did so very slowly. He got out a certain distance looking fixedly at the girder, and not ahead or at the river below, only to have come into view a pair of black dress shoes topped by spats. Fred's boss had gone across the bridge and up the other tower and had walked out on the girder to where Fred was to ask Fred what he was playing at! The most frightening experience I've faced in my work was deciding whether or not to duck under a table when UCSB was rocked by a 4.0 earthquake!

At more or less the same time as I joined it, the TAM Department at Illinois recruited former Brown students John Rudnicki, Kyung-Suk Kim and other young faculty members. And Larry Bergman too. We had an enjoyable and productive time, because Dan Drucker and Dick Shield had organized things so that the younger faculty could thrive and focus on research. I managed to acquire several fantastic graduate students there, including Panos Charalambides, Nick Aravas and Petros Sofronis. That Illinois was tremendously stimulating is illustrated by two out of many examples. The first is that Howard Birnbaum got me interested in hydrogen embrittlement. Regarding the second, one day

someone, I forget who, from ceramic engineering asked me why electrical breakdown in ceramics and other materials happens at much lower voltages than conduction band electron avalanching would predict. I became extremely interested and thought it must be associated with flaws in the microstructure. I worked out various problems that involved cracks and electric fields in dielectric materials; one thing led to another and I got into modeling ferroelectrics, which then later got me into the field of lithium-ion batteries. Thirty-five years later I never have figured out exactly why the breakdown strength of insulators is as low as it is!

In 1980, I attended an NSF solid mechanics workshop in Cincinnati on materials science and met someone who was to have a profound influence on my life. There was this fascinating Welshman, Tony Evans, who was terribly excited about toughening mechanisms in ceramics, and had a particularly interesting one on dilatant crack tip phase transformations. I told Tony I thought that I could work out the mechanics involved, and when I got back to Illinois, I did so, with the result that over the years with Tony thereafter I became interested in many diverse problems in materials science.

By this time, 1984 – 1985, the materials revolution in solid mechanics was already well developed, but some of us thought that more could be done and that dedicating a program to interdisciplinary work at the intersection of mechanics and materials science would be a good idea. Robert Mehrabian, Dean of Engineering at UC Santa Barbara, offered us a superb opportunity to design a new department from scratch. Having grown substantially in the previous few years under Mehrabian's watch, UCSB had the vision and resources to take a new approach. The result was that, led by Tony Evans, we were able to assemble a group of like-minded individuals who thought that interdisciplinary work, with a large dose of solid mechanics, was the right way to go for the subject of materials science, at least in the relevant areas of structural and functional materials. We pulled together Manfred Rühle, Fred Lange and myself to join Bob Odette, Gene Lucas, Carlos Levy and Xanthippi Markenscoff who were already at UCSB. Later David Clarke and Fred Leckie joined us, and Frank Zok and Zhigang Suo came in as junior faculty members. More recently Teresa Pollock has joined the fray and on the mechanics side Glenn Beltz and Matt Begley. Of course, we have lost some over the years – Manfred was grabbed by Max Planck, Xanthippi moved to UCSD, Zhigang was tempted into the hands of Princeton and then later Harvard, and David too ended up there. Of course Tony drifted away to those locations too ... but then he drifted back – fortunately for us.

Tony's tragic early death deprived us of an inspiring figure who was also a tremendous mentor, a fantastic collaborator and a dear friend. He, like others in the UCSB group, was a tremendous source of ideas and interesting and important problems – we in mechanics have made hay on the opportunities that our materials colleagues have brought to us. I like to think that I on the mechanics side contributed something to their ability to make progress on problems in materials science of importance to them.

The team that tackled the effort to do interdisciplinary work on structural and functional materials was by no means confined to UCSB. Over the years we had the pleasure of interacting with and hosting many superb collaborators. Largely funded by DARPA and then later by ONR, we had long run of programs involving John Hutchinson, Jim Rice, John Hirth, Mike Ashby, Haydn Wadley, Norman Fleck, Vikram Deshpande, and many others from universities, national labs and companies. I have also had many tremendous students at UCSB, including Chad Landis, Matt Begley, Chris Lynch, Mike Crowell, Annie Ruimi and Amit Pathak. My post-docs in that time have been superb too, such as Gang Bao, George Jefferson, Sergio Lucato and Patrick McGarry.

