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AMD

Applied Mechanics Division Newsletter

Kenneth M. Lechti, Editor

Summer 2002

Report of the Chair

Dusan Krajcinovic

When Lallit Anand, more then five years ago, approached me about joining the AMD Executive Committee, I was both flattered and apprehensive. Five years is a long time and, in addition I never aspired to be a leader. But during the minute or two that Lallit needed to sell to me the EC, my vanity won over my common sense. After all, I was recording secretary of the EC in 1974 when my mentor George Herrmann was the Division Chair. I said yes and, as a result, in the next Applied Mechanics Division letterhead my name will be added to the list of ex-chairs; a list, I should point out, that begins with the name *S.P. Timoshenko*.

When I joined the Committee C.T. Herakovich was the Chair and the members were S.A. Berger, L. Anand, A. Needleman, and T.J.R. Hughes. All of them served the Division with diligence and dedication. They used the prerogative of being Chair in their own different ways, but they all treated the members as friends. Berger was our father and Anand was the brother who *knows best*. Needleman, who was the only member of the Committee that I knew well before joining, used his sense of humor to tell us what he wanted us to do. Hughes was, in my opinion, the most effective of us all. He had all the important data at his fingertips and knew the best solutions to problems that came along. He stayed well informed on ASME activities and was conservative with the Division's limited resources. I could not have had a better mentor than Tom Hughes. During the four years we served together we become close friends. Our friendship was strengthened by our common passion for soccer.

The current members of the Committee are S. Kyriakides, P.D. Spanos, M.C. Boyce and W.-K. Liu. I had the good fortune to have Stelios Kyriakides help me this year whenever my speech impediment became a problem. I am certain that Stelios will be one of the best Chairs. The names Pol Spanos, Mary Boyce and Wing-Kam Liu demonstrate that the future of the AMD is in good hands. Another excellent person, Thomas Farris will join the EC on July 1, 2002.

The annual selection of the recipients of the five medals of the Division tests the cohesion of the EC. However, during the five years of my service the medal committees always found excellent candidates for the medals. During the 2001 IMECE in New York, Professor Ted Belytschko was presented the Timoshenko Medal. Professor Wolfgang G. Knauss was presented the Koiter Medal and Professor Bruno Boley the Drucker Medal. The AMD Award went to Dr. Dan Mote, President of the University of Maryland and Professor Zhigang Suo received the "Special Achievement Award for Young Investigators in Applied Mechanics." All medals

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Applied Mechanics Reviews

Altogether 18 review articles appeared in AMR during 2001. The articles spread across the spectrum of research areas within our scope, including ones in solid and fluid mechanics, computational aspects, biomechanics and heat transfer. We are pleased not only with the breadth of their scientific topics, but also in the geographical extent of the authors. Of the 36 authors or coauthors involved, only seven were from the U.S., 23 were from Europe (Belgium, Denmark, France, Germany, Italy, Netherlands, Poland, Russia, U.K., Ukraine), and six were from Asia (China, India, Japan). It was also pleasing to see international cooperation present in many review articles; of the eleven that had coauthors, seven had coauthors from different countries. Mechanics is truly international in its researchers, and we are gratified that so many of them regard AMR as the best place for their review articles, which are typically extensive projects.

Review articles in AMR are typically 15-25 published pages, in the same page layout style as the ASME Transaction journals, and some are as long as 50 pages. All are substantial pieces of effort - our minimum length is 10 pages. Besides the referees, an Associate Editor and I each look carefully at each article submitted. Usually we have additional requests or demands of an author, beyond the sug-

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Report of the Chair

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were presented during the AMD banquet. In 2002 the Drucker medal will be presented at a different venue.

Often the "Report of the AMD EC Chair" has been used to make the reader feel good to be a member of the AMD. In contrast, I will use this Report to let you know what I learned during the five years I served on the EC. AMD is one of the divisions of the ASME *Basic Engineering Group*. Carl Herakovich, is presently the ASME Vice President in charge of the Basic Engineering Group Operation Board. The AMD EC Chair and Vice Chair are members of this Board. Since the Group Operation Board has sixteen members the influence of our two members is somewhat limited. AMD, with 6125 members, is the largest division of the Basic Engineering, which has 16551 members. In fact, only three of all the Technical Divisions of the ASME (total membership in 2001 of 102,076) have more members than the AMD.

