ASEE 2010
ERM Business Meeting
Tuesday, June 22, 2010
Session 2430, 12:30-2:00 p.m.
Louisville Marriott Downtown, Salon G, Kentucky Ballroom
Moderator(s): Matthew Ohland, Purdue University

Minutes

Call to order Matthew Ohland, ERM Chair called the meeting to order at 12:49 PM and asked for introductions of those present.

Introductions

Reid	Bailey	Univ. of Virginia	rrbailey@virgina.edu
Ken	Ball	Virginia Tech	ball@vt.edu
Mary	Besterfield-Sacre	Pittsburgh	mbsacre@engr.pitt.edu
Maura	Borrego	Virginia Tech	mborrego@vt.edu
Dan	Budny	Univ. of Pittsburgh	budny@pitt.edu
Elizabeth	Cady	Nat. Acad. Of Engr	ecady@nae.edu
Adam	Carberry	Tufts University	adam.carberry@tufts.edu
Monica	Cardella	Purdue University	mcardell@purdue.edu
Alan	Cheville	Oklahoma State	kridnix@okstate.edu
Michael	DeAntonio	New Mex State Univ.	mdeanton@nmsu.edu
Kay C.	Dee	Rose-Hulman	dee@rose-hulman.edu
Chrys	Demetry	WPI	cdemetry@wpi.edu
Susan	Donohue	Univ. of Virginia/CASEE	susand@virginia.edu
Elizabeth	Eschenbach	Humboldt State Univ	beth.eschenbach@humboldt.edu
Cindy	Finelli	Univ. of Michigan	cfinelli@umich.edu
Norman	Fortenberry	Nat. Acad. Of Engr	nfortenb@nae.edu
Tirupalavanam	Ganesh	Arizona State Univ.	tganesh@asu.edu
Denise	Grant	Clemson Univ.	deniseg@clemson.edu
Trevor	Harding	Cal Poly	tharding@calpoly.edu
John	Heywood	Trinity College - Dublin	heywood@eircom.net
Karen	High	Oklahoma State	Karen.high@okstate.edu
Beth	Holloway	Purdue	holloway@purdue.edu

Archie	Holmes	University of Virginia	archieholmes@virginia.edu
Margaret	Huyck	Illinois Institute of Tech	huyck@iit.edu
P.K.	Imbrie	Purdue University	imbrie@purdue.edu
Aditya	Johri	Virginia Tech	ajohri@vt.edu
Jennifer	Karlin	SD School of Mines	Jennifer.Karlin@sdsmt.edu
Stuart	Kellogg	SD School of Mines	stuart.kellogg@sdsmt.edu
Micah	Lande	Stanford University	micah@stanford.edu
Richard	Layton	Rose-Hulman	Layton@rose-hulman.edu
Julie	Linsey	Texas A&M	jlinsey@tamu.edu
Glen	Livesay	Rose-Hulman	livesay@rose-hulman.edu
Krishna	Madhavan	Purdue University	cm@purdue.edu
Holly	Matusovich	Virginia Tech	matushm@vt.edu
Susan	McCahan	Univ. of Toronto	mccahan@mie.utoronto.ca
Ann	McKenna	Arizona State Univ.	annmckenna01@gmail.com
Devlin	Montfort	Washington State Univ.	dmontfort@gmail.com
S. Scott	Moor	Indiana Purdue - FW	moors@ipfw.edu
Tamara	Moore	Univ. of Minnesota	tamara@umn.edu
Jim	Morgan	Texas A&M	jim-morgan@tamu.edu
Gillian	Nicholls	U. of Alabama - Hunstville	gillian.nicholls@uah.edu
Bill	Oakes	Purdue Univ.	oakes@purdue.edu
Matt	Ohland	Purdue Univ.	ohland@purdue.edu
Barbara	Olds	Colorado School of Mines	bolds@mines.edu
Marisa	Orr	Clemson Univ.	mkorr@alumni.clemson.edu
Sally	Pardue	Tennessee Tech Univ.	spardue@tntech.edu
Alice	Pawley	Purdue Univ.	apawley@purdue.edu
Tershia	Pinder-Graver	Univ. of Michigan	tpinder@umich.edu
Teri	Reed-Rhoads	Purdue University	trhoads@purdue.edu
George	Ricco	Purdue University	gricco@purdue.edu
Larry	Richards	University of Virginia	lgr@virginia.edu
Aidsa	Santiago	University of Puerto Rico	aidsa.santiago@upr.edu
Corey	Schimpf	Purdue University	cschimpf@purdue.edu
Ken	Schug	Illinois Institute of Tech.	kschug@iit.edu

Peter	Schull	Penn State Actoona	pjs18@psu.edu
Karl	Smith	Purdue / U. of Minnesota	ksmith@umn.edu
Ingrid	St. Omer	Univ. of Kentucky	istomer@engr.uky.edu
Ruth	Streveler	Purdue University	streveler@purdue.edu
Michele	Strutz	Purdue University	mstrutz@purdue.edu
Julie	Trenor	Clemson	jtrenor@clemson.edu
Tris	Utschig	Georgia Tech	tris.utschig@cetl.gatech.edu
Chirag	Variawa	University of Toronto	chirag.variawa@utoronto.ca
Matthew	Verleger	Purdue University	mverleg1@purdue.edu
Karinna	Vernaza	Gannon University	vernaza001@gannon.edu
Dave	Voltmer	Rose-Hulman	voltmer@rose-hulman.edu
Mark	Wicks	Kettering University	mwicks@kettering.edu
Charlene	Yauch	Milwaukee School of Engr	yauch@msoe.edu
Sarah	Zappe	Penn State	ser163@psu.edu

68 present.

Officer reports

1. *Chair* – Matthew Ohland

Matt presented the changes to agenda and asked for a motion to accept amendments. Motion by Norm Fortenberry, Seconded by Ingrid St. Omer. Motion passed unanimously.

Chair's report:

Election results

- Daria Kotys-Schwartz, Secretary/Treasurer (July 2010-June 2012)
- Doug Schmucker, Director (July 2010-June 2012) Doug Schmucker is not attending because he is at a curling conference in Texas.
- Shane Brown, Director (July 2010-June 2012)

Nominations / volunteers for appointed positions sought

- FIE Steering Committee (to replace Dan Moore)
- ASEE 2012 Program Chair
- FIE 2010 Helen Plants Committee
- FIE 2010 Ben Dasher Committee (need to start work before the FIE 2010 conference)
- Nominating Committee Chair (need by FIE 2010)

Membership report – raw membership numbers in six-month increments:

- June 01, Oct 01, June 02, … June 09, Oct 09, June 10
- 970, 961, 993, 1000, 1023, 1025, 1106, 1093, 1137, 1105, 1156, 1154, 1226, 1228, 1287, 1310, 1283, 1325

2. *Secretary/Treasurer* – Tamara Moore

Minutes from FIE 2009 Business Meeting submitted for approval with changes. One change to the minutes required. Archie Holmes noted a member present was not listed among the introductions. Tamara will follow up with Archie to add this to the minutes. Motion to pass minutes by Trevor Harding, seconded by Maura Borrego, motion passed unanimously.