I have mentioned lots of names during this speech, but that has a purpose. It is to enable me to thank them all for having contributed to making it possible for me to achieve what I have. While my students

and post-docs have been most important to my success, I've also benefitted immeasurably from my interaction over the years with all the other researchers whom I've mentioned.

Now I should draw a couple of conclusions of a philosophical nature from my ramblings, though these will hardly be profound or original. One relates to people, and the fact that I have interacted and collaborated with a large number of them. This demonstrates that doing applied mechanics is a great way to get to know fascinating people who are also very nice. But on a more serious note, my experience shows that a good strategy for success in applied mechanics is to get to know and interact with a lot of good people in a diversity of fields. If you do that, the ideas and opportunities for doing good, interesting work in applied mechanics will develop from the interactions that result.

In contrast, I have a mixed message on the question of the status of applied mechanics that many of my predecessors in this speech have wrestled with. In my judgment the first order of business is that applied mechanics must continue to contribute in an important way for it to remain relevant---as it has strongly shown itself to be over and over again. This often means forming a partnership with other disciplines, so that work of significant impact can be achieved, whether it is in materials science, geophysics or biomedicine and bioengineering to cite a few recent examples where mechanics has played a strong role. As others have pointed out in their Timoshenko lectures, a consequence of partnership is that the all the credit for the success can be grabbed by the partner discipline, while the contributions from applied mechanics are obscured and not apparent. Though I think the risk well worth taking, because the opportunities accruing out of partnership with other disciplines are too great to ignore, we must keep reminding everyone, including politicians, university administrators and funding agencies, that applied mechanics is still having great successes and contributing in a big way.

Then there is the question of the closure of applied mechanics departments. I think it cuts both ways. Collaborative, inter-disciplinary research can be invigorated by the intimacy that arises when applied mechanics is merged into a larger unit. On the other hand, robustness and strength come from diversity, and the loss of departments has undermined this. Different groups doing different things in different ways in different locations has its benefits.

Well, I have tried your patience for long enough. I just wish to end by once more expressing my thanks to all who have helped me, supported my efforts and collaborated with me over the years. And thanks to you for listening to me. And thank you for awarding me the Timoshenko Medal.

[1] His advice translates as "There's a very clever worker called James Rice doing grand things in nonlinear fracture mechanics. I don't understand it myself, but it's great stuff."

Robert M. McMeeking
Tony Evans Professor of Structural Materials
Professor of Mechanical Engineering
University of California, Santa Barbara

DANIEL C. DRUCKER MEDAL

Lallit Anand



The Daniel C. Drucker Medal was established in 1997 and is conferred in recognition of distinguished contributions to the field of applied mechanics and mechanical engineering through research, teaching and service to the community over a substantial period of time. Instituted by the Applied Mechanics Division, the medal honors Dr. Daniel Drucker and commemorates his service to the profession.



The 2014 Daniel C. Drucker Medal was awarded to Professor Lallit Anand, Warren and Towneley Rohsenow Professor of Mechanical Engineering at MIT, for “*seminal contributions to the formulation of constitutive theories for the plastic response of a variety of engineering solids, including polycrystalline metals, metallic glasses, glassy polymers, and granular materials.*”

WARNER T. KOITER MEDAL

Guruswami
Ravichandran



The Warner T. Koiter Medal, established in 1996, is bestowed in recognition of distinguished contributions to the field of solid mechanics with special emphasis on the effective blending of theoretical and applied elements of the discipline, and on a high degree of leadership in the international solid mechanics community.



The award was funded by the Technical University of Delft, The Netherlands, to honor Warner T. Koiter for his fundamental work in nonlinear stability of structures in the most general sense, for his diligence in the effective application of these theories, his international leadership in mechanics, and his effectiveness as a teacher and researcher.

The 2014 Warner T. Koiter Medal was given to Guruswami Ravichandran, John E. Goode, Jr., Professor of Aerospace and Professor of Mechanical Engineering at Caltech, for “*outstanding scientific, engineering, and mentoring contributions in the areas of ultra-high strain rate mechanics of ceramics and metals, and pioneering and innovative experiments to advance our understanding of coupled phenomena in the fields of smart materials and cellular mechanics.*”

TED BELYTSCHKO APPLIED MECHANICS AWARD

Glaucio Paulino

The Ted Belytschko Applied Mechanics Award is bestowed to an outstanding individual for significant contributions in the practice of engineering mechanics. The contributions of this individual may result from innovation, research, design, leadership or education. The award was established in 1988 and was renamed the Ted Belytschko Applied Mechanics Award in 2008.



