



# American Society for Engineering Education

## Freshman Programs Division

### Newsletter

Fall 2007

Editors: Rich Whalen, Beverly Jaeger, Sue Freeman - Northeastern University

#### **ASEE Vision**

##### **Statement**

*"ASEE will serve as the premier multidisciplinary society for individuals and organizations committed to advancing excellence in all aspects of engineering and engineering technology education."*

#### **Inside this issue:**

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## A Message from the Chair

Aloha Hawaii! Mahalo!

Join the American Society for Engineering Education in Pittsburgh for the 115th Annual ASEE Conference & Exposition!

**2008 ASEE Annual Conference  
June 22-25, 2008  
Pittsburgh, Pennsylvania**



3 Conferences are ever evolving entities. The content and format and technology are always changing.

4 When I became chair of the ASEE Freshman Programs Division (FPD), my predecessor Jim Morgan gave me advice that seemed to come from the Hawaiian past. To paraphrase Jim in Hawaiian,

**"E na'i wale nō 'oukou, i ke kupo no 'a'ole au"**

6 or "Continue my good deeds, they are not yet finished"

8 These are actually the final words of Kamehameha I (1758-1819; conqueror of the Hawaiian Islands and first King of Hawaii in 1810) for his successors. [A short aside into Hawai-

ian history: In 1795 Kamehameha set sail from his home base of the big island Hawaii with 1200 war canoes and 10,000 warriors to eventually conquer Oahu after subduing Maui and Molokai. He landed half his fleet at Waikiki and forced the army of Oahu's leader over the cliffs at Pali just north of Honolulu (a drop of over 1000 feet)].

Luckily FPD management succession is today much more peaceful than would have been the case in the Hawaiian past. There is a transition procedure as specified in the current FPD bylaws that allows for an orderly progression of FPD Management positions. Two members for the Board of Directors of FPD were elected during the business meeting on 26 June 2007 to fill expiring seats. A revised FPD By-Laws, as prepared by William Koffke (a former chair of FPD), is being circulated for comments. These new By-laws will be voted on during

*(Continued on page 4)*

## Call for Papers – Pittsburgh 2008

In this newsletter is the official Freshman Programs Division (FPD) "Call for papers" for the 2008 Annual Conference in Pittsburgh, Pennsylvania.

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# Call for Papers – Pittsburgh 2008

(continued from previous page)

Abstract submission, the initial step in getting a paper accepted for the conference, has already begun and **abstract submission will close on October 19<sup>th</sup>**. Please see the details on the following page that outline the requirements for abstracts and papers.

Abstracts and papers will be submitted via the *improved* ASEE SmoothPaper system: (<http://www.asee.org/smoothpaper>) according to ASEE deadlines which will soon be published on the website. Please view the link below for an update.

**<http://www.asee.org/conferences/annual/2007/Call-for-Papers.cfm>**

Since the system is new, it is important to have abstracts ready somewhat before the deadline, and submit them at least a couple of days early, just to be safe. Leave the last-minute crisis management to others!

## **General Author Deadlines**

Abstract Submission	October 19, 2007
Abstract Status Notifications	December 14, 2007
Draft Paper Submission	December 14, 2007 – January 18, 2008
Draft Paper Status Notifications	February 15, 2008
Final Paper Submission	February 15 – February 29, 2008
“Accepted Pending Changes”	March 7, 2008
Proceedings/Copyright Transfers	March 14, 2008
Author Registration Deadline	March 14, 2008
Housing Deadline	May 23, 2008

Note that the FPD has a Publish-to-Present requirement. What this means to authors is that if your abstract is accepted, you are **not** guaranteed a spot in a technical session to present your work. To be assured of a place on the program, you must write, submit, and re-submit, if required, a paper deemed acceptable by the reviewers assigned to your paper topic.

All abstracts and papers will be peer-reviewed. The reviewers will include members of the FPD executive board, session chairs for the conference, and volunteer reviewers.

**It is not too late to volunteer to be a reviewer or session moderator.**

The Freshman Programs Division is proud to encourage quality papers and presentations: in addition to first and second place best paper awards *with new increased \$cash awards\$,* there are awards for the best presentation and for the best STUDENT presentation. The authors and presenters will receive a check and a suitable award at the FPD business meeting in Pittsburgh. We look forward to seeing you there!