Treasurer report as of March 31, 2010 shows $0 in the operating account and $126,358.10 in the Bass account. Historical comparisons are as follows: Treasurer report as of June 30, 2009 in the operating account was $0.00, $1330.00 as of 7/28/08, and $67.25 as of 7/31/07. In the Bass Account, there was $132,001.76 as of 6/30/09, and $94,315.59 as of 7/28/08, and $97,845.26 as of 7/31/07.

3. *Vice-Chair for FIE 2009* (San Antonio, TX, October 2009) Programs – Richard Layton; General Chair – Jeff Froyd

Total 356 talks given for the whole conference.
ERM hosted 12 special sessions and 8 workshops.
I don't have a count on how many sessions and/or papers were specifically ERM-related.

Technical Program Summary
563 Abstracts submitted (783 papers, 30 international, 13 panels, 16 special
369 Manuscripts (full papers and works-in-progress) submitted
355 Manuscripts accepted
12 Special sessions
2 Panel sessions
11 Workshops (1 cancelled after only one person registered)

Attendance Summary
Registrations: 527 (21 no shows and 11 cancellations) (compared to 590 in 2008)
Workshop Attendance: 100 (compared to 83 in 2008)
Awards Banquet Attendance: 115 (compared to 130 in 2008)

Budget Summary
Total Income: $290,359.50
Total Expenses: $285,927.60
Surplus: $4,431.90

4. *Vice-Chair for ASEE 2010* (Louisville, KY, June 20-23, 2010) Programs – Trevor Harding

Trevor submitted a full report for ASEE 2010. See addendum to the minutes for full report. He noted that the ERM sessions that have been held in rooms 215/213 have been flowing into the hallways, which is a fire code violation. He worked with ASEE staff to have the remaining two ERM sessions held in these rooms to be moved. Sessions 2530 and 2531 have been moved to rooms L11 and L14, respectively.

KC Dee presented information for the ASEE 2010 Brouhaha. Tickets sold out on Sunday. She noted that the program was incorrect. The Brouhaha starts at 6:00 PM (not 6:30PM as is written in the ASEE 2010 Conference Book) at the Muhammed Ali Center. The museum will

be open from 6:00-6:30PM. The air conditioning was not working as of the morning of 6/22/10 in the museum, but was not affecting the upper room where dinner would be served. The museum offered a voucher to return if the air conditioning was still broken at the time of the tour, but would allow you to tour in the heat as well. Cocktails begin at 6:30; dinner at 7:30PM. We need to be out of the center at 10:00PM.

KC suggested that we scale back our desires for the Brouhaha or increase the tentative budget. She presented the current desires for Brouhaha, which include: 1) a venue that is not a conference center or hotel; 2) accessibility by persons with varying degrees of mobility, 3) a venue that is very close (less than half a mile) to the conference center or main conference hotel (or else we provide transportation to/from the event); 4) a band or DJ; 5) two drinks included in ticket price and cash bar afterward; 6) vegetarian meal option (and a meal such that someone with other common dietary restrictions, e.g., diabetic, could have a reasonable dinner even when avoiding problematic parts of the meal); 7) some kind of experience that is unique to the location of the conference; and 8) for 110 people. The current tentative budget has been set at $7500. If expectations are not scaled back, KC suggested a tentative budget of $8500.

A motion to change to $8500 for 110 people was submitted by KC Dee, Seconded by Trevor Harding. During the discussion, people felt that Brouhaha had sold out too early for a few years in a row, meaning that more people wanted to come. A suggestion that we leave the budgetary changes up to the Board of Directors was put out. Everyone seemed to agree with this sentiment, so KC withdrew the motion.

5. *Vice-Chair for FIE 2010* (Northern Virginia / Washington, D.C., October 27–30, 2010) Programs – Maura Borrego; General Chair – Larry Richards

The publication record to date for FIE 2010 included

Submissions (by Jan 14, 2010)

500 full papers
260 Works in Progress
Total submissions = 809 (includes workshops, panels, and special sessions)

Review of current status:

386 papers and WIPs
15 workshops
7 mini-workshops
5 panels
12 special sessions

"It's going to be amazing, you totally have to come."

Website is up and running by July 1st. We are going to need 50 session chairs. Send Dan Budny an email with name of session and he will make you program session chair.

NAE's CASEE will support a maximum of 5 New Faculty Fellows. ERM used to pay for all of them (7-12). Motion to suggest that ERM fund $1000 per person for the New Faculty Fellows (which in recent years has been funded by CASEE) was submitted by Larry Richards, Seconded by Trevor Harding. Discussion included that the number be capped at 10

total awards. The motion for supporting NFF hopefully with additional support from CASEE passed unanimously.

6. Vice-Chair for ASEE 2011 (Vancouver, BC, Canada, June 26-29, 2011) Programs – K.C. Dee

   Next year's ERM program
   a. Suggestions and advice are welcome
   b. A new paper submission/review system will be implemented next year – no more 'SmoothPaper.' Thank you, in advance, for your patience as the inevitable kinks in the new system get worked out.

7. Vice-Chair for FIE 2011 (Rapid City, SD, Oct. 2011) Programs – Jim Morgan

   No report as of now. However, it is going to be "fabulous".

8. Vice-Chair for ASEE 2012 (San Antonio, TX, June 17-20, 2012) Programs – Vacant

   Richard Layton nominated himself. Effective immediately.

9. Vice-Chair for FIE 2012 (Seattle, WA, Oct. 2012) Programs – Vacant

   Archie said that if he could find an appropriate co chair, he would consider.

10. Future FIE Conferences

    FIE 2013 will be in Oklahoma City, OK. FIE 2009 accounting was presented to the FIE steering committee on Sunday. More information on locations for FIE 2014 and possibly 2015. FIE 2014 will be in Madrid, so please plan ahead. It will be hosted by Edmundo Tovar and Manuel Castro, who did an excellent job hosting EDUCON 2010 there. FIE has been held outside the US twice previously. In London, the conference lost quite a bit of money, but more recently in Austria, the conference finished in the black.

11. Vice-Chair for Publications – Dan Budny
    No report

Committee reports

1. Apprentice Faculty Grant (AFG) Committee – Julie Trenor

   See addendum for full report on AFG committee activities.

2. Brochure Editor – Glen Livesay

   This year we are putting the brochures on the floor, since there are no tables in rooms. Glen would like to put ASEE fellows associated with ERM on the back of brochure.

3. Distinguished Service Award Committee – Matt Ohland

   The 2010 Distinguished Service Award goes to Rich Felder. He will be presented this award at the Brouhaha this evening. Thank you to Matt Ohland, Cindy Finelli, and Larry Richards for serving on the committee.