The 2014 Ted Belytschko Applied Mechanics Award was conferred on Glaucio H. Paulino, Raymond Allen Jones Chair, Professor of Civil and Environmental Engineering at the Georgia Institute of Technology, for *“seminal contributions in multiscale fracture mechanics and cohesive failure of existing and emerging materials; and for leadership at the national level as NSF program director for mechanics of materials; and for sustained contributions to the CONCAM committee of ASME.”*

THOMAS K. CAUGHEY DYNAMICS AWARD

Alexander Vakakis

The Thomas K. Caughey Dynamics Award was established in 2008 and is conferred in recognition of an individual who has made significant contributions to the field of nonlinear dynamics through practice, research, teaching and/or outstanding leadership.



The 2014 Thomas K. Caughey Dynamics Award was conferred on Alexander Vakakis, W. Grafton and Lillian B. Wilkins Professor of Mechanical Engineering at UIUC, for *“his accomplishments in Nonlinear Dynamics, in particular his pioneering research in the area of Nonlinear Normal Modes and their influence on the global dynamics of nonlinear systems, as evidenced by his outstanding publication record and impact on the field.”*

THOMAS J.R. HUGHES YOUNG INVESTIGATOR AWARD

Katia Bertoldi

Ryan Elliot



The Thomas J.R. Hughes Young Investigator Award recognizes special achievement for young investigators in Applied Mechanics. The nominees must not have reached their 40th birthday at the time of nomination. The award was established in 1998 and renamed the Thomas J.R. Hughes Young Investigator Award in 2008.



The 2014 Thomas J.R. Hughes Young Investigator Award was given to two researchers: Katia Bertoldi, John L. Loeb Associate Professor of the Natural Sciences at Harvard University, *“significant*

contributions to the theory and simulation of the mechanics of soft materials. In particular, she uses large deformation and instabilities to drastically change the properties of soft materials in response to external stimuli such as applied forces and electric fields. Possible applications include acoustic switches, robots capable of changing shape based on the terrain, and waveguides that are switchable between negative and positive refractive indices.”; Ryan Elliot, Associate Professor of Aerospace Engineering & Mechanics and Russell J. Penrose Faculty Fellow at the University of Minnesota for “pioneering work in the area of atomistic simulations of shape memory alloys using modern bifurcation theory and stability to quantify the thermally and stress-induced martensitic transformations in shape memory alloys.”.

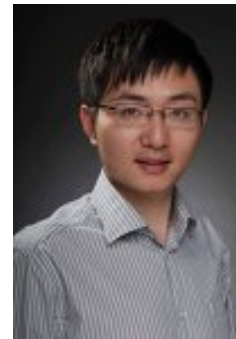
2014 HAYTHORNTHWAITE FOUNDATION AWARDS

Research Initiation Grant Awards

In 2011 the Applied Mechanics Division, through the generosity the Haythornthwaite Foundation, established a new divisional award, the **Haythornthwaite Research Initiation Grant**. This new grant targets university faculty that are at the beginning of their academic careers engaged in research in theoretical and applied mechanics. The five recipients of the 2014 grants are Shengqiang Cai (UC, San Diego), Sevan Goenezen (Texas A&M University), David L. Henann (Brown University), Hongyan Yuan (University of Rhode Island), and Kejie Zhao (Purdue University). The winning project titles and descriptions are provided in what follows:

Shengqiang Cai

Electro-actuation of Nematic Liquid Crystal Elastomers. The objective of this project is to realize large deformations in liquid crystal elastomers (LCEs) actuated by low voltage and large electrostrictions in LCEs. Different from most elastomers, LCEs are rubbery networks composed of long crosslinked polymer chains with tethered mesogenic monomers. In the proposed research, we are going to take advantage of the strong coupling between the deformation and orientation of liquid crystal molecules in LCEs to obtain unique electro-mechanical deformation mode in LCEs.



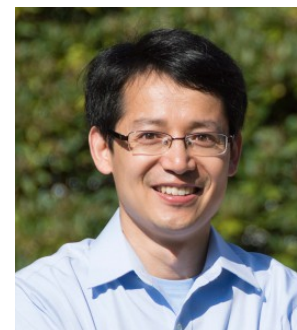
Feasibility to Characterize Heterogeneous Subsurface Material Properties from Surface Deformations. We have recently shown that inverse problems can be uniquely solved for the non-homogeneous elastic modulus using only surface deformations fields in a hypothetical study. The objective of this project is to provide a proof of concept using experimental data. More precisely, a set of digital camera images will be used to collect images of a non-homogeneous sample before and after inducing a gentle deformation (for example palpation or bending). The 3D surface displacement fields can be determined from these digital images and used to solve an inverse problem for the non-homogeneous elastic modulus. This grant is being used to set up a laboratory and purchase equipment and materials to collect experimental data. This research project has a great impact in that it provides a low cost solution to view inside heterogeneous materials without the need to take it apart and damage it.