One perennial concern of the EC is the financial health of the Division. Modest income is allotted by the ASME to its Technical Divisions based on the number of Division members who register at the winter congress. The allotment fluctuates wildly from year-to-year which makes financial planning by the Divisions very difficult. The EC has tried to convince ASME that an alternate financial arrangement based on the annual registration fee of members would be more equitable. In addition, the Division's *Journal of Applied Mechanics* is a very profitable publication for ASME. The Division's financial tightness would be resolved if a small fraction of this profit was returned to the AMD. The ASME has yet to respond to these proposals, and I am sure that this issue will continue to concern future Executive Committees. I recommend patience and perseverance. The 75 year old relationship between the AMD and the ASME has weathered many a storm. I sincerely hope that this difficulty is resolved with this historical relationship left intact.

Dusan Krajcinovic

Thanks to Lori Graham

The Applied Mechanics Division would like to thank Professor Lori Graham at Johns Hopkins University for four years of exemplary service as Newsletter Editor. One sign of quality is often how well a person finishes a job. Lori made sure that my introduction to AMD newsletter editing went very smoothly.

Kenneth Liechti, Newsletter Editor

Applied Mechanics Award to Mote

In recognition of his fundamental contributions to mechanics and design and for academic leadership, Dr. Dan Mote was awarded the 2001 Applied Mechanics Division Award at the 2001 IMECE in New York.

Drucker Medal to Boley

In recognition of his outstanding academic leadership and numerous publications on elastic stability, structural dynamics and thermal stresses, including Theory of Thermal Stresses, a standard of reference for more than 40 years, Professor Bruno A. Boley was awarded the 2001 Drucker Medal at the 2001 IMECE in New York.

Koiter Medal to Knauss

Professor Wolfgang G. Knauss was awarded the 2001 Koiter Medal at the 2001 IMECE in New York. The award recognizes Knauss' seminal contributions, including experimental and analytical models to the understanding of time-dependent behavior in polymeric materials and structures.

Young Investigator Award to Suo

Professor Zhigang Suo was awarded the 2001 Special Achievement Award for Young Investigators in Applied Mechanics at the 2001 IMECE in New York. The award recognizes Suo's distinguished contributions in modeling the physical and mechanical properties of heterogeneous material systems.

Applied Mechanics Reviews

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gestions or recommendations of the referees. Thus, we preserve the quality of this journal, initiated 55 years ago by Donnell, with Timoshenko and von Karman as his two "scientific advisors".

We are also pleased with the international breadth found in the other aspects of AMR. Retrospectives by Daniel Drucker (USA), Patricio Laura (Argentina) and Frithiof Niordson (Denmark) appeared in 2001. Reviews of 125 books were published last year. The book authors were from throughout the world. Moreover, one-third of the reviewers were from outside the USA. Using non-U.S. reviewers requires more effort and cost, especially in sending the books overseas, but also of the need to do more editing of the English. But we feel that this is desirable. We want the entire world to be involved in all aspects of AMR.

Arthur Leissa, Editor-in-Chief

AMD 2002 FELLOWS LIST

June 2001 - April 2002

Dr. K. Chandrashekhara - University of Missouri- Rolla
Dr. Hissaki Maeda - Nihon University
Dr. Ramana M. Pidaparti - Purdue School of Engineering and Technology
Dr. George K. Haritos - none listed
Dr. Balkrishna S. Annigeri - United Technologies Research Center
Dr. Sudhakar E. Nair - Illinois Institute of Technology
Dr. Mo-How H. Shen - Ohio State University
Dr. Jan M. Lee - Seoul National University
Dr. Rishi Kant - Seagate Technology
Dr. Thomas N. Farris - Purdue University School of Aeronautics and Astrology
Dr. G. Paul Neitzel - Georgia Institute of Technology
Dr. Hussein M. Zbib - Washington State University School of Mechanical & Materials Engineering
Dr. Lokeswarappa R. Dharani - University of Missouri-Rolla
Dr. Ravinder Chona - Texas A&M University Mechanical Engineering Dept.
Dr. Paul Steif - Carnegie Mellon University
Dr. James K. Good - Oklahoma State University
Dr. Jianmin Qu - Georgia Institute of Technology
Dr. Roger Ian Tanner - University of Sydney
Dr. Kaliat T. Ramesh - The Johns Hopkins University

2001 Timoshenko Medal

Professor Ted Belytschko was awarded the 2001 Timoshenko Medal at the 2001 IMECE in New York. The citation reads: "For seminal contributions in nonlinear computational mechanics, including explicit time integration methods widely used in crash analysis and metal forming simulations, and original contributions in mesh-free methods." The text of his acceptance speech follows.

