



# Mechanics Division

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## NEWSLETTER

Fall 2004

Chair: **Scott Danielson**  
Secretary: **Paul S. Steif**

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### Message From the Chair

Dear Mechanics Educators:

I would like to extend a greeting on behalf of the ASEE Mechanics Division Officers to all mechanics' educators. I hope your summer was productive and enjoyable, and your classes and other work are going well this fall semester.

*We currently are in the midst of a membership drive.* Please recommend the Mechanics Division to your colleagues. For their first year of membership, the \$2.00 division dues will be waived. Please pass the form included later in the newsletter to interested individuals.

The 2004 Annual Conference in Salt Lake, UT, was a successful one for the Division and, I hope, enjoyable for all of you attending. The five Mechanics Division paper sessions were all well attended, including our 7 a.m. Monday and 4:30 pm Wednesday conference bookends! I thank all of our authors, presenters, and session moderators (Wendy Crone, William Howard, Phillip Cornwell, Christine Masters, Brian Self, Joseph Rencis, Raluca Rosca, and Paul Steif) for their work.

Our business and the executive committee meetings were also well attended. Thanks to those whom attended these business meetings, as they are important to the functioning of the Division. For those that have not attended a business meeting, please do so next year as you be welcomed and offered the opportunity to contribute!

At our annual Mechanics Awards Banquet in Salt Lake, we were privileged to have Mr. Howard van Boerum, of van Boerum and Frank Associates, speak to us about the design of the 2002 Olympic Park Bobsled track. We also presented the Division's awards to the very deserving slate of awardees. A complete list of the award winners is found later in the newsletter.

The Mechanics Division website is being relocated at this time as it follows our webmaster, Joe Rencis, to his new home in Arkansas. Therefore, it will not be available for several months.

Please note the Call for Papers in this newsletter for next year's meeting in Portland, OR, to be held June 12-15, 2004. Make plans now to join us in the City of Roses! Submit an abstract and encourage others to do so as well. Also, please begin to prepare nominations for the Mechanics Division awards. A call for awards is included in this newsletter.

I'd like to thank Sudhir Mehta, last year's chair, for the leadership he provided to the division. If you have any comments, questions, or suggestions about the Mechanics Division, please do not hesitate to let me know. Have a great semester.

Scott Danielson, 2004-2005 Mechanics Division Chair

## **Call for Award Nominations**

### **Archie Higdon Distinguished Educator Award**

The Archie Higdon Distinguished Educator Award is given annually by the Mechanics Division for distinguished and outstanding contributions to engineering mechanics education. The nomination package should include the following:

1. A letter of nomination and no more than four accompanying letters of support that delineate the nominee's contribution to mechanics education, and
2. Nominee's curriculum vitae.

The award consists of a plaque to be given at the annual Mechanics Division Banquet and registration for the ASEE Annual Conference along with registration for the Mechanics Division Banquet.

### **Ferdinand P. Beer and E. Russell Johnston, Jr. Outstanding New Mechanics Educator Award**

The Ferdinand P. Beer and E. Russell Johnston, Jr., Outstanding New Mechanics Educator Award is given annually to up to three individuals who have shown a strong commitment to mechanics education. The winners are selected on the basis of their exceptional contributions to mechanics education. Individuals who have no more than five years of academic experience past their first regular academic appointment are eligible. The nomination package should include the following:

1. A letter of nomination that delineates the nominee's contribution to mechanics education and no more than two additional letters of support,
2. A one-page letter from the nominee describing his or her personal philosophy regarding mechanics education, and
3. Nominee's curriculum vitae.

The award consists of a \$200 cash prize, a plaque to be awarded at the Mechanics Division Banquet, and registration for the ASEE Annual Conference along with registration for the Mechanics Division Banquet and Business Meeting Luncheon.