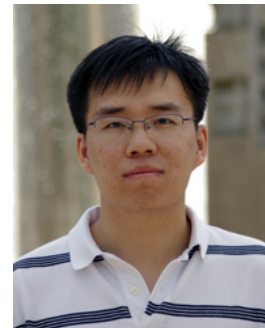
Toward predictive models of real-world granular flows. Flowing granular media play an integral role in a wide variety of industries, and predictive continuum models of granular flow are crucial for improved engineering design. The objective of this work is to build continuum models for granular flow that go beyond the simple idealized granular system - a dry collection of quasi-monodisperse, spherical grains - to real-world granular materials. Specifically, we focus on wet granular media, which contain a diffusing pore fluid, and polydisperse granular systems, which undergo size-segregation. The grant is being used to build a set of experimental granular flow apparatuses that will be used to motivate, calibrate, and validate the modeling work.



A mechanobiochemical model of cell-microenvironment interactions for rational design in tissue engineering. The objective of this research is to develop a finite-element-based computational model that can predict the spatiotemporal evolution of micro-tissue morphology in engineered microenvironments. This computational model can potentially be applied to computer-aided rational design in 3D bioprinting to optimize mechanical, geometrical, and biochemical properties of extracellular matrices and 3D positioning of cells. This grant is being used to setup a laboratory with high performance computers to perform large-scale simulations and data analysis for model development and validation.

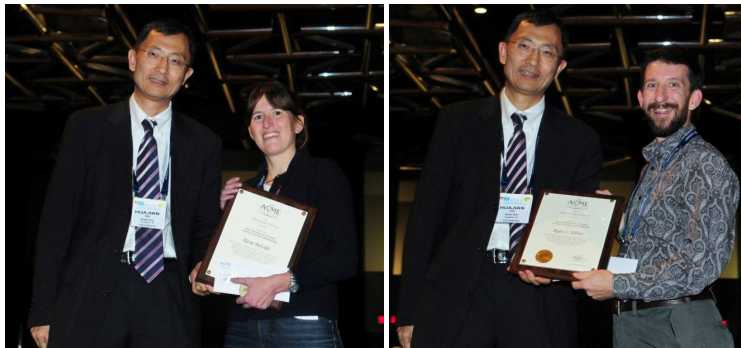


Chemomechanics of Electrodes in Li-ion Batteries Probed by In situ Nanoindentation. The objective of the research is to conduct nanoindentation experiments on the electrodes of Li-ion batteries during the in-situ electrochemical reactions. The operation of batteries is extremely sensitive to the work environment – a trace of oxygen and moisture can cause numerous undesired side reactions. In contrast, most of mechanical testing equipments are open systems with bare environment control. The grant is being used to integrate a commercial nanoindenter into an argon-filled glovebox. The measurements will directly validate the continuum theories on the concurrent mechanical and electrochemical behaviors of electrodes.



Student Travel Grants and Best Paper Awards

The Haythornthwaite Travel Grant Award Program for Graduate Students, sponsored by the Haythornthwaite Foundations, awarded 10 travel grants. The best of those 10, as judged by the EC, was given the Best Student Paper Award by the AMD. The recipient was Huanyu Cheng (Northwestern University) for his paper titled “*Elastomer Surface with Directionally Dependent Adhesion Strength*”.



Presentation of the Society and Division Awards at the ASME-AMD Banquet on November 18th, 2014. Bottom figure: Jennifer Haythornthwaite together with Huajian Gao presenting a Research Initiation Grant to Shengqiang Cai.

NEWS FROM THE TECHNICAL COMMITTEES

The reports that follow are from some of the Chairs of the Technical Committees of the Division of Applied Mechanics. If you are interested in the activities of a particular committee, please feel free to contact the Chair.