## **FRESHMAN PROGRAMS DIVISION 2008 CALL FOR PAPERS**

The Freshman Programs Division (FPD) seeks papers relating to educational activities associated with first-year engineering students, including freshman and transfer students. Topics under consideration include those below, and papers on other pertinent topics are very welcome.

### **Topic Suggestions:**

- Innovative approaches to first-year engineering education,
- Insights into teaming, group work, and team/member assessment,
- Creative problem-solving courses and/or related teaching activities,
- Project-based and hands-on courses and/or related teaching activities,
- Instructional use of computers and computer software,
- Integrating engineering design into the freshman year,
- Integrated curricula for the freshman year,
- Advising, student services, and orientation programs,
- Retention strategies and programs,
- Pre-college programs and experiences,
- Linkages with 2-year and junior college institutions, and
- Linkages with K-12 education

Due to the competitiveness of publication in the Freshman Programs Division, the quality of abstracts submitted is of utmost importance. As the reviewers are required to evaluate numerous submissions in a short time frame, below are some guidelines and features authors may want to incorporate in order to help the reviewers gain a better understanding of the nature of the work submitted. As each author's potential for contribution to ASEE through the FPD is unique, all of the suggested criteria do not have to be met.

### **Minimum Requirements:**

- Extended abstracts of up to one full page of text are customary (750-800 words).
- This is a blind submission and blind review. Do not include the names of institutions or authors anywhere in the abstract.

### **Additional Guidelines and Suggestions:**

- As appropriate, include the pedagogical theory or approach being used;
- Indicate the form that your outcome(s) will take as appropriate;
- As applicable, methods of assessment should be made clear;
- A second page may be used to include a graph or image to clarify the nature of your work or to include limited references to indicate a basis for the work undertaken.

Peer review occurs for both abstracts and papers. Abstract acceptance does not guarantee acceptance of the paper. The Freshman Programs Division has a Publish-to-Present requirement and final papers must be written and accepted in order for the work to be presented at the 2008 ASEE Annual Conference in Pittsburgh. Submission of abstracts and final papers will be via the SmoothPaper® system and in accordance with ASEE published deadlines.

### **For more information, contact:**

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## Message from the Chair (continued from page 1)

the FPD business meeting at the next ASEE annual conference in June 2008.

There were 11 scheduled FPD sessions at the Honolulu 2007 conference in addition to a Board of Directors Meeting as well as the FPD General Business Meeting. All sessions were very well attended including the very last session at 4:30-6:00PM on Wednesday, June 27, 2007. This last session had 27 attendees!

In my assessment, the 2007 conference was very successful. This is the result of many helping hands in the form of reviewers, moderators, newsletter editors, FPD members, as well as the many authors that prepared high quality papers. Awards were given for the best paper and the two papers that were tied for second place. Awards were also given for the best presentation and the best student presentation. Please see the details about this elsewhere in this newsletter.

FPD was co-sponsor of a very successful First Year Engineering Workshop at Notre Dame in July 2006. A second annual First Year Engineering Workshop at Notre Dame is scheduled for July 29-31, 2007. FPD is again a co-sponsor. See Notre Dame's website for details <http://www.nd.edu/~engineer/dialogueII/>

Sandy Wood ( [swood@coe.eng.ua.edu](mailto:swood@coe.eng.ua.edu) ) is the program chair for FPD for Pittsburgh 2008. Please feel free to volunteer to help with reviews of abstracts and papers. As before, FPD papers are peer reviewed. It is very rewarding to see new work in progress as a reviewer.

This coming year I look forward to work with the ASEE staff and leadership. I also look forward to hearing from you any ideas you might have about future directions for FPD. Let us all try to improve the quality of FPD sessions and papers. We all benefit from this!