### **Mechanics Division James L. Meriam Service Award**

The Mechanics Division James L. Meriam Service Award may be given annually to recognize significant service to the Mechanics Division as characterized by notable leadership, significant contributions, and prolonged and dedicated service. Candidates for the award must be members of the Mechanics Division and must have served the Division for a minimum of ten years. No individual may receive the award more than once, and members of the Division's Awards Committee are not eligible for the award until two years after completing their service on that committee. Nominations may be made by all members of the Mechanics Division except for those members serving on the Division's Awards Committee. Each nomination package must include the following:

1. A chronological listing of the candidate's service to the Division, and
2. A narrative statement detailing the significant elements of the service.

The award consists of a plaque to be given at the annual Mechanics Division Banquet and registration for the ASEE Annual Conference along with registration for the Mechanics Division Banquet.

Attendance at the ASEE Annual Conference is required for the awardees. Nominations are due (in triplicate) by **January 31, 2005**. Point of contact for submission of nominations or for additional information is Professor Renata Engel, 212 EES, Penn State University, University Park, PA 16801; email: [rse1@psu.edu](mailto:rse1@psu.edu).

## **Post Conference Notes**

### **Mechanics Division - 2004 ASEE National Conference in Salt Lake City.**

#### **Best Paper Award**

Phillip Cornwell, "Interactive Web Examples for Dynamics Using Dazzler Max"

#### **Best Paper Presentation Awards**

##### **Session 1168 - Trends in Mechanics Education**

Scott Danielson, "Assessment in Statics: Concepts vs. Skills"

##### **Session 1368 - Improving Statics and Dynamic Classes**

Anna Dollár and Paul Steif, "Reinventing the Teaching of Statics"

##### **Session 2468 - Improving Mechanics of Materials Classes**

Paul Steif, "Use of Simplified FEA to Enhance Visualization in Mechanics of Materials"

##### **Session 3268 - Innovations in Teaching Mechanics**

Phillip Cornwell, "Interactive Web Examples for Dynamics Using Dazzler Max"

##### **Session 3268 - Innovations in Learning By Doing**

Brian Self, "Teaching undergrad kinematics Using a Lego Mindstorms Race car competition"

#### **Overall Best Paper Presentation in the Mechanics Division**

Brian Self, "Teaching undergrad kinematics Using a Lego Mindstorms Race car competition"

**Congrats to everyone!!**

# Annual Business Meeting Minutes (draft)

Minutes – ASEE Mechanics Division  
Executive Committee Meeting  
Wednesday, June 23, 2004, 12:30 p.m.  
Salt Lake City Convention Center

Attendees: Ralph Flori, Brian Self, Tim Philpot, Scott Danielson, Sudhir Mehta, Joe Rencis, Phil Cornwell, Chris Masters, Mike Magill, Jennifer Kadlowec, Nancy Denton, Cyrus Hagigat, Frank Croft, Madhu Vable, Peter Joyce, Ing-Chang Jong, Hulen Kuznetsov, Michael Hardin, Peter Avitabile, Paul Steif, M. Asghar Bhatti, Raluca Rosca