Instability in Solids and Structures Committee

The Instabilities in Solids and Structures (IiSS) Technical Committee has been very active during the 2014-2015 year. The committee is Chaired by Ryan S. Elliott of the University of Minnesota and Vice-Chaired by Edmundo Corona of Sandia National Laboratory. During the past year, the committee has organized sessions at USNCTAM-2014 in East Lansing and the ASME-IMECE-14 in Montreal. At USNCTAM-2014 the committee organized a minisymposium with six sessions and 30 presentations:

(S11) Instability in Solids and Structures

Tuesday A: 6 presentations
Tuesday B: 5 presentations
Tuesday C: 4 presentations
Wednesday A: 6 presentations
Wednesday B: 5 presentations
Wednesday C: 4 presentations

At ASME-IMECE-14 the committee organized an MS with five sessions and 25 presentations:

(12-34) Instability in Solids and Structures

12-34-1 Instability in Solids and Structures I: 5 presentations
12-34-2 Instability in Solids and Structures II: 5 presentations
12-34-3 Instability in Solids and Structures III: 5 presentations
12-34-4 Instability in Solids and Structures IV: 6 presentations
12-34-5 Instability in Solids and Structures V: 4 presentations

These sessions were well attended and contributed to the overall success of these events. The committee has organized a minisymposium at McMat-2015 in Seattle with five sessions and 26 presentations and is organizing a minisymposium for ASME-IMEME-15 at Houston and expects to have 30 presentations.

The symposia organized by the committee have been very successful and regularly attract high-quality presentations and are some of the biggest symposia at these events.

We welcome members of the applied mechanics community to participate by soliciting and actively recruiting high-quality contributions to the symposia sponsored by the Instabilities in Solids and Structures Committee.

Ryan S. Elliott, Chair

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Edmundo Corona, Vice Chair

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Composite Materials Committee

Chair: Ioannis Chasiotis, University of Illinois at Urbana-Champaign (2013-2015)
Vice Chair: Valeria La Saponara, University of California, Davis (2013-2015)

In 2014, the AMD Composite Materials Committee Meeting was held on Tuesday, November 18, 2014, at 12-12:50 pm, at the ASME International Mechanical Engineering Conference & Exposition in Montréal, Canada. The meeting was chaired by Professor Valeria La Saponara. 15 committee members were in attendance at the meeting. Associate Professor Caglar (pronounced “Chalar”) Oskay, from Vanderbilt University, was the sole candidate to the position of the Vice Chair, and was elected unanimously. His term begins on July 1, 2015.

The following symposia were proposed for IMECE 2015:

1. Multi-Field Studies in Heterogeneous Materials: Experimental, Theoretical and Numerical Approaches, organized by Rani El-Hajjar, Valeria La Saponara, Anastasia Muliana, Arun Srinivasa, and Wahyu Lestari, and sponsored by AMD and the Materials Division.
2. A Short Course on Integrated Computational Materials Engineering (ICME): A Transformational Discipline, organized by Natasha Vermaak and Evan Pineda, and sponsored by AMD, the Aerospace Division and the Materials Division.
3. Multiscale Models and Experimental Techniques for Composite Materials and Structures, organized by Caglar Oskay, and Evan Pineda, and sponsored by AMD, the Aerospace Division and the Materials Division.
4. Processing and Performance of Nanocomposites, organized by Davood Askari, and Mohammad Naraghi, and sponsored by AMD and the Materials Division.
5. Nanocomposite Fibers, organized by Hassan Mahfuz, Mujibur Khan, Ashfaq Adnan, and sponsored by AMD and the Materials Division.
6. Multifunctional and Micro/Nano-structured Materials: Modeling and Characterization, organized by Xin-Lin Gao, and sponsored by AMD and the Materials Division.
7. Advanced Multiscale Materials, Natural Fiber- and Metal-based Biomaterial Composites, organized by Emmanuel Ayorinde, Joon Sang Lee, and Gururaj Kathawate, and sponsored by the Composite Materials and the Elasticity Technical Committees of the AMD.
8. Nanostructured Materials for Energy Applications, organized by Gobinda C. Saha, and Mrinal C. Saha, and sponsored by AMD and the Materials Division.
9. Time-dependent Materials and Their Composites: Experimental, Theoretical and Numerical Studies organized by Anastasia Muliana, Ioannis Chasiotis, and Daniel Tscharnuter, and sponsored by AMD and the Materials Division.
10. Mechanics and Design of Cellular Materials, organized by Jaehyung Ju, Jongmin Shim, Muhammad Ali, and Byung-Ho Choi, and sponsored by AMD and the Materials Division.