4. Benjamin Dasher Award Committee – Susan Donohue

   The 2009 Ben Dasher Award goes to STUDENT BELIEFS ABOUT INTELLIGENCE: RELATIONSHIP TO LEARNING and its authors Glenda Stump, Jenefer Husman, Wen-Ting Chung and Aaron Done. It will be presented at FIE. The abstract follows:

   This study examined the relationship between engineering students' beliefs about intelligence and their self-efficacy for learning course material, their perceived use of deep learning strategies such as collaboration and knowledge building behaviors, and their course grade. Our results showed that self-efficacy, perceived use of collaborative learning strategies, and adaptive personal beliefs about intelligence were predictive of students' use of knowledge building behaviors. Intelligence beliefs were not predictive of course grade. These results contribute to the body of knowledge demonstrating the utility of these motivational concepts for understanding post secondary engineering students' effort and achievement; our results also provide important direction for educators, demonstrating the need to support incremental views of intelligence among engineering students.

   Runners Up Were:
   THE USE OF DIGITAL MANIPULATIVES IN K-12: ROBOTICS, GPS/GIS AND PROGRAMMING by Gwen Nugent, Brad Barker, Neal Grandgenett, and Vaicheslav Adamchuk

   And

   OUTSIDE THE CLASSROOM: GENDER DIFFERENCES IN EXTRACURRICULAR ACTIVITIES OF ENGINEERING STUDENTS by Debbie Chachra, Helen L. Chen, Deborah Kilgore, and Sheri Sheppard

   Thank you to Lyn Slovasky and Arnold Pierce who also served on the committee.

5. Helen Plants Award Committee – Shane Brown
   The 2009 Helen Plants Award will go to the Special Session - *DEVELOPING ENGINEERING STUDENT'S PHILOSOPHICAL INQUIRY SKILLS* – and its authors Russell Korte and Karl Smith. A description of the session follows. It will be presented at FIE. Thank you to the committee members who served this year.

   Special session - developing engineering student's philosophical inquiry skills
   This special session provides an opportunity for participants to engage in a reflective dialogue on the topic of developing student's philosophical inquiry skills. The session will

provide participants with a cooperative inquiry environment intended to help engineering educators identify, evaluate, and synthesize a more coherent view of engineering education from a philosophical perspective. Also, this session will advance the ongoing discussion about the philosophical underpinnings of engineering education practice. Note: this special session is designed as a partner session to another special session: Heywood, Grimson, & Korte, Teaching Philosophy in Engineering Courses, Session M4A and a supporting paper by Heywood, Grimson, & Korte, Teaching Philosophy to Engineering Students, also in Session M4A.

6. Best ERM Paper Award for the 2010 ASEE Conference – Maura Borrego

   The 2010 ASEE ERM Best Paper is #2010-1537: IN THE EYE OF THE BEHOLDER: DEFINING AND STUDYING INTERDISCIPLINARITY IN ENGINEERING EDUCATION" by Lisa Lattuca and David Knight. Thanks to Jennifer Karlin for chairing the selection committee this year, and to Georgette Michko, Joachim Walther, and Nadia Kellam for serving on the selection committee.

7. Nominating Committee – Richard Layton

   The nominating committee this year is Richard Layton (chair), Jennifer Karlin, and Jim Morgan. The nominees for Secretary-Treasurer were Daria Kotys-Schwartz and Matthew Verleger. Daria Kotys is the winner. The nominees for director (two positions) were Shane Brown, Doug Schmucker, and Whitney Lutey. Shane Brown and Doug Schmucker are the winners. A fourth nominee for Director, Don Carpenter, did not appear on the ballot because of a mistake I made. Don has graciously accepted my apology and has agreed to be included among the nominees next year. A total of 55 ERM members voted in this election.

8. PIC IV Representative – Noel Schulz

Report from the PIC IV meeting, 4:30-6:00 pm, Sunday, June 20, 2010, KICC, Room L3

- ERM's ASEE distribution is $1/member/year for a total of $1325. The last time these were reapportioned was 2005, but we haven't had a major shift since in membership since then, so it didn't change much. Our membership and thus our enrollment increased by about 200 people / $200.
- Relative to increase in lapsed members, I shared Holly Matusovich's findings that there are two hitches regarding lapsed membership -- lapsed memberships must be renewed by phone or mail, not online; also, when lapsed memberships are renewed, institutional memory is lost in that division memberships are not renewed.
- Panel submissions have been revised and now accept bios in the usual way. Basically, they want more definitive information about the panel so the PIC Chairs can be able to make decisions. New ASEE system - Monolith is independent, will include special features that have been desired for some time (like making sure authors aren't in two sessions at once), and was designed especially for ASEE. Monolith could set a (division specific?) minimum number of reviews in order to move forward. Submit reviewer

guidelines to Bev and Noel. ASEE session review data back more quickly (to PIC Chairs to Program Chairs).

- There was a time that sessions got restricted because of a smaller venue. There were some slots where there were some sessions that we didn't run in parallel -- were we told that we couldn't? Noel / Bev will check if venues can support parallel sessions so ERM can get its session count back up to two per session.
- Frank Huband is stepping down after 20 years.
- Hosting website at HQ? Dan would still maintain.
- Bylaws changes using tracked changes to be submitted to PIC IV Chair.
- Monolith - will have division features - automated emails to new members.
- Getting spreadsheet from ASEE - Dwight Wardell, Tim Manicom, Adam Solove at ASEE - Noel will check. Matt will send a list of what we want. Prefer query capability and stored queries, particularly custom auto-generated monthly reports.

Additional reports

1. FIE Steering Committee – Cindy Finelli, Jennifer Karlin, Dan Moore

   FIE 2010 will be in the Washington, DC northern VA area. In 2011, it will be in Black Hills, SD. Reception will be held at Mt. Rushmore.

2. National Effective Teaching Institute (NETI) – Rich Felder

   - The 20th NETI was presented on June 17-19 to 56 participants. Rebecca Brent, Rich Felder, and Mike Prince were joined in the presentation by this year's NETI Fellow, Stephanie Farrell of Rowan University.
   - The NETI has now reached 1048 engineering and engineering technology faculty members from 220 different schools.
   - The latest issue of JEE contains an evaluation of the impact of the NETI on its participants over a 15-year period and a discussion of the implications of the results for engineering faculty development.
   - There has been something of a trend that nominees to the NETI are increasingly being selected from new faculty and from faculty who have been referred for teaching improvement.

3. New ASEE Fellows

   Bill Oakes and Teri Reed-Roads. Congratulations!

Call for volunteers

FIE Steering Committee (to replace Dan Moore), ASEE 2012 Program Chair, FIE 2010 Helen Plants Committee, FIE 2010 Ben Dasher Committee (need to start work before the FIE 2010 conference).

Appointments: Julie Trenor is interested in continuing as AFG Chair. I neither want to trap her into a life appointment nor do I want to push out the most qualified person. Thank you for your service, Julie. If someone else is interested in being involved (and potentially becoming AFG Chair in a future year), please let me know. PK Imbrie has expressed an interest in serving on the FIE Steering Committee.

Ben Dasher volunteer: Dave Voltmer. (Thanks, Dave!)