1. Welcome and introductions (Mehta)
2. Approval of 2003 Business Meeting Minutes (Philpot)
3. 2004 Award Recipients (Engel)
  - A. Awards
    - James L. Meriam Service Award: Elliot R. Eisenberg, Professor Emeritus, Penn State, Hazleton Campus
    - Ferdinand P. Beer and E. Russell Johnston, Jr., Outstanding New Mechanics Educator Award: Bogdan I. Epureanu, Mechanical Engineering, University of Michigan
    - Archie Higdon Distinguished Educator Award: Robert L. Norton, Mechanical Engineering, Worcester Polytechnic Institute
  - B. Recommendations of the Awards Committee
    - We recommend that the Mechanics Division leadership emphasize the importance of bringing forward nominations, particularly for the New Mechanics Educator Award. These types of awards at early stages of faculty careers can be extremely valuable to the recipients, provide tremendous encouragement to them, and acknowledgement of their early contributions. As in year's past, the Awards Committee considers nominations for all awards for two years once confirming with the nominator his or her desire to keep the nomination in the pool for consideration.
  - C. Best Paper and Best Presentation Awards
    - Best Paper: Paper Number 2004-69 – “Interactive Web Examples for Dynamics Developed Using Dazzlermax” by Phillip Cornwell of Rose-Hulman Institute of Technology.
    - Best Presentation (from the 2003 Annual Conference): “Games as Teaching Tools in Engineering Mechanics Courses” by Timothy Philpot, Nancy Hubing, Richard Hall, Ralph Flori, David Oglesby, and Vikas Yellamraju, University of Missouri – Rolla.
  - D. Contributors
    - The following publishers have been contacted to thank them for their support in years past, provide them with information about this year's award winners, and to seek their continued support:
      - ◆ Pearson Education (formerly Prentice Hall Publishing)
      - ◆ John Wiley and Sons
      - ◆ McGraw-Hill
      - ◆ CRC Press (formerly Marcel Dekker, Inc.)
      - ◆ Thomson (formerly Brooks/Cole)
4. Reports from Division Officers
  - A. Program Chair – Scott Danielson
    - Good conference.
    - Much work was done by volunteers, e.g., reviewing papers and acting as moderators.
  - B. Program Chair-Elect – Jennifer Kadlowec
    - Good attendance as sessions. Headcounts for various sessions:
      - ◆ Session 1168: 37

- ◆ Session 1368: 112
  - ◆ Session 2468: 53
  - ◆ Session 3268: 62
  - Jennifer Kadlowec and Christine Masters will try to coordinate with Mechanical Engineering for sessions related to Statics
  - Brian Self: Could we send out guidelines for moderators?
- C. Secretary – Tim Philpot
- No report.
- D. Treasurer – Madhu Vable
- Fiscal year starts on October 1.
  - Last year, ending balance was \$4,118. The division spent \$2,200 and publishers contributed \$2,500.
  - Have we received any contribution this year from John Wiley? A follow-up may be necessary.
  - We need to talk to Elliot about McGraw-Hill’s contribution for the New Educator Award. Uncertain whether the contribution is dependent on the number of award recipients or whether the same lump sum amount is given each year.
- E. Awards Committee (see item 3)
- F. Membership Committee – (Denton)
- Current membership in division is 416. There have been 12 new applicants at the conference.
  - Flyer to be included in newsletters.
  - Soliciting ideas for increasing membership
    - ◆ Distinguished lecturers: one suggestion – Timoshenko Award winners
5. Announcements and Appointments (Flori)
- A. Christine Masters is Program Chair – Elect
- B. Tim Philpot and Anna Dollar nominated for executive committee. Motion to affirm approved.
- C. Standing Committees
- Membership: N. Denton (chair), J. Rencis, B. Self
  - Awards: R. Engel (chair), A. Kaw, R. Norton
  - Software: N. Madsen, A. Bhatti, T. Philpot
  - Solid Mechanics: A. Dollar, M. Hardin, R. Rosca
  - Dynamics: P. Cornwell, R. Flori, B. Epureanu
  - Fluids: R. Carpick, W. Krone, P. Joyce
  - Suggestion: In the coming year, we should review our bylaws with regard to the ASEE template. Should we consider renaming fluids group, e.g., Emerging Areas?
    - ◆ In the spring newsletter, we’ll need to announce at least 30 days prior to conference.
    - ◆ We would need 2/3 vote of members in attendance at annual business meeting.
  - Paul Steif is the new secretary
    - ◆ Should take advantage of ASEE listserv
  - Call for papers to Civil and Mechanical Divisions for mechanics topics.
6. PIC Report (Magill/Flori)
7. PIC Chair Report (Frank Croft, Ohio State University)
- A. Distinguished Teaching Medal being initiated
- B. K-12 activities have exploded on the scene
- K-12 workshop will run again next year
- C. Pre-college constituent committee (more than 300 members) will be named as a division
- D. American Association of Engineering Societies (AAES): ASEE will pull out of AAES
- E. This year’s conference
- 1429 papers
  - There were 2,002 registrants before conference started. With walk-ups, this could registrations could total around 2,150