TIMOSHENKO MEDAL ACCEPTANCE SPEECH*

Ted Belytschko

Well I have been sitting in the audience of Applied Mechanics dinners for more than 30 years now, never even dreaming that I would get the Timoshenko medal. I have enjoyed many of the talks, and heard many nuggets of wisdom to guide me in research and life. I still vividly remember one of the first talks I heard by Den Hartog - in those days every Timoshenko lecturer could still start with a reminiscence of their contact with Timoshenko. Den Hartog had worked for Timoshenko one summer, and when he wrote his study up as a report, Timoshenko told him to submit it for publication. Den Hartog responded that he did not think that this work was something the world was waiting for. Timoshenko replied-"How many publications that have appeared in the literature do you think the world was waiting for?" So I proceeded to publish far too many papers.

In preparing this talk, I noticed that many of the talks were autobiographical. But I quickly decided not to make mine autobiographical because I still remember that when I was program chairman, a very witty and brilliant Timoshenko medallist chose his autobiography as the topic. He was only eighteen by 10 PM, and I was at the edge of my chair because the union crew that was waiting at the doors of the banquet hall to clean up.

So I will not give an autobiography, but I would like to say a few words about my teachers. The most important teacher in any research career is the Ph.D. advisor. My advisor was Phil Hodge, who many of you know and who was also advisor of Carl Herakovich, a former member of the Executive Committee who is sitting at the center table. Phil came from Brown, trained by William Prager, and he taught us many things: the importance of clarity and conciseness, personal integrity, and the joys of a career in research and teaching.

Phil also gave us some maxims that you might find useful. One was: "Any research worth doing is worth doing well." The other, which I have found even more useful, went something like this: "Academic paperwork has to be done, but it is usually not worth doing well."

My other mentor was Ernie Masur, who was Chair in my first position at the University of Illinois at Chicago. Ernie was quite different from Phil-whereas Phil trudged to the computer center every day with a box of cards for his daily run-in those days you were a computer jock if your computer cards filled one box, a superjock if it required two or more boxes -Ernie disdained to even type, saying that gentlemen did not type. But Ernie had impeccable taste and a terrific nose for what he called "substance," and he taught me to recognize the substance from the chaff. He also had a great sense of humor, though wit, like principles, can't be taught.

A Timoshenko talk I really enjoyed was Roshko's talk "Think Small." There were many precepts in his talk that I found very appealing, so I have decided to take a similar vein but call it "Think Big Persistently." Now you might think I am contradicting him, but some of the things I will say echo what he said.

I will address only two facets of thinking big persistently-what it means for young people, and what it means for our society, the Applied Mechanics Division.

First let me address the Applied Mechanics Division. Over the thirty years that I have been associated with this Division, the research of this group has continued to flower: the impact of this Division on the applied and theoretical issues of engineering and science has been simply amazing. Fracture mechanics, the theory of plasticity (which really underlies almost all rational nonlinear material models), micromechanics, composites, the finite element method have either originated here or owe a large part of their development to this Division. Yet, during this time, funding from NSF, which is still the best place for research support and supports many pure and applied fields very generously, has almost shrunk to zero.

This is astounding when one considers the impact of this Division on basic knowledge, basic knowledge that is not only intellectually beautiful, but has had tremendous impact on our society. This one of the most talented groups in analytic thinking in the world and the closed form solutions that have been produced by this group have provided the basic understanding of a host of important phenomena. I might add that although I am a computational mechanician, I often say that: "A good closed form solution is worth a thousand of computations."

Now it is difficult to ascertain to what exactly ascribe this decline, but I have long felt that it is not strictly due to external forces. I believe it stems from our lack of self knowledge, our lack of identity and our reluctance to sell ourselves. Many disciplines, like computer science, have actually hired lobbyists to plead their cause, but as a Division, we almost never talk to the upper echelons of NSF or Congressional staffers. There have been a few attempts at this, but they always seem to wane, and that is why I have added that we must think big persistently-the benefits of interactions do not come overnight.

Another source of our difficulties is our fuzzy self-identity. For many years, this Division has attempted to represent fields that were no longer a part of it- the fluid mechanicians have departed for the American Physical Society, but we still included fluids, and most dynamicists are in other places, but we still pretend that it is part of our Division. Perhaps even the name of our division is no longer appropriate. For one thing, the name is not appealing to younger people-most young people starting careers in research and teaching want a sexier name, they don't want to be confused with those who fix their cars. Furthermore, most of us are not really engineers-much of our work is indistinguishable from physics or from materials science. I daresay the contributions of some members of the Applied Mechanics Division, such as Jim Rice and John Hutchinson, rank with the most important in materials science. So maybe we should look at another name-it was very beneficial for soils engineers, who changed their name to geotechnical engineering, and have much improved their image with the public.