Ioannis Chasiotis, Chair

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Valeria La Saponara, Vice Chair

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Elasticity Committee

Chair: Hanqing Jiang

The Technical Committee on Elasticity in the Applied Mechanics Division of ASME has been continuing to dynamically work as a group to promote this field through organizing sessions and symposia at national and international conferences. The Chair Hanqing Jiang will continue working with the active members in this committee to promote the research in the general area of elasticity

by organizing symposia and nominating fellows/awards. The Chair Hanqing Jiang hosted the committee meeting on Nov. 18th, 2014 in Montreal, Canada. In 2014, this TC has sponsored the following symposia:

- i) Symposium on Multiphysics Simulations and Experiments for Solids (Organizers: Hanqing Jiang, Dong Qian)
- ii) Hybridization of Materials for Functional Structures, Devices and Systems: Mechanics, Materials, and Manufacturing (Organizer: Cunjiang Yu, Jianliang Xiao, Huiyang Fei)
- iii) Mechanics of Adhesion and Friction (Organizers: Jianliang Xiao, Frank DelRio, Yong Zhu)

The committee also elected Dong Qian (current Vice Chair) to be the Chair in 2015.

The Technical Committee is organizing several symposia for the 2015 ASME IMECE.

We welcome dynamic members of the applied mechanics community to participate in the activities of the Elasticity Technical Committee.

Hanqing Jiang, Chair
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Committee on Fluid-Structure Interaction

Another good year for the Committee on Fluid-Structure Interaction (CFSI). We focused on the following activities:

CFSI organized the following conferences, short courses, and minisymposia at international conferences:

1. Yuri Bazilevs (UC San Diego), Kenji Takizawa (Waseda University), and Tayfun Tezduyar (Rice University) gave a two-day short course on Computational Fluid-Structure Interaction on July 19-20, 2014 in Barcelona, Spain. The short course was offered in connection with the 11th World Congress on Computational Mechanics (WCCM XI). For more details, visit <<http://www.tafsm.org/BarcFSI2014/>>.
2. Three minisymposia (Biomedical Fluid Mechanics and FSI; Flows With Moving Boundaries and Interfaces; Fluid-Structure Interaction) took place at the 18th International Conference on Finite Elements in Flow Problems (FEF 2015) in Taipei, Taiwan on March 16-18, 2015. Organizers were Kenji Takizawa, Yuri Bazilevs, and Tayfun Tezduyar.
3. Ming-Chen Hsu (Iowa State University), Baskar Ganapathysubramanian (Iowa State University), and Yuri Bazilevs organized a minisymposium titled Wind Turbines and Renewable Energy at the 18th International Conference on Finite Elements in Flow Problems (FEF 2015) in Taipei, Taiwan on March 16-18, 2015.
4. Yuri Bazilevs, Kenji Takizawa, and Tayfun Tezduyar gave a two-day short course on Computational Fluid-Structure Interaction on March 14-15, 2015 in Taipei, Taiwan. The short course was offered in connection with FEF 2015.
5. Advances in Computational Fluid-Structure Interaction and Flow Simulation — A Conference on New Methods and Challenging Computations (AFSI 2015) took place in Istanbul, Turkey on May 11-13, 2015. The conference co-chairs were Tayfun Tezduyar, Kenji Takizawa, and Yuri Bazilevs. For more information, visit <<http://www.tafsm.org/AFSI2015/>>.

6. Yuri Bazilevs, Kenji Takizawa, and Tayfun Tezduyar gave a two-day short course on Computational Fluid-Structure Interaction in Istanbul on May 9-10, 2015. The short course was offered in connection with AFSI 2015. Visit <<http://www.tafsm.org/IstFSI2015/>>.

The following activities are planned for the future:

1. Three minisymposia (Biomedical Fluid Mechanics and FSI; Flows With Moving Boundaries and Interfaces; Fluid-Structure Interaction) will take place at the 13th US National Congress on Computational Mechanics (USNCCM13) in San Diego, California on July 27-30, 2015. Organizers are Yuri Bazilevs, Ming-Chen Hsu, Kenji Takizawa, and Tayfun Tezduyar.
2. At the same congress, Dominik Schillinger (University of Minnesota), Fehmi Cirak (University of Cambridge), Alexander Düster (Hamburg University of Technology), Isaac Harari (Tel-Aviv University), Ming-Chen Hsu, and Martin Ruess (Delft University of Technology) are organizing a minisymposium titled Immersed/Embedded/Fictitious Domain Methods and Their Application in Analysis and Optimization.