- F. ASEE will petition ABET to become the lead society for accrediting programs such as General Engineering, etc.
  - G. Each division is asked to review current by-laws
  - H. Retiree registration (1/2 price) will be extended for three more years
  - I. Upcoming convention sites: Portland (2005), Chicago (2006), Hawaii (2007), Pittsburg (2008), Austin (2009).
  - J. ASEE is in good shape financially.
    - ASEE has \$29,000 for all divisions
    - Breaks down into PIC by membership
  - K. Best paper competition at this conference
    - PIC Best Paper
    - Zone Best Paper
8. 2003 Program Discussion (Mehta)
- A. Suggestion to select moderators at the beginning of the process so that moderators can help to organize the sessions.
  - B. Denton: Suggest that we go ahead and schedule a reception without a sponsor.
  - C. Mehta: Prentice Hall as possible sponsor
9. Old Business
- None
10. New Business
- A. Operating Manual
  - B. Increasing Membership
    - Increased involvement of newer members in committees
  - C. Workshop Proposal
    - Chris Jenkins, South Dakota School of Mines and Technology
    - Requests that Mechanics Division sponsor a half-day workshop (morning) (\$25 per person minimum charge)
    - Perhaps Sudhir, Scott, Paul, and Anna could also offer a half-day workshop (afternoon)
11. Other Business
- A. Division Profile
    - We do have one in place but it perhaps needs to be revised, particularly with regard to assessment.
    - Nancy to forward the current profile to the nominating committee.
12. Passing of the Banner (Mehta)
13. Meeting Adjourned at 2:12 pm (Danielson)

# AMERICAN SOCIETY FOR ENGINEERING EDUCATION

Portland, Oregon

June 12-15, 2005



## Mechanics Division

The Mechanics Division of ASEE is soliciting papers and reviewers for the 2005 Annual Conference that will be held in Portland, Oregon, from June 12-15, 2005. The division awards best session presentation award for each of its sessions, overall best division paper, and overall best division presentation. Papers and presentations from all areas of engineering mechanics, vibrations, and acoustics will be considered. Suggested topics include but are not limited to:

- Trends in Mechanics Education: global mechanics' education issues
- Projects and Labs: innovative activities in mechanics' classes and laboratories
- Statics and Dynamics: improving statics and dynamics instruction
- Mechanics of Materials: improving mechanics of materials classes
- Innovations in Teaching Mechanics: classroom, laboratory or computer-based teaching innovations

Possible Mechanics Division Sessions at the conference are as follows. If you wish, you may suggest the session (like A, C, etc) for which you are submitting the abstract or would like to review the papers.

### A. Trends in Mechanics Education

This session takes a global view of mechanics education issues that transcend classroom, such as overall curriculum changes, historical perspectives, results of surveys, and future trends.

### B. Innovative Hands-on Projects and Labs

This session focuses on innovations in hands-on activities in conventional and non-conventional mechanics classes and laboratories.

### C. Improving Statics and Dynamics Instruction

This session focuses on efforts to improve statics and dynamics instruction, including in-class, hands-on, and technology-based activities.

### D. Improving Mechanics of Materials Instruction

This session focuses on efforts to improve mechanics of materials classes at undergraduate and graduate levels through the use of design projects, innovative teaching methods, hands-on activities, and computer-based tools.

### E. Innovations in Teaching Mechanics

This session focuses on innovative classroom and laboratory teaching methods and strategies relating to the broad area of mechanics.

## Call for Papers (continued)

Abstract Deadline: **October 6, 2004**  
Full-Length Paper Deadline: **January 5, 2005**

Abstract submission will begin on August 6, 2004 and **end at 3:00 p.m. EST on October 6**. All abstracts must be submitted electronically through the CAPS system at [www.asee.org/caps](http://www.asee.org/caps). Each abstract should be between 300-350 words and submitted to the ASEE Division that best suits the content of the abstract. Please note that authors may not submit the same abstract to multiple divisions. If accepted, complete papers will also be submitted via CAPS. Please check the CAPS website or *Prism* magazine for submission deadlines.

