



Mechanics Division

NEWSLETTER

February 2000

Chair: Joe Rencis

Secretary: John J. Lesko

The New School Year 1999-2000

Yet again another spring semester has begun. As I know the demands of the school year are many, I encourage you to take a moment and review this issue of the ASEE Mechanics Division Newsletter.

Joe Rencis has information regarding a national survey on undergraduate mechanics education; please take a moment and review the message from the chair for more details.

Also included in this issue is a summary of the upcoming ASEE Annual Conference in St. Louis, Missouri, Mechanics Division Program as organized by Robert Hastie. Please take some time to consider the papers and activities planned. We look forward to seeing you at the meeting for a time of fellowship and learning.

News on “What’s New in Mech Ed” comes to use from the 1999 ASEE Best Paper Award winners Sudhir Mehta and Scott Danielson, North Dakota State University, for their paper titled, “Teaching Statics Dynamically.”

We continue to appreciate all of those folks that have helped to reduce the cost of sending the newsletter by requesting an e-mail version of the newsletter. We (Bev and I) will also try to get a PDF version out to you all as well. Thus, if you are currently receiving the printed version and are willing to receive an e-mail/PDF version instead, please send me (jlesko@vt.edu) your e-mail address. Sending e-mail versions is less work and less expensive than producing a printed copy. The money saved on printing and postage can then be used by the division for other purposes.

With best regards,
Jack Lesko
Mechanics Division Secretary, jlesko@vt.edu

In this newsletter:

- 1) Message from the Chair
- 2) Conference Update
- 3) What’s New in Mech Ed
- 4) 1999/2000 Mechanics Division Officers/Executive Committee Members

MESSAGE FROM THE CHAIR

Plans are being finalized for the 2000 ASEE Annual Conference, to be held in St. Louis, Missouri, June 18-21. Our Program Chair, Bob Hastie, is finishing the review of papers and is lining up the various sessions for the Mechanics Division. You may find a preview of the program in this Newsletter.

A national survey was sent out in December on undergraduate mechanics education. The survey is looking at the status of undergraduate mechanics education in the year 2000 and is a follow up to ones that were carried out in 1965, 1975, and 1985. The survey is being carried out by the Mechanics Division Committee on Curriculum Emphasis in Basic Mechanics. The members of the committee are Don Morris, chair (Virginia Tech), Elliot Eisenberg (Penn State), Ralph Flori (University of Missouri-Rolla), Lia Brillhart (Triton College), and Joe Rencis (WPI). The committee would like to thank Matthew Luszcz and Christopher Melfi, undergraduates at Worcester Polytechnic Institute, who helped develop and mail the survey. The committee would also like to thank Ing-Chang Jong (University of Arkansas), Renta Engel (Penn State), Kurt Gramoll (University of Oklahoma), and Nels Madsen (Auburn) for their valuable input on the preliminary draft of the survey.

Responses are coming in right now. If you or your university has not received a copy of the survey, please contact me at jjrencis@wpi.edu and I will mail, fax, or e-mail you a copy. You can also download a Word 6/95 file at <http://jjrencis.wpi.edu/2000MechanicsSurvey/>. The survey was mailed to all ABET programs in the United States. It is still not too late to mail in the survey!

I would also like to say goodbye to Major Jim Solti of U. S. Air Force Academy. Jim has served as our past Treasurer and did a great job during his tenure. He briefly was on the Executive Committee this year. Unfortunately, Jim has been reassigned overseas and I wish him our best. I would like to welcome Martin Pike from Purdue University who will join the Executive Committee in place of Jim.

I strongly encourage you to recognize the outstanding efforts of your colleagues, both longtime and recent additions to mechanics education. Take time out to nominate someone you admire for their past and present contributions to mechanics education for the Archie Higdon Distinguished Educator Award, and to encourage the potential of a promising new colleague as a New Mechanics Educator. Details for both nominations are in this newsletter.

Joseph J. Rencis
Mechanics Division Chair, 1999-2000

CONFERENCE UPDATE

First, I'd like to thank all the authors and reviewers who struggled and managed to work with the new electronic CAPS program for submitting and reviewing papers. After a few bumps this year I think the system will actually turn into a user friendly efficient system in the future. Our inputs to ASEE will be useful to make the system better, so don't hesitate to give them feedback.

Second, planning for the ASEE Conference, which will be held in St. Louis, Missouri, June 18-21, 2000, is in full swing. Good news is that we had an excellent turnout of abstracts and papers and that I managed to get ASEE to give us an extra session for papers. Bad news is that the time slot they gave us is on Wednesday from 4:30-6:00. Proper advanced planning to take a flight out Thursday (using attendance at this last session as justification to stay over Wednesday) would be appreciated to show support for our colleagues presenting in this session. Also, remember that a lot of planning for next year can be accomplished over a beer Wednesday night. The program is coming together with a good mix of papers that I hope will be of interest to our division as well as others. I've listed the session numbers below for your reference.

Finally, don't forget to register and get your room and airline reservations in early.

Hope to see you in St Louis.

Bob Hastie
2000 Program Chair

SESSION 1368 - Innovative Teaching Methods in Mechanics
Monday, 19 June 2000, 10:30-12:00

SESSION 2268 - Integrating the Mechanics Curriculum
Tuesday, 20 June 2000, 8:30-10:15

SESSION 2468 - Answering ABET 2000
Tuesday, 20 June 2000, 12:30-2:00

SESSION 3268 - Design Projects & Lab Developments
Wednesday, 21 June 2000, 8:30-10:15

SESSION 3668 - Innovative Teaching with Multimedia II
Wednesday, 21 June 2000, 4:30-6:00

WHAT'S NEW IN MECH ED

Statics: The Next Generation

*Sudhir Mehta and Scott Danielson
North Dakota State University*

The National Science Foundation recently funded the proposal “Statics: The Next Generation.” This proposal focuses on development, evaluation, and national dissemination of instructional materials for statics based on advances in undergraduate education and educational practices proven to enhance student learning. The three primary activities underway are creating “next-generation lesson plans,” a bank of related concept-based questions for quizzes, and a national information clearinghouse for statics-related materials. These products have potential to be useful to thousands of statics instructors in implementing next-generation strategies for enhancing and assessing student learning.

The “next-generation lesson plans” specify expected student outcomes and include mini-lecture outlines, readiness (or reading) quizzes, cooperative learning activities, and classroom assessment techniques. A bank of conceptual questions for readiness quizzes, cooperative-learning exercises, attention quizzes, and tests supports implementation of the next-generation lesson plans. Questions are being developed to target all six levels of Bloom’s Taxonomy. A web-based National Statics Clearinghouse (NSC) containing information about, and links to, major publications, pedagogical advances, and course materials related to statics is being constructed. The NSC will provide “one-stop shopping” for instructors for finding information and materials focused on improving student learning in statics. Initial drafts of the lesson plans and some concept questions are available on a web site <http://www.ndsu.nodak.edu/instruct/mehta/me221/sched221.html>

Three papers related to this work will be presented at the ASEE National Conference in June 2000. Input / suggestions from the members of the Mechanics Division are most welcome and can be sent to mehta@badlands.nodak.edu or Scott.Danielson@asu.edu.

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