Old Business

- Interest in an open ERM listserve – Marie Paretti
- Action on ASEE comments
    - Has ASEE taken better care of vegetarians?
        - No comment
    - Exhibitor spamming is down
        - Only a little bit
    - Name tag readability?
        - Not better
- Welcoming new members – Lisa McNair
    - Not here
- Checking on lapsed members – Holly Matusovich
    - Ask Holly
- Leveraging ERM surplus to invest in long-term objectives – Sandy Courter
    - Not here
- Library access for JEE: On Wednesday, Jack Lohmann will be making a presentation to the ASEE BOD on a number of matters and among them is broader access to JEE. If they concur with my recommendations we should soon have more ways for access to JEE. However, it will not likely be operational until the release of our new Web site in January 2011.

New business

- Proposal from John Heywood, Trevor Harding, Russell Korte, and Bill Grimson for a special FIE 2010 Pre-Conference Session, "Philosophy and its Bearing on Engineering Education."
    - Amendment to paragraph 6: One of those papers won Helen Plants award
    - Board will stay after to consider this proposal.

  Results of the Board Meeting Following the Business Meeting: Board stayed after voted 4 to 3 in favor of the proposal. $6550. Please change to invitational. If IEEE says no, we still offer this money. You must tell us how you are adjusting budget. Matt Ohland can approve budget.
- We will be fixing the Bylaws (to remove the "Vice-Chair for Teacher Development") and getting our presence communicated consistently on different websites.
- ERM / JEE collaboration: Partnership with JEE in planning special events at Vancouver ASEE as JEE celebrates its 100th anniversary next year. Three major events planned: 1) A special centennial issue for January 2011 with a new format and look; 2) A new

community-oriented Web site; 3) Special events at next year's ASEE annual conference in Vancouver. This should be of particular interest to ERM and its planning for next year since the focus of the events will be on the role and importance of scholarship in engineering education (not just engineering education research as published by JEE). Jack hopes to be able to share more specific information about that after Wednesday.

Matt Ohland called the meeting to a close at 2:02 PM.

Respectfully Submitted,

Tamara J. Moore

Frontiers in Education Conference

Imagining and Engineering Future CSET Education

Hilton Palacio del Rio • San Antonio, Texas • October 18–21, 2009

Final Report
Jeffrey E. Froyd, FIE 2009 General Chair
28 January 2010

FIE 2009 is sponsored by:
- **American Society for Engineering Education (ASEE)**
  Educational Research Methods (ERM) Division
- **Institute of Electrical and Electronics Engineers (IEEE)**
  IEEE Education Society
  IEEE Computer Society

Co-sponsored by:
Texas A&M University

FIE 2009 Planning Committee

General Chair
Jeff Froyd
Texas A&M University
froyd@tamu.edu

Assistant to the General Chair
Kevin Curry
University of Kansas Continuing Education
kgcurry@ku.edu

IEEE/Computer Society Program Co-Chair
David Cordes
University of Alabama
cordes@cs.ua.edu

IEEE/Education Society Program Co-Chair
Mani Mina
Iowa State University
mmina@iastate.edu

ASEE/ERM Program Co-Chair
Richard Layton
Rose-Hulman Institute of Technology
Richard.A.Layton@Rose-Hulman.edu

Special Sessions, Panels & Workshops Chair
Daniel J. Moore
Rose-Hulman Institute of Technology
daniel.i.moore@Rose-Hulman.edu

Exhibits Chair
Robert J. Hofinger
Purdue University at Columbus
rhofinge@purdue.edu

Publications
Dan Budny
University of Pittsburgh
budny@pitt.edu

New Faculty Fellows Chair
Ingrid St. Omer
University of Kentucky
istomer@engr.uky.edu

International Co-Chair, Europe
Edmundo Tovar Caro
Universidad Politécnica de Madrid
etovar@fi.upm.es

International Co-Chair, South America
Melany M. Ciampi
Council of Researches in Education and Sciences
melany@copec.org.br

International Co-Chair, Central America
Javier Quezada
Technologico de Monterey
jquezada@itesm.mx

Conference Historian
Ed Jones
Iowa State University
n2ecj@iastate.edu

Awards Chair
Tony Mitchell
North Carolina State University
tmitchel@eos.ncsu.edu

FIE Steering Committee Chair
Daniel J. Moore
Rose-Hulman Institute of Technology
daniel.i.moore@Rose-Hulman.edu

Overview

The 39th annual FIE conference began on Sunday, 18 October 2009 with a half-day of workshops and finished at noon on Wednesday, 21 October 2009. A reception, with a catered buffet and Mariachi band, was held on Monday, 19 October 2009 in a venue very near the conference hotel. Planning for a cost-effective reception was greatly aided by Jerry O'Connor and Dan Dimitriu, both from San Antonio College, who worked with local organizations to assemble an outstanding reception. The IEEE Education Society held a traditional awards banquet on Tuesday, 20 October 2010. The conference provided breakfast and lunch on Monday and Tuesday and breakfast on Wednesday.

Two innovations were introduced in response to a request from the FIE Steering Committee to move in new directions. For the first time, the call for papers included three categories: innovative practice, research-to-practice, and research, so that authors would highlight the primary contribution of their paper. In general, the program co-chairs were supportive of the introduction of these categories, because they focused conversations about acceptance of abstracts and manuscript on the contributions of the submissions. However, there was some confusion among reviewers and authors about the meanings of these three categories. These three categories will be continued at the 2010 Conference. The 2010 program committee has prepared a one-page summary describing the nature and expectations for the three categories. It is hoped that this document and other conversations will provide more clarification. In another innovation, the Conference proceedings were distributed on a USB flash drive instead of a CD. 70% of the survey respondents indicated they would prefer to receive the conference proceedings on a USB flash drive than a CD. Details are provided in the attached survey results.

Abstract submission, manuscript submissions, and attendance were lower than recent conferences. A primary influence may have been the economic downturn. About half of the attendees (255 out of 511) responded to the survey with generally positive results. Feedback results, which include some thoughtful and useful recommendations, are attached for the benefit of future organizers.

Technical Program Summary

563 Abstracts submitted (783 papers, 30 international, 13 panels, 16 special
369 Manuscripts (full papers and works-in-progress) submitted
355 Manuscripts accepted
12 Special sessions
2 Panel sessions
11 Workshops (1 cancelled after only one person registered)

The paper selection process for 2009 followed traditions from past years, with a few minor deviations in the logistics of program committee work. The program chairs worked very hard to put the program together, sometimes under very difficult deadlines. In the future, program committees might want to schedule more time for the review of manuscripts.

Plenary
The plenary speaker was Dr. Cynthia J. Atman, Director of the Center for Engineering Learning and Teaching and the holder of the Mitchell T. Bowie and Lella Blanche Bowie Endowed Chair, at the University of Washington. She talked about insights gleaned from the Academic Pathways Study. Responses to the plenary were generally positive.