## CAPS

### Deadlines

#### Abstract Deadlines

- August 6 - Abstract submission opens via CAPS.
- October 6 - Abstract submission closes.
- October 8 - Abstract review begins.
- October 22 - Abstract review ends.

#### Paper Deadlines

- November 16 - Draft paper Submission opens via CAPS.
- January 5 - Draft paper submission ends.
- January 12 - Draft paper review begins.
- February 2 - Draft paper review ends.
- February 7 - Final paper submission begins via CAPS.
- March 2 - Final paper submission ends.
- March 9 - Final Reviews of Accepted pending changes papers ends.

Questions may be directed to the 2004-05 Mechanics Division Program Chair:

Dr. Jennifer Kadlowec  
Associate Professor, Mechanical Engineering  
201 Mullica Hill Rd.  
Glassboro, NJ 08028  
Phone: (856) 256-5344  
E-mail: [kadlowec@rowan.edu](mailto:kadlowec@rowan.edu)

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Prof. Nancy L. Denton  
Purdue University  
Knoy Hall of Technology, Room 137  
401 North Grant Street  
W. Lafayette, IN 47907-2021

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**AMERICAN SOCIETY OF ENGINEERING EDUCATION**  
**\*\* MECHANICS DIVISION \*\***

Dear Colleague:

If you have an interest in mechanics education, the ASEE Mechanics Division would like to invite you to become a member of our division. Current activities of the division include examining the role of mechanics in undergraduate curricula and encouraging the development and success of mechanics faculty. For your first year of membership, the \$2.00 *division dues will be waived*. If you are interested in joining, please fill out the form below and return it to the address on the reverse side, send the information via e-mail to [dentonn1@purdue.edu](mailto:dentonn1@purdue.edu), or mail the form. During the next few months, you will be sent information regarding various divisional activities. We look forward to hearing from you!

Sincerely,

Joseph J. Rencis	Nancy Denton
University of Arkansas	Purdue University
Membership Committee of ASEE Mechanics Division	

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Department: \_\_\_\_\_

University/Company: \_\_\_\_\_

Address: \_\_\_\_\_

Office Phone #: \_\_\_\_\_

FAX #: \_\_\_\_\_

E-mail: \_\_\_\_\_

Send Division Information (check one): \_\_\_\_\_ US Mail                      \_\_\_\_\_ E-mail (*Preferred*)

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**2005 Mechanics Division ASEE Annual Conference Call for Papers**

The Mechanics Division of ASEE is soliciting papers and reviewers for the 2005 Annual Conference that will be held in Portland, Oregon, from June 12-15, 2005. The division awards best session presentation award for each of its sessions, overall best division paper, and overall best division presentation. Papers and presentations from all areas of engineering mechanics, vibrations, and acoustics will be considered. Suggested topics include but are not limited to:

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- Mechanics of Materials: improving mechanics of materials classes
- Innovations in Teaching Mechanics: classroom, laboratory or computer-based teaching innovations

Submit by October 6<sup>th</sup> at the ASEE website ([www.asee.org/caps](http://www.asee.org/caps) ).

<b>Chair:</b>	Scott Danielson, Arizona State University East (480) 727-1185, sdanielson@asu.edu
<b>Past Chair:</b>	Sudhir Mehta, North Dakota State University (701) 231-7871, sudhir.mehta@ndsu.nodak.edu
<b>Program:</b>	Jennifer Kadlowec, Rowan University (856) 256-5344, kadlowec@rowan.edu
<b>Program Chair Elect:</b>	Christine Masters, Penn State University (814) 865-6674, cbm100@psu.edu
<b>Secretary:</b>	Paul Steif, Carnegie Mellon University (412) 268-3507, steif@cmu.edu
<b>Treasurer:</b>	Madhukumar Vable, Michigan Technological University (906) 487-2747, mavable@mtu.edu
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