Kenji Takizawa, Chair

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Ming-Chen Hsu, Vice-Chair

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NEWS FROM THE ASME-AMD JOURNALS

Journal of Applied Mechanics

Yonggang Huang, Editor of JAM, continues his efforts to increase quality and achieve publication times consistent with competitive journals. The review process has improved significantly, to an average first decision within 10 days and average final decision in 30 days, and the accepted usually appears in the next issue. The acceptance rate is reduced to 16% in 2015. An annual best paper award for young authors was established in 2013, sponsored by the AMD. The recipients in 2014, announced at IMECE, were Markus Buehler of MIT, and Katia Bertoldi of Harvard and Oscar Lopez-Pamies of University of Illinois.

Yonggang Huang

Editor, Journal of Applied Mechanics

Applied Mechanics Reviews



Through a series of targeted and strategic initiatives, collaborations, and innovations in format, content, and structure, *Applied Mechanics Reviews* (AMR) is continuing to emphasize core values of relevance and accessibility to journal readers and contributors. The journal is striking a balance between immediate dissemination and archival repository, placing an emphasis on AMR as a venue in service of the community of

readers and contributors for the entire panoply of ASME Technical Journals.

The AMR Podcast series, launched in 2014 by Applied Mechanics Reviews and the ASME Digital Collection, features full-length, edited audio interviews with members of the applied mechanics and engineering science research community. The interviews contain informal conversations on topics ranging from a professional career in science and academia to personal reflections on research funding, scientific dissemination, and the contributions of applied mechanics to engineering technology. The podcast repository, available at

<http://appliedmechanicsreviews.asmedigitalcollection.asme.org/podcasts.aspx>

includes interviews with Avram Bar-Cohen, David Barnett, Markus Buehler, Howard Stone, Joe Goddard, Anthony Bloch, Karl-Johan Åström, Irene Beyerlein, Philip Holmes, Stuart Antman, Katia Bertoldi, Zhigang Suo, Edwin Kreuzer, and Igor Mezic. Future releases will feature Julia Greer, Melany Hunt, Thomas Hughes, Rodney Clifton, and Gabor Stepan, among others. Interviews may be listened to online or downloaded for offline use.

In November 2014, the Applied Mechanics Division awarded the inaugural *Lloyd Hamilton Donnell Applied Mechanics Reviews Paper Award* to Marita Rodriguez, Patrick McGarry, and Nathan Sniadecki for their paper *Review on Cell Mechanics: Experimental and Modeling Approaches*, published in the November 2013 issue of AMR, and available at

<http://appliedmechanicsreviews.asmedigitalcollection.asme.org/article.aspx?articleID=1882125>

The \$1,000 award provides recognition of outstanding contributions to the applied mechanics archival literature and pays tribute to the vision and commitment of service that led to the founding of the journal in 1948 under the editorship of Lloyd Hamilton Donnell (1895-1997).

Applied Mechanics Reviews is served by an editorial board of *Section Editors* (SEs) and *Associate Editors* (AEs). Section Editors serve as lead sources of creativity and initiative and work closely with the Editor to ensure the integrity and quality of the journal. Associate Editors handle the review process and collaborate with the Editor in soliciting invited contributions to the journal. The following members of the Editorial Board concluded their terms in 2014 and the first half of 2015: Ellen Arruda (SE), Matthew Begley (SE), Bettina Frohnapfel (AE), Kazuo Kashiyama (AE), Perumal Nithiarasu (AE), Christine Ortiz (SE), and K.T. Ramesh (SE). New additions to the Editorial Board during this period include Pradeep Guduru from Brown University (AE), Rui Huang from University of Texas at Austin (AE), and Martin Schanz from Graz University of Technology (AE).

In 2014, Applied Mechanics Reviews published 6 issues, totaling 457 pages. In addition to individual manuscripts solicited by members of the editorial board, as well as unsolicited manuscripts submitted to the Editor, special initiatives included collections of technical review articles developed in collaboration with the ASME Journals of Pressure Vessel Technology (JPVT) and Vibration and Acoustics (JVA), the Society of Engineering Science, the Midwest Mechanics Seminar Series, and the organizers of a Nordic Institute of Theoretical Physics summer school. Recent publications in 2015 include:

1. Willberg *et al.*, "[Simulation Methods for Guided Wave-Based Structural Health Monitoring: A Review](#)"
2. Medina *et al.*, "[Celebrating the 100th Anniversary of Inglis Result: From a Single Notch to Random Surface Stress Concentration Solutions](#)"