Attendance Summary
Registrations: 527 (21 no shows and 11 cancellations) (compared to 590 in 2008)
Workshop Attendance: 100 (compared to 83 in 2008)
Awards Banquet Attendance: 115 (compared to 130 in 2008)

Budget Summary
Total Income: $290,359.50
Total Expenses: $285,927.60
Surplus: $4,431.90

Sponsorship Summary

Sponsor	***Purpose***	***Amount***
NAE/CASEE	*New Faculty Fellows*	*$10,000.00*
HP	*Terman/Regis Lunch*	*$ 5,000.00*
Techsmith	*Premier Lunch*	*$ 3,500.00*
NCIIA	*USB Drives*	*$ 5,000.00*
Digilent, Inc.	*Exhibitor Showcase*	*$ 200.00*
Cypress University Alliance	*USB Flash Drive Advertising*	*$ 500.00*
TOTAL		*$24,200.00*

Exhibitor Summary
ASU Collaborative Java-DSP Education Project
CleveMed
Cypress University Alliance
Digilent
EMA Design Automation
EVE Hardware/Software Co-Verification
John Wiley & Sons, Inc.
National Instruments
NCIIA
Stratasys, Inc.
Xilinx Inc

Exhibit Revenue $18,750.00

Bob Hofinger does a fine job of soliciting exhibitors and interfacing with the companies, and should be commended for his continuing commitment to FIE. In 2009, there were 11 exhibitors compared to 9 in 2008.

Awards
FIE 2009 followed a similar format for presenting awards as in the past. The FIE awards were presented at the Plenary session, and other awards were distributed in the two luncheons and the awards banquet. Tony Mitchell organized the awards materials for the proceedings and managed all of the awards. The Terman and Rigas awards lunch started and ended on time.

Hotel: Hilton Palacio del Rio
We filled 893 room nights of our 1325 room night block with the hotel, equaling 63.4% of guarantee. Our contract said we would fill at least 70% or pay damages. Nonetheless, the hotel
did not penalize us since they sold out on two of the nights and since our food orders were larger than they originally anticipated. Generally, survey respondents were positive about the hotel and its staff; however, some thought it was too expensive. A pattern in the comments was that some respondents did not like that sessions were divided between the 4th and 22nd floors and that elevator service was slow at time.

Conference Management
I want to take this opportunity to thank Kevin Curry for the outstanding job he did as the Assistant to the General Chair. Kevin, and his staff, including Barbara Solberg and Barbara Mayne, were on top of everything and did a superb job on handling conference logistics and reminding the conference chair of tasks that needed doing.

Educational Research and Methods Division

2010 Vice-Chair for Programs Report

Trevor S. Harding

2010 ASEE Annual Meeting
Louisville, KY, June 20 - 23, 2010

1. Overview:

- 30 ERM sessions/workshops were requested and all were approved
- 19 ERM active sessions
  - 14 technical with papers
  - 3 special sessions with papers
  - 1 distinguished lecture
  - 1 poster session with papers
- Average number of papers per technical session: 4.3
- Two moderators have been assigned to each session
- Special thanks to P.K. Imbrie (Distinguished Speaker), Julie Trenor (BoC), and Susan Donohue (For'um and Agin'um)

2. Abstracts and Papers:

- 105 abstracts were submitted by 101 authors
- 77 papers are scheduled to be presented, resulting in an overall acceptance rate of 73%.
- Of the 105 abstracts submitted:
  - 11 rejected (10.5%)
  - 13 accepted but withdrawn without paper (12%)
- Of the 81 papers submitted:
  - 2 were rejected (2.5%)
  - 2 were withdrawn (2.5%)
- Each abstract received an average of 2.9 reviews from 118 reviewers. Review completion rate was 80%
- Each paper received an average of 3.2 reviews from 149 reviewers. Review completion rate was 77.5%

3. Workshops:

- 0230 Getting Started in Engineering Education Research
- 0231 Research Into Practice: Tools for Effective Management of Student Teams
- 0530 CANCELLED: Adapting SCALE-UP in Engineering
- 0531 Creating Effective Assessment and Dissemination Plans for Pedagogical Research
- 0630 PhD Consortium in Engineering Education

4. Special Sessions

- 1530 Special Session: Impacts of Service in Engineering Monday June, 21 2010 2:15 p.m.-4:00 p.m.
- 2234 Special Session: Next Generation Problem-Solving Tuesday June, 22 2010 8:30 a.m.-10:15 a.m.
- 3531 Special Session: Innovation through Improv Wednesday June, 23 2010 2:15 pm-4:00 pm, KICC 216

5. Technical Sessions:

- 1430 Student Attitudes and Perceptions Monday June, 21 2010 12:30 p.m.-2:00 p.m.
- 1431 Student Learning Monday June, 21 2010 12:30 p.m.-2:00 p.m.
- 1630 Modeling Student Data Monday June, 21 2010 4:30 p.m.-6:00 p.m.
- 2130 Engineering Design: Implementation and Evaluation Tuesday June, 22 2010 7:00 a.m.-8:15 a.m.
- 2131 Conceptual Learning Tuesday June, 22 2010 7:00 a.m.-8:15 a.m.
- 2230 Knowing our Students, Faculty, and Profession Tuesday June, 22 2010 8:30 a.m.-10:15 a.m.
- 2231 New Learning Paradigms I Tuesday June, 22 2010 8:30 a.m.-10:15 a.m.
- 2530 Classroom Engagement Tuesday June, 22 2010 2:15 p.m.-4:00 p.m. KICC 205
- 2531 New Learning Paradigms II Tuesday June, 22 2010 2:15 p.m.-4:00 p.m. KICC 213
- 2630 Educational Research & Methods Poster Session Tuesday June, 22 2010 4:30 p.m.-6:00 p.m. KICC Exhibit Hall 2C & 2D
- 3130 Innovative Teaching and Assessment Tools Wednesday June, 23 2010 7:00 a.m.-8:15 a.m. KICC 212
- **3391 Distinguished Lecture: David Jonassen Wednesday June, 23 2010 10:30 a.m.-Noon, KICC Cascade C**
- 3430 Measurement Tools Wednesday June, 23 2010 12:30 p.m.-2:00 p.m., KICC 212
- 3530 Educational Research Wednesday June, 23 2010 2:15 p.m.-4:00 p.m., KICC 212
- 3630 ERM Potpourri Wednesday June, 23 2010 4:30 p.m.-6:00 p.m., KICC 212

6. Meetings and Social Events:

- 0534 FIE 2010 Planning Meeting Sunday June, 20 2010 4:00 p.m.-6:00 p.m.
- 0535 FIE Steering Committee - Executive Session Sunday June, 20 2010 2:00 pm-4:00 pm
- 0430 FIE Steering Committee - Open Session Sunday June, 20 2010 12:00 pm-2:00 pm
- 1130 Breakfast with Champions Monday June, 21 2010 7:00 a.m.-8:15 a.m.
- 1830 For-um and Agin-um Monday June, 21 2010 7:00 p.m.-8:30 p.m.
- 2430 ERM Business Meeting and Luncheon Tuesday June, 22 2010 12:30 p.m.-2:00 p.m.
- **2730 ERM Brouhaha Tuesday June, 22 2010 6:30 p.m.-9:00 pm, Offsite - Muhammad Ali Center, 144 North 6th Street, Louisville, KY 40202**