What should such a name be? I have asked a number of people. Some would not even give it an attempt, because they consider it sacrilegious. Lalit Anand, a former member of the Executive Committee, proposed "Solid and Mechanical Engineering and Sciences." He suggested we would then go by the acronym SMEC. My preference is "Science and Engineering of Solids" -SES. I think it is high time we recognize that we are scientist as well as engineers, and that we get a name that accurately reflects what we do and what we have done!

But more important, the Executive Committee and its past members should be in constant contact with people at Congressional staffers, NSF and other funding agencies. There are 10,000 of us in ASME and more in ASCE, and I think we should have a strong voice. We have to let them know what we do, why it is important, and what we can do for the country. This can not be a one-shot

*The text of the Timoshenko Medal Acceptance Speech delivered at the Applied Mechanics Dinner of the 2001 IMECE in New York, NY.

effort, it needs to be done persistently. (for example, Mathematics has just won a commitment for a fourfold increase in funding through such long-term efforts).

My second theme pertains to young people, to whom I would like to give some advice based on my past successes and mistakes. To think big is to look for important problems at the cutting edge. Too many young researchers choose their topics by reading a paper and seeing how they can extend it- that is not how the important problems are found. You have to talk with many people, read both the literature of your disciplines and other fields, and identify the emerging fields and important problems. I fortunately stumbled into nonlinear finite elements through my consulting work early in my career-I wrote a crash code in 1971 when a visionary in DOT initiated a research program by selling the idea that crash testing could be replaced by computer simulation. Well at that time, computers were so slow that even a 500 element simulation (500,000 are customarily used today) cost more than a test, so the program was quickly shelved. But it gave me the opportunity to do some work in a new area that had considerable impact.

To highlight the importance of working on new problems, I quote Arno Penzien, the Nobel Prize winner who discovered the background radiation that underpins the big bang theory: "there are two types of scientists: 2% discover new things and blaze new frontiers, the other 98% fix up their mistakes; the accolades go to the former."

It is also crucial for the success of this Division that we nurture our young researchers- our future obviously lies with them. In this, I think that we must de-emphasize the role of money in our promotion criteria. We have now reached the point where in many schools, the volume of money supersedes all other factors in a professor's promotions and recognition. This is really quite absurd, since a university does not exist to make money- our purpose is to teach and do research, and money is only a means to that end. But in many places, including my school, right at the top of your annual report is your dollars spent. Everyone seems to have become obsessed with the U.S. New and World Report ratings, in which money plays a dominant role. If this trend continues, I can see two young assistant professor talking one day and wondering: "What is the fuss over Einstein all about?- I hear he never brought in 100k per year."

So I think we ought to persistently remind our administrators that our goals are not to bring in money. Administrators have incorporated indirect funds into operating budgets, so they are becoming addicted to large research fund flows. It will be a big job to bring this to an end, but if we can think big and persistently, we can at least moderate this.

There are tremendous opportunities for us in emerging fields such as micromechanics, nanomechanics, cellular mechanics, biomechanics, computer simulation, and many that are only barely visible on the horizon today. But to enjoy these, we must do the things that need to be done persistently.

To conclude, I would like to thank my family, my wife Gail and my children Peter, Nicole, and Justine; my colleagues at Northwestern in the field of mechanics, Wing Kam Liu, Brian Moran, Jan Achenbach, Cate Brinson, Zdenek Bazant, Jian Cao, Isaac Daniel, and John Rudnicki (we have the best group in the world, and their collaboration, collegiality and competitiveness have helped me immensely), my students and post-docs, and my professional colleagues, particularly Tom Hughes and Tinsley Oden, who were so instrumental in my winning this award.

T. Belytschko
Northwestern University, Evanston, IL

Journal of Applied Mechanics

Dr. Robert M. McMeeking, Professor of Mechanical Engineering at the University of California at Santa Barbara, has been appointed Technical Editor of the Journal of Applied Mechanics for a five-year term starting on July 1, 2002. He succeeds Dr. Lewis T. Wheeler who has served in this position since January 1993.

After nearly 10 years at the helm of the Journal Lewis Wheeler will step down on June 30, 2002. We thank him for his leadership and service to the international mechanics community in general and to the Applied Mechanics Division of the ASME in particular. Under his leadership the Journal has maintained its position as a premier journal in mechanics. Recent changes enacted including the increase of the page limit on manuscripts from 6 to 9 pages, the switch from quarterly to bimonthly publication, a faster processing time and a new printing process should help make the Journal an even more attractive place to publish.

