



# Mechanics Division

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## ***NEWSLETTER***

May 2002

Chair: Michael A. Magill  
Secretary: Timothy A. Philpot

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### Mechanics Division of ASEE

#### Message From the Chair

Another academic year is coming to an end, so it must be time to finalize your plans for the **2002 ASEE Annual Conference and Exposition** in Montreal, Canada. The dates this year are June 15-19 and you can find more information at <http://www.asee.org/conferences/annual2002/>. Let me encourage you to register early to take advantage of the cost savings.

Ralph Flori has developed an excellent program, so I hope you can attend! Anyone who is new to the Mechanics Division or is attending the ASEE Conference for the first time should look for the Mechanics Division banner at the picnic on Sunday evening. This is an excellent time to make friends in the mechanics education community. On Monday evening, everyone is invited to attend a reception hosted by Vishay Measurements Group. The Mechanics Division Banquet is on Tuesday evening and our guest speaker is Wallace Fowler, a long time friend to the engineering education community. During the banquet, we'll be honoring several of our colleagues for their contributions to mechanics education. All mechanics educators are encouraged to attend. Even if you don't want to eat, please make plans to drop in after the meal to participate in the ceremonies and to hear Dr. Fowler's remarks.

We also will have two business meetings: the executive committee business meeting/lunch on Monday and the division business meeting/lunch on Wednesday. Everyone is welcome to attend either meeting. If you don't want the ticketed meal, please come by for the meeting after the meal...we need your input and your ideas.

It's been an honor to serve as this year's chair for the Division. I'm amazed at the long-term stability and continuous membership support within our Division. The Mechanics Division has a long history of serving the engineering mechanics community. And finally, I'd like to thank the individuals on the executive committee for their incredible support this year. You all are a great bunch...thanks!

See you in Montreal!

Michael Magill  
Mechanics Division Chair, 2001-2002  
[mamagill@tech.purdue.edu](mailto:mamagill@tech.purdue.edu)

# **ASEE Annual Conference, Montreal, 2002 – Mechanics Division Events**

## **2002 ASEE Annual Conference and Exposition**

### *Mechanics Division Awards Recipients*

The Mechanics Division Awards Committee is pleased to announce the recipients of our division awards for the 2002 ASEE Annual Conference.

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

Professor Alan Wineman – University of Michigan

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

Professor Brian Self – United States Air Force Academy

Major Joseph Hanus – United States Military Academy

Professor John Shaw – University of Michigan

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

Professor Nancy Denton – Purdue University

#### **The Mechanics Division Best Presentation Award (2001 Annual Conference)**

Professor Robert Carpick – University of Wisconsin-Madison

#### **The Mechanics Division Best Paper Award (2002 Annual Conference)**

Professors Ing-Chang Jong, Rick J. Couvillion, Larry A. Roe – University of Arkansas

Please join me in congratulating these individuals.

### *MECHANICS DIVISION AWARDS BANQUET*

The Annual Mechanics Division Awards Banquet is scheduled for Tuesday, June 18 at 6:30 pm – 8:30 pm. This banquet features presentations of the Archie Higdon Distinguished Educator Award, the Beer and Johnston Outstanding New Mechanics Educator Award, the James Meriam Service Award, and Best Paper and Presentation Awards. This event is open to members, prospective members, guests, and friends. The banquet speaker is Wallace Fowler, mechanics educator and past ASEE president. Please join us. We're anticipating a fun evening!

# ASEE Annual Conference, Montreal, 2002 – Mechanics Division Events

## Monday, June 17

- Session 1468**      **12:30-2:00 PM**      **Location:** Wyndham Hotel, Auteuil B  
**Title:** *Executive Committee Meeting/Lunch*  
**Moderator:** Mike Magill, Mechanics Division Chair
- Session 1768**      **6:30-8:00 PM**      **Location:** Wyndham Hotel, Auteuil A & B  
**Title:** *Mechanics Division Reception*  
**Sponsor:** Vishay Measurements Group      **Cost:** Free  
**Moderators:** Mike Magill, Marti Spalding

## Tuesday, June 18

- Session 2168**      **7:00-8:15 AM**      **Location:** Palais des Congres, 516B  
**Title:** *Innovative Lab and Hands-On Projects*  
**Moderator:** Wendy Crone