Gunter Georgi  
Polytechnic University  
Freshman Programs Division Chair  
[georgi@poly.edu](mailto:georgi@poly.edu)



Attendees at FPD Session 2007



### FUTURE CONFERENCES:

**FIE:** 2007 Frontiers in Education Conference  
Milwaukee, WI  
October 10 – 13, 2007

6<sup>th</sup> Annual ASEE Global Colloquium on  
Engineering Education:

*"Shaping the Future through Global Partnerships"*  
October 1-4, 2007

Hosted by Boğaziçi University  
Conrad Hilton, Istanbul, Turkey

Conference for Industry and Education Collaboration (CIEC):

*"Securing our Engineering Future"*  
February 13-15, 2008  
New Orleans, LA

### Upcoming Annual ASEE Conferences!:

2008 ASEE Annual Conference & Exposition  
June 22-25, 2008 - Pittsburgh, PA

2009 ASEE Annual Conference & Exposition  
June 14 - 17, 2009 - Austin, TX

2010 ASEE Annual Conference & Exposition  
June 20 - 23, 2010 - Louisville, KY

It is not too early to put Austin on your calendar ;-)



Members of the 2007-2008 Executive Committee are (left to right) Scott Moor (Secretary/Treasurer), Richard Freuler, Kris Craven (Program Chair, elect), Gunter Georgi (Chair), Beverly Jaeger, Chris Rowe, Sandy Wood (Program Chair), Jim Morgan (Past Chair).

## Meet the Board

The Freshman Programs Division Bylaws provide for an Executive Committee to administer the affairs of the division and to formulate policy. This committee has eight members elected by the FPD membership for terms of four years each, with the terms staggered so that two members are elected each year. Elections are held each year at the Division Business Meeting during the Annual Conference. Officers for the division are selected by the Executive Committee from its eight members at the Annual Conference prior to the business meeting. The officers include the Chair, Program Chair, Program Chair-Elect, Secretary and Treasurer. In recent years the positions of Secretary and Treasurer have been combined into a single position. The Bylaws provide for a succession from Program Chair-Elect to Program Chair and then to Division Chair over a three-year period. Following a term as Chair, the past chair remains on the Executive Committee for an additional year and becomes the ninth member of the committee unless his/her term on the committee has not yet expired.

We welcomed Scott Moor (IU Fort Wayne) to the FPD Executive Committee at the Division Meeting in Chicago. The entire 2006-2007 Executive Committee is pictured in the photo above which was taken following the Division Business Meeting. Contact information for each member of the executive committee is provided below. The number in parentheses indicates the year each member is scheduled to rotate off the board. Keep in mind that at the 2007 Annual Meeting in Hawaii :) we will be electing two persons to serve a four -year term on the board. If you are interested in being nominated please let the current past chair Jim Morgan know.

### Chair

Gunter Georgi (2008)  
General Engineering  
Polytechnic University  
[georgi@poly.edu](mailto:georgi@poly.edu)

### Program Chair, Vice-Chair, Chair Elect

Sandy Wood (2008)  
Freshman Engineering Program  
University of Alabama  
[swood@coe.eng.ua.edu](mailto:swood@coe.eng.ua.edu)

### Program Chair, Elect

Kristine Craven (2009)  
Basic Engineering Program  
Tennessee Technological University  
[kcraven@tntech.edu](mailto:kcraven@tntech.edu)

### Secretary/Treasurer

Scott Moor (2010)  
Mechanical Engineering  
IU Purdue Fort Wayne  
[moors@ipfw.edu](mailto:moors@ipfw.edu)

### Past Chair

James Morgan (2006)  
Civil Engineering  
Texas A & M  
[jim-morgan@tamu.edu](mailto:jim-morgan@tamu.edu)

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## Meet the Board (continued from previous page)

### "Members at Large":

Christopher Rowe (2009)  
Engineering Science  
Vanderbilt University  
[chris.rowe@vanderbilt.edu](mailto:chris.rowe@vanderbilt.edu)

Richard Freuler (2011)  
First Year Engineering Program  
Ohio State  
[Rick.Freuler@osu.edu](mailto:Rick.Freuler@osu.edu)

Beverly Jaeger (2011)  
Mechanical and Industrial Engineering,  
Northeastern University  
[bkjaeger@coe.neu.edu](mailto:bkjaeger@coe.neu.edu)

Bob Montgomery  
Engineering Education  
Purdue University  
[rmont@purdue.edu](mailto:rmont@purdue.edu)