7. Best Paper Nomination:

   Lisa Lattuca and David Knight
   ASEE 2010-1537:IN THE EYE OF THE BEHOLDER: DEFINING AND STUDYING INTERDISCIPLINARITY IN ENGINEERING EDUCATION

8. Call for Papers for ASEE 2010

- *Engineering Epistemologies*: what constitutes engineering thinking and knowledge within current and future social and economic contexts;
- *Engineering Learning Mechanisms*: how engineering learners' develop knowledge and competencies in context;
- *Engineering Learning Systems*: how the instructional culture, institutional infrastructure, and epistemology of engineering educators impact learning;
- *Engineering Diversity and Inclusiveness*: how diverse human talents contribute solutions to the social and global challenges and relevance of the profession; and
- *Engineering Assessment*: use and development of assessment methods, instruments, and metrics to inform engineering education practice and learning.

ERM Apprentice Faculty Grant Report
June 2010
Submitted by: Julie Martin Trenor, AFG Chairperson

This report summarizes the results of the 2010 Apprentice Faculty Grant program.

This year, new criteria were enacted for a one-year trial period. The call for applications listed the new eligibility requirements

- Individuals who are currently pursuing or plan to pursue a career in engineering education and who have demonstrated potential for substantial contributions to the field through engineering education research or scholarship.
- Any engineering education researcher who is at an "apprentice" stage of their pathway into the engineering education research community, and wishes to become an active member of the ERM Division. This might include graduate students, post doctoral researchers, junior faculty, staff members, or senior-ranking faculty who are transitioning into engineering education research.

A summary of changes compared to past years for this pilot program are listed below:

- **Change in eligibility**: Eligibility has been broadened to include engineering education researchers any stage of their career that make a sufficient case for the need for mentoring and "apprentice" status. This is designed to be inclusive of the many pathways into engineering education research.
- **Application packet**: (1) Applicants can now self-nominate. The requirement of a teaching philosophy has been removed; instead, a statement of how the applicant qualifies as an "apprentice" is required. This statement is the nominee's opportunity to discuss what being an AFG would do for the nominee's career trajectory and how the nominee would leverage this formal introduction to the ERM community to make a stronger mark in engineering education. (2) The required number of letters of recommendation has been reduced to one.
- **Evaluation criteria**: To mirror the changes in the nominee eligibility and the application package, the reviewer criteria has changed to reflect evaluation of the need for mentoring on the part of the nominee and alignment of this award with the career trajectory of the nominee.

Candidates were evaluated a team of ERM reviewers on (a) potential for future contributions to engineering education research, (b) need for mentoring/apprenticeship and (c) possible future involvement with the ERM Division.

Reviewers were sent the following instructions:

This year we are purposely making an effort to move the emphasis away from those who have already achieved a great deal in the field those who have a **demonstrated interest in engineering education research and have clearly demonstrated a need for mentoring and desire to contribute to the ERM division**.

1. Read the candidate's statement of career goals
   a) Have they provided **compelling** evidence of apprenticeship status? [5=extremely compelling, 4= very compelling, 3= somewhat compelling, 2= not compelling, 1= not specifically addressed]
   b) Does the statement convince you that they will **benefit** from ERM apprenticeship and have the potential to become an active member in ERM? [5=extremely convinced, 4= very convinced, 3= somewhat convinced, 2= not convinced, 1= not specifically addressed]
   c) Are their career goals **clearly** described? [5=extremely clearly described, 4= very clearly described, 3= somewhat clearly described, 2= not clearly described, 1= not specifically addressed]
   d) Are the candidate's career goals **consistent** with the ERM mission? (does it focus on educational research and not only teaching) [5=extremely consistent, 4= very consistent, 3= somewhat consistent, 2= not consistent, 1= not specifically addressed]

2. Read the CV
    a) Have they **demonstrated** commitment at some level to educational research? (note that they do not have to be already accomplished in this area, but must be moving in this direction) [4= have participated in a number of educational research activities, 3= have participated in a few educational research activities, 2= have participated in at least 1 educational research activity, 1= have not participated in any educational research activities to date]
    b) Do the efforts on the candidate's CV instill confidence in you that they have the **potential** to positively contribute to the ERM Division? [5= extremely confident, 4= very -confident, 3= somewhat confident, 2=marginally confident, 1= not confident]
3. Read the letter of recommendation
    a) How well does the author know the work of the candidate? [3= very well, 2= somewhat well, 1= not well at all]
    b) Are specific examples provided that support the questions above? [4= many examples provided, 3=several examples provided, 2= one or two examples provided, 1= examples not provided]

This year the AFG program received 36 applications from candidates at 27 institutions in 21 states. Applicants held a variety of titles, including:

- Adjunct Professor (1)
- Assistant Professor (9)
- Associate Professor (1)
- Graduate Student (19)
- Program Director (1)
- Postdoctoral Researcher (2)
- Research Assistant Professor (1)
- Research Associate (2)
- Visiting Faculty (1)

Six outstanding applicants were chosen by the committee:

- **Julie Linsey:** Assistant Professor at Texas A&M University: Innovation, Design Reasoning, Engineering Education and Methods Lab; Ph.D. in Mechanical Engineering: "*Design-by-Analogy and Representation in Innovative Engineering Concept Generation"*
- **Devlin Montfort:** Ph.D. candidate in the Department of Civil & Environmental Engineering at Washington State University; Masters Thesis: "*An Investigation of Students' Conceptual Understanding In Related Sophomore To Graduate-Level Engineering And Mechanics Courses*"
- **Gillian Nicholls:** Assistant Professor in Industrial & Systems Engineering & Engineering Management at the University of Alabama-Huntsville**;** Ph.D. Industrial Engineering: "*An Integrated Multiple Statistical Technique for Predicting Post-Secondary Educational Degree Outcomes Based Primarily on Variables Available in the 8th Grade*."
- **Marisa Orr:** PhD candidate in Clemson University; Research interests include: gender issues, career motivations, statistical modeling of student data, and the impact of socioeconomic status on access, performance, and persistence in engineering.
- **Aidsa Santiago Roman:** Director Strategic Engineering Education Development (SEED) Office and Assistant Professor at the University of Puerto Rico, Mayaguez; Ph.D. in Engineering Education: "*Fitting Cognitive Diagnostic Assessment to the Cognitive Assessment Tool for Statics*"
- **Sarah Zappe,** Director of Assessment and Instructional Support/Research Associate at the Leonhard Center for the Enhancement of Engineering Education at Pennsylvania State University and Affiliate Assistant Professor of Education (Educational Psychology Department); Ph.D. in Applied Measurement: "*Response process validation of equivalent test forms: How qualitative data can support the construct validity of multiple test forms*"

Many thanks to ERM members who reviewed the applications:

- Sandy Courter
- Tim Doughty
- Mica Green
- Shawn Jordan
- Stuart Kellog
- Micah Lande
- Jenni Light
- Noemi Mendoza
- Rungan Nathan
- Judith Norback
- Lora Oehlberg
- Euridice Oware
- Raluca Rosca
- Linda Schmidt
- Jen Schoepke
- Julie Sharp

Appreciation is also extended to those who are currently serving as mentors to the awardees:

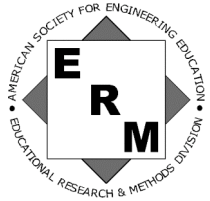
- Reid Bailey
- Shane Brown
- Lisa Bullard
- Monica Cardella
- Beth Eschenbach
- Holly Matusovich

The AFG class of 2010 will be officially recognized at the ERM Brouhaha and with a certificate and book. Because this year's winners represented such diversity in background and current work, each applicant was asked to choose a book that they felt would advance their engineering education research.