### Authors/Paper Titles:

- Anant Kukreti** Virtual Laboratory Modules for Undergraduate Strength of Materials Course  
**Anna Dollar** Understanding Internal Loading with the Help of Hands-on Experiences.  
**Brian Self** A Senior Research Project Applied Across the Curriculum  
**Ismail Orabi** Application of LabVIEW for Undergraduate Lab Experiments on Materials Testing  
**William Szaroletta** Expanding Learning Opportunities in a Combined Stress Laboratory  
**William Szaroletta** Four Point Bending: A New Look

- Session 2268**      **8:30-10:15 AM**      **Location:** Palais des Congres, 516B  
**Title:** *Trends in Mechanics Education*  
**Moderator:** Brian Self

### Authors/Paper Titles:

- L. Glenn Kraige** The Role of the Kinetic Diagram in the Teaching of Sophomore-Level Rigid-Body Dynamics – Past, Present, and Future  
**Wendy Crone** Using an Advanced Mechanics of Materials Design Project to Enhance Learning in an Introductory Mechanics of Materials Class  
**Ing-Chang Jong** Meandering Road from Dynamics to Thermodynamics and Vice Versa: What Is Work?  
**Joseph Rencis** A National Study of Introductory Mechanics Courses  
**Sudhir Mehta** Math-Statics Baseline (MSB) Test: Phase I  
**John Duke** Assessing Undergraduate Mechanics Courses

- Session 2368**      **10:30 AM-Noon**      **Location:** Palais des Congres, 516B  
**Title:** *Improving Statics and Dynamics Classes*  
**Moderator:** Jennifer Kadlowec

### Authors/Paper Titles:

- Joseph Hanus** Daily Fundamentals – Your Daily Dose of Mechanics Exercises  
**Christine Masters** Spicing up Statics Lectures With Concept Questions and ‘Around Town’ Assignments  
**Mark Maughmer** Why Do We Lecture?  
**Paul Steif** Enriching Statics Instruction with Physical Objects  
**Nancy Hubing** Interactive Learning Tools: Animating Statics  
**Kurt Gramoll** Web Based System For Basic Engineering Courses With Variable Problem Generation and Integrated Communication

# ASEE Annual Conference, Montreal, 2002 – Mechanics Division Events

## Tuesday, June 18 (continued)

**Session 2468**      **12:30 – 2:00 PM**      **Location:** Palais des Congres, 516B  
**Title:** *Improving Mechanics of Materials Classes*  
**Moderator:** Christine Masters

### Authors/Paper Titles:

**Daniel Jensen** Creating A Visually Rich, Active Learning Environment For Teaching Mechanics Of Materials  
**Cliff Lissenden** Design Project for Advanced Mechanics of Materials  
**Timothy Philpot** Interactive Learning Tools: Animating Mechanics of Materials  
**Kevin Sutterer** Sophomore-Year Project Design in Mechanics of Materials  
**Jaspal Sandhu** Active Engagement Pedagogy for an Introductory Solid Mechanics Course  
**Paul Steif** Courseware for Problem Solving in Mechanics of Materials

**Session 2768**      **6:30 – 8:30 PM**      **Location:** Wyndham Hotel, Picardie A  
**Title:** *Mechanics Division Annual Awards Banquet*  
**Moderator:** Mike Magill  
**Speaker:** **Dr. Wallace Fowler**, Past President of ASEE, Professor of Aerospace Engineering and Engineering Mechanics at UT-Austin

**Note:** All mechanics educators are invited and encouraged to come to this awards banquet, even if you do not wish to eat. The meal will begin at 6:30 PM, and the awards ceremonies and speaker will begin at around 7:15 PM.

## Wednesday, June 19

**Session 3468**      **12:30-2:00 PM**      **Location:** Wyndham Hotel, Alfred Rouleau C  
**Title:** *Mechanics Division Lunch and Annual Business Meeting*  
**Moderator:** Mike Magill, Mechanics Division Chair

**Note:** All mechanics educators are invited and encouraged to come to this meeting, even if you do not wish to eat lunch. The lunch will begin at 12:30 PM, and the business meeting will begin at around 1:00 PM.