Robert McMeeking earned a Bachelor of Science degree in Mechanical Engineering from the University of Glasgow and Master of Science and Doctor of Philosophy degrees in Solid Mechanics from Brown University. From 1978 to 1985 he was on the faculty of the Department of Theoretical and Applied Mechanics at the University of Illinois at Urbana-Champaign. Since 1985 he has been a Professor of Mechanical Engineering and Environmental Engineering at UC-Santa Barbara where he has also served two terms as department Chair. He is a Fellow of the ASME and has served as associate editor of the Journal of Applied Mechanics for six years.

McMeeking's research interests span the field of solid mechanics with particular emphasis on mechanics of materials and computational aspects. His publications include works in finite deformation plasticity, inelastic fracture, toughening mechanisms in ceramics, bimaterial fracture, powder consolidation, failure of composites, ferroelectrics, etc. Robert McMeeking will bring to the editorship a strong connection with materials science, which is an important driver of many modern applied mechanics efforts.

This appointment represents the conclusion of a more than twelve month search conducted by the Executive Committee in consultation with past editors of the Journal and past AMD chairs. McMeeking was selected from a strong field of candidates. His selection and this five year appointment were approved by the ASME Publications Committee at the 2001 IMECE meeting. On behalf of the AMD Executive Committee we extend a warm welcome to Robert McMeeking to this most prominent appointment and assure him the support of the Division in his efforts to bring the Journal to even higher levels of excellence.

Stelios Kyriakides for the AMD Executive Committee

Notice on JAM Correspondence
Effective July 1, 2002, all correspondence concerned with previously submitted articles and all new manuscript submissions should be directed to:

Professor R. M. McMeeking, Technical Editor
Journal of Applied Mechanics
Department of Mechanical and Environmental Engineering
University of California
Santa Barbara, CA 93106

News from the Technical Committees

Most committees maintain an open policy toward membership. Please contact the Committee Chair if you wish to join and or participate in the activities of the Committee.

AMD-MD Joint Committee on Constitutive Equations

The Technical Joint Committee (TJC) on Constitutive Equations (CE) of the Applied Mechanics Division (AMD), and Materials Division (MD) of the American Society of Mechanical Engineers (ASME) exists to promote, support, and advance the state of the art and science of Applied Mechanics and Materials in the area of modeling the mechanical and physical behavior of materials and structures. The committee's interests cover the area broadly and include relevant physical phenomena, theoretical and mathematical problems, constitutive modeling issues, experimental aspects, numerical modeling, etc.

The committee usually holds it annual meeting during the regular ASME Congress. Its last meeting was held at the IMECE2001 in New York. Dr. Hussein M. Zbib (zbib@wsu.edu) as the new chair of the committee and on behalf of all the committee members would like to expressed their appreciation for a job well done by Dr. Martin Ostoja-Starzewski who served as the chair of the committee for three years and who will continue to serve as the co-chair for one more year.

The committee would like to welcomed three new members to its ranks: Dr. I. Joga Rao, Assistant Professor, Dept. of Mechanical Engineering, New Jersey Institute of Technology (raoi@adm.njit.edu); Dr. Muhammad A. Siddiq Qidwai, Scientist, Contractor, Multifunctional Materials Branch, Naval Research Laboratory (qidwai@anvil.nrl.navy.mil) and Dr. M. Sandeep, Honeywell Aerospace Engines & Systems (sandeep.muju@honeywell.com). The committee discussed proposed symposia for the forthcoming IMECE2002 to be held in New Orleans, Nov 17-22, 2002.

The committee approved two proposals. Dr. Cemal Basaran (University at Buffalo, SUNY, www.packaging.buffalo.edu) and Dr. C. L. Chow (University of Michigan Dearborn) will be organizing a symposium on "Advances in Damage Mechanics." The symposium will consist of seven sessions of invited and contributed papers and will discuss advances in the theory and experimental verification of damage mechanics. Application from nano scale to mega scale structures will be discussed. Dr. Mehrdad Massoudi (U. S. Department of Energy National energy Technology Laboratory, Mehrdad.Massoudi@NETL.DOE.GOV) and Dr. Morteza M. Mehrabadi (Tulane University, mmm@tulane.edu) will organize a Constitutive modeling of granular materials with four sessions. This symposium will aim at bringing together the researchers in the mechanics community who deal with granular materials. The presentations will deal with theoretical, computational, and experimental issues related to the flow and behavior of granular materials. The symposium organizers will also edit a proceeding for this symposium.

Meetings of the AMD-MD Joint Committee on Constitutive Equations will be held at all ASME conferences, current members are encouraged to bring new ideas and proposals for symposia for future meetings, and new members are always welcome.