Recommendations for the future of the AFG Program:

It is the opinion of the AFG chairperson that this year's trial program was extremely successful in soliciting applications from a wide variety of people who, while at different stages in their career, demonstrated a substantial need for mentorship in the area of engineering education research as well as potential for future contribution to the ERM Division. It is the belief of the chairperson that these candidates and ultimately, the winners, are researchers who need to be embraced by the ERM division and truly meet the designation of "apprentice faculty."

EDUCATIONAL RESEARCH AND METHODS DIVISION



2010 ASEE Annual Conference

June 20-23, 2010

DISTINGUISHED LECTURE SERIES

DAVID H. JONASSEN
University of Missouri

Learning to Solve Engineering Problems

Kentucky Int'l Convention Center, Cascade C
Session 3391 (10:30 AM – 12:00 PM)
Wednesday, June 23rd

BROUHAHA!

Offsite: Muhammad Ali Center, 144 North 6th Street, Louisville, KY 40202
Session 2730 (6:00 – 10:00 PM)
Tuesday, June 22nd
Ticketed Event

LUNCHEON & BUSINESS MTG

Louisville Marriott, Salon G, Kentucky Ballroom
Session 2430 (12:30 - 2:00 PM)
Tuesday, June 22nd
Ticketed event, but you can also bring lunch if desired!

FOR-UM & AGIN-UM

Louisville Marriott, Salon B, Kentucky Ballroom
Session 1830 (7:00 - 8:30 PM)
Monday, June 21st

BREAKFAST WITH CHAMPIONS

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ERM (CO-)SPONSORED SESSIONS

Sunday		Session Title
0230	9:00 AM	Getting Started, Eng. Educ. Research
0231	9:00 AM	Tools for Effective Mgmt. Stud. Teams
0430	12:00 PM	FIE Steering Comm. - Open Session
0530	2:00 AM	CANC: Adapting SCALE-UP in Eng.
0531	2:00 AM	Effective Assess/Dissemination Plans
0535	2:00 AM	FIE Steering Comm. – Exec. Session
0630	2:00 AM	PhD Consortium in Eng. Education
0534	4:00 AM	FIE 2010 Planning Meeting

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1130	***7:00 AM***	***Breakfast with Champions***
1430	12:30 PM	Student Attitudes and Perceptions
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2131	7:00 AM	Conceptual Learning
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2730	***6:00 PM***	***ERM Brouhaha***

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3391	***10:30 AM***	***Distinguished Lecture Series:***
		Learning to Solve Engineering Problems David Jonassen, Ph.D. University of Missouri
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ERM INFO: http://fie-conference.org/erm/
JOIN ERM: $3 along with ASEE dues

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MARK YOUR CALENDAR

June 26 -29, 2011

ASEE 2011

ASEE ANNUAL CONFERENCE & EXPO
Vancouver, BC, CANADA
For details, go to:
www.asee.org/conferences/

October 27- 30, 2010

FIE 2010

FRONTIERS IN EDUCATION CONFERENCE
Northern Virginia/Washington, D.C.
For details, go to:
http://fie-conference.org/fie2010/

ERM DISTINGUISHED LECTURERS

2010	David H. Jonassen
2009	James E. Stice
2008	Lauren Resnick
2007	R. Keith Sawyer
2006	Sheri Sheppard
2005	Jack Wilson
2004	James Pellegrino
2003	Elaine Seymour
2002	Sue Rosser
2001	John Bransford
2000	Michelene Chi
1999	Richard Felder
1998	Thomas Angelo
1997	David and Roger Johnson
1996	Woodie Flowers
1995	Peter Seldin
1994	Sheila Tobias
1993	Ernest Boyer
1992	Alan Schoenfeld
1991	Patricia Cross
1990	Frederick Reif
1989	William Perry, Jr.
1988	Donald Schon
1987	Benjamin Bloom
1986	Moshe Rubinstein
1985	Fred Keller
1983	Samuel Postlethwait
1982	Wilbert McKeachie
1981	Robert Mager
1980	B.F. Skinner

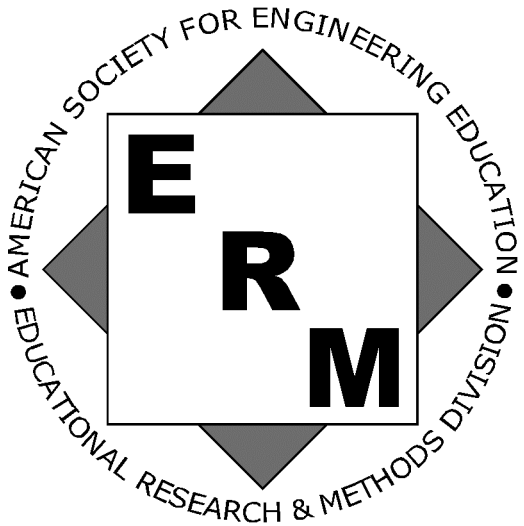
ERM ROSTER OF ASEE FELLOWS

Mary Anderson-Rowland
Cynthia Atman
Ted Batchman
Walter Buchanan
Daniel D. Budny
George Burnet
Frank Burris
Bruce Carlson
Stephen Cheshier
Marvin Criswell
Richard Culver
Denny Davis
Don Dekker
David DiBiasio
Marilyn Dyrud
Delores Etter
Lyle Feisel
Richard Felder
Gordon Flammer
Norman Fortenberry
Wallace Fowler
Eli Fromm
Carole E. Goodson
Lawrence Grayson
Lois Greenfield
Bruce Harding
Lee Harrisberger
John Heywood
Joseph Hughes
Raymond Jacquot
Edwin Jones
Billy Koen
Glenn Kraige
John Lamancusa
William LeBold
John Lindenlaub
Thomas Litzinger
Jack Lohmann
Jed Lyons
James Melsa
Donald Merino
Lueny Morell
Donald Myers
William Oakes
Burks Oakley, II
Barbara Olds
John Orr
Gerhard Paskusz
Helen Plants
John Prados
Sarah Rajala
P. K. Raju
Teri Reed-Rhoads
Gloria Rogers
William Sayle, II
John Sears
Sheri Sheppard
Larry Shuman
Stewart Slater
Karl Smith
Sheryl Sorby
James Stice
Gerald Thuesen
Mahbub Uddin
Wallace Venable
David Voltmer
Charles Wales
Phillip Wankat
John Weese
Charles Yokomoto

ERM DISTINGUISHED SERVICE AWARD RECIPIENTS

2009	Rich Felder
2008	Teri Reed-Rhoads
2007	Dan Moore
2006	Eric Soulsby
2005	Dan Budny
2004	Larry Richards
2003	Michael Pavelich
2002	Karl Smith
2001	Charlie Yokomoto
2000	Dick Culver
1999	John Lindenlaub
1998	Alisha Waller and Billy Koen
1996	Jim Stice
1995	Wallace Venable

Educational Research and Methods Division



American Society for Engineering Education

WHAT IS THE ERM DIVISION?