**Session 3568**      **2:30 – 4:15 PM**      **Location:** Palais des Congres, 516B  
**Title:** *Innovations in Teaching Mechanics*  
**Moderator:** Ralph Flori

### Authors/Paper Titles:

**Wendy Reffeor** Incorporating Design in an Introduction to Dynamics Course  
**Marilyn Smith** A Building-Block Approach to Dynamics  
**Ralph Flori** Incorporating Web-Based Homework Problems in Engineering Dynamics  
**Cliff Lissenden** Applications of Finite Element Analysis for Undergraduates  
**Helen Kuznetsov** Technology-based Innovative Teaching Methods

## **Comments on the 2002 Mechanics Division Program**

This year over thirty abstracts were submitted to the Mechanics Division. Most were accepted. Twenty eight papers were submitted and will appear in the proceedings. The five paper sessions will include twenty nine presentations, which is an average of six presentations per session. Speakers, with less time than in past years,

## ASEE Annual Conference, Montreal, 2002 – Mechanics Division Events

must focus their presentations only on the unique features/outcomes of their work. They cannot give lengthy background information. Session attendees, if they want more details, must refer to the written papers and/or request additional information directly from the authors. We opted for this policy in order to involve more authors, and to expose our attendees to a wider array of work, even if less presentation time is available. The papers are well done and should be of interest to mechanics educators.

Another interesting feature of this year's program is that ASEE gave us zero paper sessions on Monday, FOUR paper sessions on Tuesday (one right after the other!), and one paper session on Wednesday afternoon. Though we requested a different schedule, ASEE chose to re-distribute them this way due to room availability. The good news about this schedule is that it is easy to remember and easy to set aside a block to attend Mechanics paper sessions. Of course, the downside is that our minds may be Jello by Tuesday afternoon!

Please plan to attend the Mechanics division business meeting/lunch on Wednesday, and the annual awards banquet on Tuesday evening. Also, on Monday evening at 6:30 PM, plan to attend the annual Mechanics Division reception (free!), graciously sponsored by Vishay Measurements Group and hosted, as always, by Ms. Marti Spalding.

If you have any questions about the schedule, please ask. See you in Montreal.

Ralph Flori (reflori@umr.edu)  
2002 Program Chair

<b>2002 MECHANICS DIVISION POCKET SCHEDULE, MONTREAL</b>				
Day	Session	Title	Time	Room
<b>Monday, June 17</b>	<b>1468</b>	Mechanics Div Exec Committee Meeting/Lunch	12:30-2:00 PM	Wyndam Hotel, Auteuil B
	<b>1768</b>	Mechanics Division Reception	6:30-8:00 PM	Wyndam Hotel, Auteuil A&B
<b>Tuesday, June 18</b>	<b>2168</b>	Innovative Lab & Design Projects	7:00-8:15 AM	Palais des Congres, 516B
	<b>2268</b>	Trends in Mechanics Education	8:30-10:15 AM	
	<b>2368</b>	Improving Statics and Dynamics Classes	10:30 AM - Noon	
	<b>2468</b>	Improving Mechanics of Materials Classes	12:30-2:00 PM	
	<b>2768</b>	Mechanics Division Annual Awards Banquet	6:30-8:30 PM	Wyndam Hotel, Picardie A
<b>Wednesday June 19</b>	<b>3468</b>	Mechanics Division Lunch/Business Meeting	12:30-2:00 PM	Wyndam Hotel, Alfred Rouleau C
	<b>3568</b>	Innovations in Teaching Mechanics	2:30-4:15 PM	Palais des Congres, 516B

### **Announcement: 14<sup>th</sup> U.S. National Congress of Applied Mechanics**

The Engineering Science and Mechanics Department at Virginia Tech is hosting the 14<sup>th</sup> U.S. National Congress of Applied Mechanics, June 23-28, 2002 in Blacksburg, VA. There will be sessions on mechanics education as well as technical sessions. For more information please visit our website: <http://www.esm.vt.edu/usncam14/>

# AMERICAN SOCIETY FOR ENGINEERING EDUCATION ANNUAL CONFERENCE

Nashville, Tennessee

June 22-25, 2003



## MECHANICS DIVISION

The Mechanics Division of ASEE is soliciting papers for the 2003 Annual Conference that will be held in Nashville, Tennessee, from June 22-25, 2003. Papers and presentations from all areas of engineering mechanics and vibrations will be considered. Suggested topics include:

- Basic mechanics in the integrated curriculum.
- Design projects for fundamental engineering mechanics courses.
- Innovative teaching methods in mechanics including software development and multimedia tools.
- Laboratory and experiment developments in mechanics education.

*Abstract Deadline:* November 1, 2002

*Full-Length Paper Deadline:* December 1, 2002

Authors must submit abstracts and full-length papers via the ASEE CAPS system, which may be accessed at: <http://www.asee.org/conferences/CAPS/System/index.cfm>. Authors are also encouraged to send an electronic version of the abstract and full-length paper via e-mail to [sudhir\\_mehta@ndsu.nodak.edu](mailto:sudhir_mehta@ndsu.nodak.edu).

Questions may be directed to the 2002-03 Mechanics Division Program Chair:

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