3. Sticchi *et al.*, "[Review of Residual Stress Modification Techniques for Extending the Fatigue Life of Metallic Aircraft Components](#)"
4. O'Reilly and Srinivasa, "[A Simple Treatment of Constraint Forces and Constraint Moments in the Dynamics of Rigid Bodies](#)"
5. Sevenois and Van Paepegem, "[Fatigue Damage Modeling Techniques for Textile Composites: Review and Comparison With Unidirectional Composite Modeling Techniques](#)"
6. Tornabene *et al.*, "[Strong Formulation Finite Element Method Based on Differential Quadrature: A Survey](#)"
7. Marsden and Esmaily-Moghadam, "[Multiscale Modeling of Cardiovascular Flows for Clinical Decision Support](#)"
8. Lingwood and Alfredsson, "[Instabilities of the von Kármán Boundary Layer](#)"
9. Godeferd and Moisy, "[Structure and Dynamics of Rotating Turbulence: A Review of Recent Experimental and Numerical Results](#)"
10. Campo-Deaño *et al.*, "[A Review of Computational Hemodynamics in Middle Cerebral Aneurysms and Rheological Models for Blood Flow](#)"

The 2014 InCites™ Journal Citation Reports statistics for AMR show a total of 2,573 citations in 2014 with an immediacy index of 1.5. The journal two-year impact factor without self-citations is 2.529. Its 5-year impact factor is 3.928.

Applied Mechanics Reviews welcomes collaboration in service of the applied mechanics community and continued engagement with its contributors and readers in maintaining high standards of significance, quality and impact.

Harry Dankowicz
Editor, Applied Mechanics Reviews

The Journal of Applied Mechanics Award

The Journal of Applied Mechanics Award is provided by the Applied Mechanics Division of the American Society of Mechanical Engineers to honor the best paper, which has been published in the Journal of Applied Mechanics during the two calendar years immediately preceding the year of the award. The award will be made annually to the corresponding author of the paper who received their Ph.D. no more than 10 years prior to July 1 of the year of award. Corresponding authors who have yet to receive a Ph.D. may also be considered. The award will be presented at the AMD Banquet at the IMECE meeting. The award is selected by a committee appointed by the Technical Editor of JAM, with the Vice Chair of AMD Executive Committee as the committee chair. Xuanhe Zhao from MIT will receive the 2015 JAM Award for his paper "Phase Diagrams of Instabilities in Compressed Film-Substrate Systems" (Journal of Applied Mechanics, v 81, article 051004, 2014).

OTHER ASME-AMD AWARDS

Eshelby Mechanics Award for Young Faculty

The recipient of the 2014 Eshelby Mechanics Award for Young Faculty is Liping Liu from Rutgers University. The award was formally presented at the ASME-AMD Awards Dinner at IMECE 2014. This award is given annually to rapidly emerging junior faculty who exemplify the creative use and development of mechanics. The intent of the award is to promote the field of mechanics, especially among young researchers. The selection committee consisted of: K. Ravi-chandar (UT Austin), Huajian Gao (Brown University), Kaushik Bhattacharya (Caltech), Roger Fosdick (Minnesota University), and Yonggang Huang (Northwestern University). The award consists of a \$1,500 cash prize and a commemorative plaque.

OTHER NEWS



Profs. Yuri Bazilevs (left) and David Benson (right) from the Department of Structural Engineering at UC, San Diego, will host the 2015 US National Congress on Computational Mechanics (USNCCM13).



13th US National Congress in Computational Mechanics in to be held in San Diego, CA

Profs. Yuri Bazilevs and David Benson from the Department of Structural Engineering at UC, San Diego will host the 13th US National Congress in Computational Mechanics (USNCCM13) in San Diego, CA on July 26-30, 2015. Both Profs. Bazilevs and Benson are members of the Technical Committee on Fluid-Structure Interaction of ASME-AMD. The Congress is expected to be the largest in its history, with anticipated attendance of about 1,500 participants. The Congress features over 100 minisymposia on various subjects in Computational Mechanics, seven Short Courses on emerging topics in Computational Mechanics, Plenary and Semi-Plenary lectures by world-renowned, highly-cited researchers, a Student Poster competition, and a meeting of female researchers in Computational Mechanics. For more information, visit the Congress website at <<http://13.usnccm.org>>.