Hussein M. Zbib, Chair

Committee on Composites

For the 2001 IMECE Conference in NYC, the committee sponsored 6 Symposia, a total of 14 sessions, of which one was Industrial, as follows:

Symposium on "Three-Dimensional Effects in Composites and Sandwich Structures," organized by Yapa D.S. Rajapakse; Symposium on "Dynamic Effects in Composite Structures," organized by Yapa D.S. Rajapakse; Symposium on "Crashworthiness of Composite and Light-Weight Structures," organized by Golam Newaz; Symposium "in Honor of Prof. George J. Simitses," organized by Victor Birman & George A. Kardomateas; Symposium on "Durability & Damage Tolerance of Composites," organized by Mina Pelegri and Ann-Marie Sastry and Symposium on "Design and Manufacturing of Composites," organized by Sue Mantell.

At the IMECE'02, to be held in New Orleans, Nov. 17-22, 2002, the Composites Committee is planning to sponsor/co-sponsor 6 symposia [13 sessions], as follows:

Symposium on "Theoretical & Industrial Issues in Ceramic Matrix Composites," organized by Larry Byrd & Victor Birman, 3 sessions; Symposium on "Nanocomposites," organized by Iwona Jasiuk & George A. Kardomateas, 2 sessions; Symposium on "Mechanics of Composite Faced Sandwich Structures," organized by Charles Bert & Leif Carlsson, 3 sessions; Symposium on "Mechanics of Heterogeneous Soft Tissue," organized by Ann-Marie Sastry & Noriko Katsube, 1 session; Symposium on "Crashworthiness of Composites," organized by Golam Newaz & Nancy Johnson, 2 sessions; and Symposium on "Durability and Damage Tolerance of Heterogeneous Materials," organized by Mina Pellegri & Ann-Marie Sastry, 2 sessions.

The next meeting of the Committee will take place in New Orleans during the IMECE'02 in November 2002. At this meeting, Leif Carlsson will take over as the Chairman and a new Vice-Chair will be elected. Current members, and other interested persons, are invited to participate. Proposals for symposia dealing with mechanics of composites are encouraged for future conferences. Potential organizers are encouraged to highlight emerging areas of composites research.

George A. Kardomateas, Chair

Committee on Computing in Applied Mechanics

The Committee on Computing in Applied Mechanics (CONCAM) has had a very productive year. Lorraine Olson (University of Nebraska) is continuing as CONCAM Chair, and Patrick Smolinksi of the University of Pittsburg was elected to be the new Vice-Chair of CONCAM. Pat will automatically become the Chair in two years.

Virtually all of the members of CONCAM also participated in the U.S. Association of Computational Mechanics (USACM) summer meeting in Dearborn, Michigan, which had over 800 participants from around the globe.

At the IMECE in New York, CONCAM sponsored two symposia. A very successful two session symposium on "Moving and Stationary Interfaces" was organized by Pat Smolinski and Ted Belytschko. In addition, Ann-Marie Sastry organized a two session symposium on Damage and Durability of Multifunctional Materials which was co-sponsored by the Materials Processing and Manufacturing Committee.

CONCAM is also pleased to note that Ted Belytschko, a long-time member and former Chair of CONCAM, received the prestigious Timoshenko Medal at the Applied Mechanics Dinner in New York.

CONCAM is planning two symposia for the 2002 IMECE in New Orleans. One will focus on "Modeling and Experiments on Micro/Nano Systems" and is jointly sponsored with MEMs and Fluids Engineering. This symposium is being organized by Junghoon Lee, Wing Kam Liu, and Ted Belytschko of Northwestern and J. S. Chen from UCLA.

The second symposium on "Advances in Boundary Elements" is organized by Glaucino Paulino (Illinois) and Subrata Mukherjee (Cornell).

Next summer, CONCAM will meet at the 14th. U.S. National Congress of Theoretical and Applied Mechanics in Blacksburg, VA. Anyone interested in joining the mailing list for CONCAM should contact the Chair, Lorraine Olson, directly at lolson2@unl.edu.

Lorraine Olson, Chair

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Technical Committee News

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Committee on Dynamic Response of Materials

The Dynamic Response of Materials (DRM) Committee met during the ASME winter meeting in November, 2001. The major issue on the agenda is to approve the committee's Rules of Operation. The new Rules of Operations for the DRM committee can be found in the ASME webpage under AMD.