FPD Business Meeting  
2007 Honolulu, HI

## American Society for Engineering Education - Freshman Programs Division

### Minutes of the Division Business Meeting at the ASEE 2007 Annual Conference in Honolulu, HI

**June 24, 2007**

1 Chair, Jim Morgan called the meeting to order. Jim gave a brief introduction and recognized the contributions of various division members. In attendance: Kris Craven, Chris Rowe, Sandy Wood, John Demel, Janet Meyer, Dario Cordes, Ken Brannan, Lorean Folan, Margot Vigeant, Judy Ann Vazyo, John Krupczak, Keith Mazachek, William Koffke, Liels Hotaling, Nancy Lamm, S. Scott Moor, Rick Freuler, Beverly Jaeger, Sue Freeman, Rich Whalen

2 Minutes of the 2006 Business Meeting were previously distributed to the membership via e-mail and can be seen in the Freshman Programs Division (FPD) newsletter. These minutes were **APPROVED**.

3 The Treasurer's report was distributed. Kris Craven stated that the Freshman Programs Division currently has \$790.00 in the operating account and \$9,060.79 in the BASS Account. We ended FY2005 with a balance of \$252.72 in the operating account and \$8,262.12 in the BASS account. Note that excess monies in the operating account are not carried over to the next fiscal

year. The FY2007 operating account budget is \$790.00, which is the same as last year. It was agreed that food and beverage charges from the 2005 Annual Conference would no longer be contested. Outstanding expenses include best paper and best presentation awards and plaques for the 2007 award winners and best presentation awards and plaques for the 2006 award winners. The amounts of these awards are: best paper, first and second place - \$250 & \$100, best presentation by a professional member - \$150, best presentation by a student - \$100. The Treasurer's report was **APPROVED**.

4 Gunther Georgi, Program Chair for 2007, gave the Program Chair Report. There were 123 abstracts submitted, 63 abstracts were accepted (5 were moved to emerging technologies), and 43 final papers were accepted. FPD was given extra sessions to total 12, however one (Monday @ 7:30 a.m.) was cancelled due to fewer papers being submitted. He announced the best paper winners, and asked that the moderators of the sessions recognize the award before the presentation.

The 2007 Freshman Programs Division Best Paper Awards are:

First Place: "Tower of Straws: Reaching New Heights with Active Learning in Engineering Design for the First-Year Curriculum," John K Estell, Ohio Northern University, Beverly Jaeger, Northeastern University, Richard Whalen,  
(Continued on next page)

## FPD 2006 Business Meeting Minutes *(continued from previous page)*

Northeastern University, Susan Freeman, Northeastern University, John-David Yoder, Ohio Northern University. The paper will be presented in Session 3153, "Teaching Methods & Technology."

Second Place: "Exploring the Relationships Among Performance on Engineering Tasks, Confidence, Gender, and First Year Persistence," Jennifer Light, University of Washington, Russell Korte, University of Minnesota, Ken Yasuhara, University of Washington, Deborah Kilgore, University of Washington. The paper will be presented in Session 1553, "Professional Issues for First-Year Courses."

AND: "Engineering 100: An Introduction to Engineering Systems at the US Air Force Academy," Lynne George, U.S. Air Force Academy, Robert Brown, U.S. Air Force Academy. The paper will be presented in Session 1353, "Highlighting First-Year Programs."

Gunter also expressed concern with the blind review process. Most authors removed names and affiliations at the front of the paper, however there were a number of papers that referred to the institution or other programs that identified the author and/or affiliation at later points in the paper.

5 William Koffke reported on the By-Laws revisions. He indicated that the name of the division will become First-year Programs Division, thus not changing the acronym, when the By-laws are approved. He has taken the ASEE template and attempted to modify it to our current structure. Issues to be addressed include: the succession plan, officers, and standing committees. The document will include the succession of offices and indicate that persons will remain on the committee until they have completed their progression through the succession. Bill indicated that nominations for the Program Chair and Program Chair Elect positions do not need to be from the executive committee, these positions may be filled by any division member. He has included a nominating committee and an awards committee but included provisions for officers to fulfill these duties if no "committee" is formed.