The Educational Research and Methods (ERM) Division of the American Society for Engineering Education (ASEE) has been working for more than 40 years to improve the quality of instruction in all branches and levels of engineering education. The ERM Division is committed to the learning process, including

- research on learning
- research on methods of instruction
- dissemination of knowledge on teaching and learning
- development of procedures and materials for instruction

ERM is also committed to improving evaluation of teaching as a basis for recognition and rewards, and to encouraging excellence and scholarship in teaching.

ERM ACTIVITIES

The activities of the Division take place in four main venues:

- **ASEE Annual Conference**, where ERM offers a wide range of program sessions.
- **Frontiers in Education Conference** (FIE), held annually in the fall and jointly sponsored by ERM and IEEE.
- **National Effective Teaching Institute** (NETI), designed for engineering and technology educators and held in conjunction with the ASEE Conference
- **Regional Workshops** on specific topics in engineering education presented by invitation around the country

ERM INFORMATION DIRECTORY

http://fie-conference.org/erm/

- Information on the Division
- Links to conferences
- Award app. information; past awardees
- Names and contact information of ERM officers and other ERM'ers
- To receive the ERM newsletter

CALL FOR PAPERS

- ASEE Annual Conference call for papers deadline is typically in October.
- FIE Conference call for papers deadline is typically in January.

ASEE CONFERENCE PROGRAM

The ERM program at the ASEE Conference includes how-to-do-it workshops, informal (and fun) social gatherings, and stimulating technical sessions. Workshops and technical sessions focus on such topics as

- learning theory and applications
- teaching techniques
- using technology in the classroom
- evaluating teaching and learning
- teacher development
- understanding students

Established in 1980, the **ERM Distinguished Lecture Series** brings to the conference thought-provoking new ideas by notable speakers, usually from outside of the engineering education community.

The social event of the conference for ERMers is our annual dinner, the **ERM Brouhaha,** (*Caution! Fun ahead!*) which includes presentations of the **Apprentice Faculty Grants** and the **Distinguished Service Award**. Join us! You never know who might be standing on *your* table!

APPRENTICE FACULTY GRANTS

The ERM Division awards Apprentice Faculty Grants to bring worthy graduate students or instructors to the ASEE Annual Conference. The program honors those committed to innovation in teaching or who have potential for contributing to engineering education. Nominations are solicited annually from Deans of Engineering and Engineering Technology.

OFFICERS AND BOARD

The ERM Division is administered by an Executive Board, consisting of the following officers:

Chair
(elected in odd-numbered years)
Immediate Past Chair
(by succession)
Vice-Chair for ASEE Programs
(appointed by the Board)
Vice-Chair for FIE Programs
(appointed by the Board)
Vice-Chair for Publications
(appointed by the Board)
Secretary-Treasurer
(elected in even-numbered years)
Four Directors
(two elected in odd-numbered years)
(two elected in even-numbered years)
At-Large Directors
(appointed at the discretion of the Chair)
Additional Committee Chairpersons
(appointed by the Chair)

Any ERM member is eligible for any of the elected offices. Appointed officers are named by the Executive Board or the Chair. The Executive Board meets at the ASEE Conference and at the FIE Conference. Actions by the Executive Board are reported at the Annual Business Meeting of the Division, held at the ASEE Conference.

JOINING ERM

ERM welcomes any ASEE member into its ranks, and it's easy to become an ERMer! Just indicate your desire to join ERM on your ASEE membership application or renewal and pay the annual dues of $3.

Please send notices of corrections to:
livesay@rose-hulman.edu

Educational Research and Methods Division
Distinguished Lecture Series

Since 1980, the Educational Research and Methods Division of ASEE has sponsored the ERM Distinguished Lecture at the ASEE Annual Conference. The lecture provides an opportunity to hear thought-provoking new ideas by notable speakers, usually from outside of the engineering education community.

1980–Burrhus F. Skinner
1981–Robert F. Mager
1982–Wilbert J. McKeachie
1983–Samuel N. Postlewait
1985–Fred F. Keller
1986–Moshe F. Rubinstein
1987–Benjamin S. Bloom
1988–Donald A. Schon
1989–William G. Perry, Jr.
1990–Frederick Reif
1991–K. Patricia Cross
1992–Alan H. Schoenfeld
1993–Ernest L. Boyer
1994–Sheila Tobias
1995–Peter R. Seldin
1996–Woodie C. Flowers
1997–David and Robert Johnson
1998–Thomas Angelo
1999–Richard M. Felder
2000–Michelene T.H. Chi
2001–John D. Bransford
2002–Sue Rosser
2003–Elaine Seymour
2004–James Pellegrino
2005–Jack Wilson
2006–Sheri Sheppard
2007–R. Keith Sawyer
2008–Lauren Resnick
2009–James E. Stice
2010–David H. Jonassen

2010 ASEE Annual Conference
ERM Distinguished Lecture

Learning to Solve Engineering Problems

Dr. David H. Jonassen

Distinguished Professor, School of Information Science and Learning Technologies, College of Education
University of Missouri

Wednesday, June 23, 2010
10:30 AM – 12:00 PM

Kentucky International Convention Center
Cascade C

Dr. David H. Jonassen
University of Missouri

David H. Jonassen is a Distinguished Professor at the School of Information Science and Learning Technologies in the College of Education at the University of Missouri. He has edited, authored, or coauthored more than twenty-five books, as well as hundreds of articles in journals, industry publications, and edited collections. Separate studies have shown that Jonassen is the most widely published and cited author in the instructional design field.

David Jonassen is sponsored by the Educational Research & Methods Division (ERM).

* Image on front from http://web.missouri.edu/jonassend/personal.html, Accessed June 15, 2010.

Presentation Title:

"Learning to Solve Engineering Problems"

Engineers are paid to solve problems, so engineering education programs should teach students to solve problems. This presentation will address a number of questions: What kinds of problems do engineers solve and what kinds of problem should engineering students solve? What are the building blocks of problem-based learning environments? What cognitive skills are required to solve problems? How can engineering students engage in problem solving? Examples of funded research will be presented.