Proposals for organizing future symposia were also discussed at this meeting. For this coming winter meeting in New Orleans, two symposia will be organized. They are "Elastic Wave Based Sensors," by Professor M. Peterson, Mechanical Engineering, University of Maine, 5711 Boardman Hall, Orono, ME 04469-5722, Phone (207)581-2129, Fax (207)581-2379, MPeterson@umeme.maine.edu and "Advances in Characterization of Dynamic Response of Materials and Structures," by Professors W. Chen, AME Dept, U. of Arizona, Phone: (520) 621-6114, 626-4470, Fax: (520) 621-8191, wchen@ame.arizona.edu and Professor R. Feng, W316 Nebraska Hall, University of Nebraska-Lincoln, Lincoln, NE 68588-0526, Phone: (402) 472-2384, Fax: (402) 472-8292, rfeng@unlserve.unl.edu.

Jianmin Qu, Chair

Committee on Dynamics of Structures and Systems

The Dynamics of Structures and Systems Committee activities for 2001 included sponsoring two symposia, "Future Directions in Dynamics and Control of Structures and Systems," and "Symposium on the Inverse Evaluation of Dynamic Constitutive Material

Constants by Combined Experimental-Analytical and/or Computational Techniques."

In 2002 DCSS is sponsoring four sessions for the"5th International Symposium on Fluid-Structure Interactions, Aeroelasticity, Flow-Induced Vibration and Noise" organized by M. Paidoussis of McGill University.

Farid Golnaraghi, Chair

Committee on Elasticity

The Elasticity committee is planning a symposium on "Modeling Across Scales for Heterogeneous Systems" for the upcoming IMECE meeting in New Orleans. The organizers are Demitris Kouris from University of Wyoming, and Lewis Wheeler from University of Houston. The plan is to have five sessions focusing on multiscale modeling of heterogeneous multifunctional material systems, covering from nanoscales to macroscales. There was discussion for an additional symposium on biomaterials, but due to lack of available sessions, we will focus on this next year.

Dimitris Lagoudas, Chair

Committee on Experimental Mechanics

The committee has been active in sponsoring and organizing symposia at the International Mechanical Engineering Congress and Exposition. The committee has met over the past two years at each of these meetings, primarily for the purpose of coordinating its activities. At the IMECE 2001 in New York, the Experimental Mechanics Committee co-sponsored two symposia with Fracture and Failure Technical Committee, "Symposium on 3-D Fracture," (organized by K. Liechti and W.D. Keat) and "Mechanics of Cellular Materials," (organized by A. Bastawros and W. Chen). For IMECE 2002, the committee is developing sessions jointly with the Fracture and Failure Technical Committee and the Dynamic Response of Materials Technical Committee.

The committee is working on drafting operating procedures in accordance with the rules of the AMD. This task should be completed by the committee meets next during the IMECE 2002 in New Orleans.

The activities of the committee are possible only through the volunteer efforts of numerous individuals; we thank all symposia organizers and participants for their support. Membership in the committee is open and we encourage colleagues interested in experimental aspects of mechanics to attend the committee meetings, to organize symposia, and to contact the committee chair or the secretary (John Lambros, University of Illinois, Urbana-Champain) with ideas or suggestions on how best we can serve the community.

K. Ravi-Chandar, Chair

Committee on Fracture and Failure

The Fracture and Failure Committee (FFC) has been active over the past year. The current officers of the committee are Hareesh Tippur (Auburn U.) - Chair, Jack Beuth (Carnegie Mellon U.) - Vice Chair, and John Lambros (UIUC) - Secretary, for the 2001 - 2003 term. The committee also has an active Honors and Awards subcommittee chaired by G. Ravichandran (Caltech).

In the past year, the committee met during MMC2001 and 2001-IMECE conferences in San Diego and New York, respectively. Twelve attendees were present during both the meetings and a wide range of topics of interest including organizing sessions and symposia were discussed. FFC members Vikas Prakash (Case Western Reserve U.) and Raman Singh (SUNY - Stony Brook) organized technical sessions on "Fracture of Multi-Layered Material Systems," and Raman Singh and Toshio Nakamura (SUNY - Stony Brook) organized technical sessions on "Failure due to Environmental Degradation," during MMC2001. The committee co-sponsored sessions on "3-D Fracture," organizer Ken Liechti, U. Texas and "Mechanics of Cellular Materials," organizer Ashref Bastawros, Iowa State U. during 2001 IMECE. Technical symposia have also been sponsored by the committee during the upcoming USNCTAM and 2002-IMECE.