### 6 2008 Program Chair Report

Program Chair Sandy Wood announced that the 2008 Annual Conference will be held June 22 through June 25 in Pittsburgh. Her goal is 150 abstracts submitted, starting in August and due approximately the first week of October. She hopes to keep the eleven sessions FPD was allotted this year.

DISCUSSION: Why no food at this breakfast meeting? The cost is generally too high and many members' schools won't pay for the ticket. The Women in Engineering Division subsidizes their ticket price using their BASS savings. They generally charge \$15 and pay the rest required by the conference. Why not move meeting to lunch? There is too much conflict with other divisions' meetings. Leave as a breakfast meeting.

**ACTION:** Coordinate with Pittsburgh conference personnel to have breakfast food at the business meeting by charging members reasonable fee and subsidizing rest from the BASS savings account – **Sandy Wood.**

There was some more discussion about the idea of a networking session. A time for such a session was discussed. It was decided to try for a Sunday session.

**ACTION:** Coordinate with Pittsburgh conference personnel to see about a possible networking session, maybe on Sunday – **Sandy Wood.**

7 Nominating Committee Report & Elections: At the Executive Committee meeting, Kris Craven was elected the Program Chair Elect and S. Scott Moor was elected the Secretary/Treasurer. Sandy Wood is the Program Chair Elect for 2007. Candidates for Board Members included: Rick Freuler, Margot Vigeant, and Beverly Jaeger. Rick and Beverly were elected to serve four-year terms. The division still needs to elect a Webmaster and two new executive committee members.

8 Beverly Jaeger, Rich Whalen, and Sue Freeman reported as the Newsletter Editors. They indicated that the 2006 newsletter highlighted a story taken from the best paper from the 2006 National Conference. The editors would like to have a highlight piece this year, however, they won the best paper and do not feel it is appropriate for them to write a piece on their own paper. They are asking for suggestions for a story to highlight in this year's newsletter.

Old Business

None.

New Business

- Should the division lower its dues? It seems that the division is losing members? - No we are holding steady at about 5% of ASEE members, this is a large division with average being about 3%. Comparing to the same time last year, we have the same amount of dues income.
- Is there a list of Freshman Programs and contacts? – Yes, Ken Brannan of the Citadel, has a database.
- John Krupczak of Hope College addressed the group about the Technical Literacy Committee.

There was a discussion in the Women in Engineering Division business meeting about the practice of accepting abstracts. They have decided to accept abstracts only provisionally until the paper is submitted. Should this division follow suit? In the past, the division has sent papers to poster sessions instead of rejecting them outright. Should posters be held to the same standard as the papers? If the work is not good enough to be published as a paper, is it good enough to be presented as a poster? Should we compromise – reject the ones that are not good enough and provisionally accept questionable ones only to be accepted after seeing the paper? What about putting a more strict definition on the requirements of the abstract and reject those that don't meet the new standards? The suggestion is to require a 1500-word limit; this should include references and figures. Also, with the Call for Papers and in the Newsletter, specify that the quality is important due to the competitiveness of the division. The Chair can also distribute this information to the division membership via the list-serve.

**ACTION:** TBD

## Notes from the Webmaster: Help Wanted

The FPD web site is up and running but is looking for a new webmaster. Below is an interview conducted by the FPD Newsletter with Chris Rowe who is retiring after many years of service. Any potential candidate should contact the Division chair whose contact information may be found in the Meet the Board section of the Newsletter.

FPD: Chris where do we access the web site?

*The website is currently located at [www.vuse.vanderbilt.edu/asee](http://www.vuse.vanderbilt.edu/asee). We have had some major server change over so the graphics are fussy. The new person would have to take this off VU's hands since we do not allow 'change' access from off campus. The last I checked it was working fine, it just needs some updating.*

FPD: What is involved in updating and uploading?

*The format for the site is whatever the new person wants it to be. There is no standard format. I just use ftp to upload files to the site index, but there are way more sophisticated programs out there.*

FPD: What type of software, if any, is required to maintain the site?

*This is the same as the previous response. I used MS Publisher which I found to be really cumbersome. One could use Dreamweaver or any number of other web editors which are probably easier. MSP is just what I had easiest access to at the time.*

FPD: Do you have any other information that would make it easy for a non-technical person to consider giving it a try?