Hareesh Tippur, Chair

Fluid Mechanics Committee

The Fluid Mechanics Technical Committee organized an eight-session symposium on "Fluid-Physics and Heat Transfer for Macro-and Micro-Scale Gas-Liquid and Phase-Change Flows" at the 2001 International Mechanical Engineering Congress and Exposition, New York, NY, November 11-16, 2001. Professor Amitabh Narain of Michigan Tech was the lead organizer and the symposium was co-sponsored by the Fluids Engineering and Heat Transfer Divisions of the ASME. For the 2002 International Mechanical Engineering Congress and Exposition, New Orleans, LA, November 17-22, 2002, the committee is sponsoring/co-sponsoring two symposia, "Challenges and Advances in Flow Simulation and Modeling," organized by Professor Tayfun E. Tezduyar of Rice University, and "Fluid-Structure Interactions, Aero elasticity, Flow-Induced Vibration & Noise (FSI, AE & FIV+N)," organized by Michael P. Paidoussis of McGill University.

Amitabh Narain, Chair

Geomechanics Committee

The committee last met at the 2001 Mechanics and Materials Conference, June 27-29, San Diego, CA, where it sponsored a symposium on Recent Development in Geomechanics (organized by Anil Misra, K. T. Chau, C. S. Chang and T. T. Ng). Per the committee by-laws, Professor Ching S. Chang of the University of Massachusetts, Amherst rotated out of his term as the committee chair, Professor Anil Misra of the University of Missouri-Kansas City, took over as the new committee chair, and Professor K. T. Chau of the Hong Kong Polytechnic University was elected the recording secretary for the next term. The committee is sponsoring a symposium on Computational Geomechanics at the 14th USNCTAM, June23-28, 2002, Blacksburg, VA (organized by Marte S. Gutierrez and Anil Misra). The committee is looking for additional members.

Anil Misra, Chair

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Technical Committee News

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Committee on Instability in Solids and Structures

The committee participated in the 2001 Mechanics and Materials Conference in San Diego by organizing a symposium entitled "Structural Stability." The symposium was conducted in three sessions and included participants from academia, national laboratories and industry. It was organized by E. Corona and S. Kyriakides. The committee also participated in the 2001 IMECE by organizing a symposium in honor of Professor G. J. Simitses jointly with the Composites Committee and the Structures and Materials committee of the Aerospace Division. The symposium consisted of six sessions with a total of 27 presentations. V. Birman and G. Kardomateas organized the symposium.

For 2002, the committee has organized two symposia entitled "Instabilities in Solids and Structures." The first will be held in conjunction with the 14th US Congress of Theoretical and Applied Mechanics. It will consist of four sessions with a total of 20 presentations. It was organized by S. Kyriakides and E. Corona. The second will take place at the 2002 IMECE in November. It will consist of three sessions that are being organized by E. Corona and G. Kardomateas.

On a final note, many thanks to N. Triantafyllidis for chairing the committee during the period 1998-2001.

Edmundo Corona, Chair

Committee on Materials Processing and Manufacturing

The Materials Processing and Manufacturing (MPM) committee (Ann Marie Sastry, Chair; Jian Cao, Vice-Chair) was active during the 2001 IMECE, co-sponsoring or sponsoring sessions in several symposia. These symposia included "Multiscale Approaches to Manufacturing Processes," organized by Antoinette Maniatty (RPI), "Fabrication of Intelligent Composite Active Structures," organized by Mehrdad Nejhad (University of Hawaii at Manoa), "Materials Development and Utilization in Forming," organized by Jian Cao (Northwestern University) and "Durability and Damage Tolerance of Heterogeneous Materials," organized by Assimina Pelegri (Rutgers) and Ann Marie Sastry (University of Michigan).

Ann Marie Sastry, Chair

Committee on Transportation

We have organized five technical sessions during our 2001 ASME WAM in New York, "Aluminum Crashworthiness," "Biomechanics & Occupant Protection I," "Biomechanics & Occupant Protection II," "Vehicle Crashworthiness I," and "Vehicle Crashworthiness II."

We were successful holding all of our five sessions despite the unusual rate of cancellation. We had attendance of about 30-40 persons per session.

Hikmat Mahmood, Chair

www.asme.org/divisions/amd/events

Upcoming Events

- **39th Annual Technical Meeting of the Society of Engineering Science**
  October 13 - 16, 2002
  Nittany Lion Inn, University Park, Pennsylvania
- **International Mechanical Engineering Congress and Exhibition 2002**
  November 17 - 22, 2002
  New Orleans Hilton & Ernest N. Morial Convention Center, New Orleans, Louisiana
- **National Manufacturing Week Technical Conference**
  March 3 - 6, 2003
  McCormick Place Complex, Chicago, Illinois

Remember to visit the AMD web site at
www.asme.org/divisions/amd/
often to stay current with events, call for papers, publications and other AMD related information.

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