*This is why I'm giving up the responsibility. The webmaster should be someone with more than basic knowledge of web design or someone interested and willing to learn about it. Overall it isn't that hard and with a bunch of undergraduates running around, it's easy to find someone to tutor the new person on the specifics. I found that I simply do not have the time to commit to it properly.*

Christopher J. Rowe  
Senior Lecturer in Engineering Science  
Director of First Year Programs  
Vanderbilt University School of Engineering  
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Below is one of a series of articles highlighting freshman engineering courses at different universities:

### Highlighting Freshman Programs: Ohio Northern University

Tucked away amongst the rural farm fields of northwest Ohio is the town of Ada and Ohio Northern University (ONU). The institution was first established in 1871 as a school to train teachers and was initially known as Ohio Normal School. During the 1880's, programs in engineering were initiated and the first engineering degree was awarded in 1882. In 1903, the name of the institution was changed to Ohio Northern University and the T. J. Smull College of Engineering was established in 1905. Throughout its history, Ohio Northern University has maintained its position as a selective, comprehensive private institution that uniquely blends a student centered, liberal arts education with professional programs including engineering, business, pharmacy, law, and the physical sciences.

Currently, ONU's College of Engineering offers five undergraduate degree programs in civil engineering, computer engineering, computer science, electrical engineering, and mechanical engineering. The college and its 22 faculty members are organized into three departments including the

Civil Engineering Department, the Electrical & Computer Engineering and Computer Science (ECCS) Department, and the Mechanical Engineering Department. The College of Engineering enrolls approximately 450 students with Mechanical Engineering being the largest program within the college and one of the largest programs on the ONU campus. Approximately 30% of the students participate in the voluntary cooperative engineering education program. As a principally undergraduate institution, the university is clearly focused on providing our students with quality educational experiences that are guided by ONU's motto: "large enough to challenge, small enough to care."

Ohio Northern has a common core of courses for its freshman engineering students in order to provide a solid educational foundation and to allow for the flexibility of changing engineering majors without penalty. The core consists of three quarters of calculus, two quarter of physics, one quarter of writing, an orientation course, and three quarters of



## Engineering at ONU (continued from previous page)

freshman engineering. Approximately 140 students are enrolled each year in the freshman engineering courses, where traditionally five sections are offered each quarter. Two books are used across the sequence: "Introduction to Engineering Design and Problem Solving" by Eide, Jenison, Mashaw and Northup (McGraw Hill, 2002), and "A Guide to Writing as an Engineer" by Beer and McMurray (Wiley, 2005).

A team of engineering faculty drawn from all departments are engaged in a multi-year, ongoing process for improving the freshman engineering curriculum, utilizing the operational philosophy of actively engaging students in team-based learning activities that expose them to engineering and call upon skills learned throughout the engineering core curriculum. The College has in place a continuous-improvement process which relates to all the courses, including the freshman year; the assessment data obtained through this process has been used to further guide our curricular improvement efforts. Given the noticeably positive effects of the use of hands-on design and analysis projects, in 2007-08 the freshman engineering courses will be organized as a series of project-based learning modules, ranging in length from two-week 'mini' projects to a culminating 10-week 'capstone' project. The learning modules are designed to increase in complexity and depth throughout the year. In addition, the learning modules are specifically chosen to provide examples of analysis and design from each of the four engineering programs so that the freshmen can have exposure to each major. Examples of projects around which the learning modules are organized include building a tower of straws, analysis of a traffic intersection, developing a garbanzo bean launcher, regulating production equipment through use of an a stable multivibrator circuit, designing alternative energy devices, and development of a bridge truss. Combined with the use of the learning modules are 'One Minute Engineer' (OME) presentations. OME presentations, which have been reported on at previous ASEE Conferences (papers 2006-911 and 2007-1599) consist of having a few students individually provide a short (nominally one minute) presentation on an engineering-related topic at the beginning of class each day, with each student presenting once during the term. Students select the



J.D Yoder presenting work done with Ohio Northern colleague John Estell and Northeastern University

engineering-related topics in advance on a first-come, first-serve basis in consultation with the instructor and are evaluated on the basis of their oral presentation skills. By successfully completing the modules and OME presentations, students demonstrate the ability to:

- Use a variety of software for engineering purposes (e.g. Excel, Word, AutoCAD, Matlab),
- Create a variety of technical documents (e.g. memos, proposals, reports),
- Complete the engineering design process with a variety of realistic criteria and constraints,
- Solve engineering analysis problems,
- Give both individual and group-based oral presentations,
- Work on multidisciplinary teams to complete a variety of tasks,
- Participate in projects showing the breadth of engineering majors at ONU, and
- Complete a 'capstone' design which includes prototyping, testing, and validation.

As a detailed example of a learning module, the Tower of Straws assignment presented by Estell, Jaeger, Whalen, Freeman, and Yoder at the 2007 ASEE Conference (paper 2007-686) has been incorporated into a two-week learning module for our first freshman engineering course. First, the

*(Continued on next page)*

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concept of evaluation criteria and the use of decision matrices are introduced. Students are then given the project assignment. While building a tower out of straws has been used for many years at all educational levels, this activity has been modified such that the entire engineering design process is experienced within a short period of time; details are provided in the aforementioned paper. The evaluation criteria for determining the “best” tower is collaboratively determined in class. The team members are charged to develop individual designs, and then evaluate all of their designs against the criteria to determine the team’s best design. Lecture is used during this time to further examine the concepts of technical and realistic (as defined by ABET) constraints via the comparison of different designs of the same product, such as cars or flashlights. The final lecture period in the module is then used for the tower building competition where a testing protocol is utilized to determine which team has the best overall design. Finally, a written report detailing the design, results, and reflections of each team helps summarize for the students the learning experiences in the areas of engineering design and teamwork, and how they can be applied in the future.

In conclusion, it is important to note that our curricular developments were not performed in a vacuum. The ideas of using Tower of Straws and One Minute Engineer were obtained by attending presentations made in the Freshman Programs Division track at the 2006 ASEE Conference in Chicago by faculty from Northeastern University. Seeing new ideas inspired the adaptation and modification of these assignments for use at our institution. A collaborative effort was made by faculty members at Ohio Northern and Northeastern University to explore these new ideas and opportunities, evaluate the outcomes, and report on the results at the 2007 ASEE Conference in Honolulu. Simply put, ASEE works: it allows those interested in curricular improvements to make connections for collaborative efforts in the implementation and further development of the ideas presented at the conference. Additionally, it provides a means for the subsequent dissemination of innovative teaching methodologies developed as a result of the collaboration so that others, especially our students, may benefit from the results. We welcome and encourage other schools to collaborate with ONU in the pursuit of educational excellence in our respective engineering programs.

### Some pictures ASEE Conference 2007



### Hawaii:



## ASEE 2007 FPD Program Chair Reflections

For the 2007 FPD program 123 blind abstracts were submitted. The 62 accepted abstracts resulted in blind draft papers of which 43 were accepted for the final program. These 43 final papers (no longer blind) were presented in 11 FPD sessions in Honolulu. According to my observations, the average attendance was 33; the low was 13 (Tuesday 6:30-8:00PM) and the high was 60 (Tuesday 2:15-4:00PM). The last session of the conference (Wednesday 4:30-6:00PM) had 27 attendees.

Gunter Georgi

Polytechnic University

2007 Freshman Programs Division Chair

georgi@poly.edu

## ASEE 2007 FPD Best Papers

Reviewers and FPD Board members voted for the best papers. The winners are:

### First Place (Session FPD9)

AC 2007-686: TOWER OF STRAWS: REACHING NEW HEIGHTS WITH ACTIVE LEARNING IN ENGINEERING DESIGN FOR THE FIRST-YEAR CURRICULUM

John K. Estell, Ohio Northern University

Beverly Jaeger, Northeastern University

Richard Whalen, Northeastern University

Susan Freeman, Northeastern University

John-David Yoder, Ohio Northern University



Gunter Georgi awarding the Best Paper to Rich Whalen, Beverly Jaeger and Sue Freeman from Northeastern University (John Estell and J.D. Yoder not present).

## ASEE 2007 FPD Best Papers (cont.)

### Second Place Tie (Session FPD3)

AC 2007-1515: EXPLORING THE RELATIONSHIPS AMONG PERFORMANCE ON ENGINEERING TASKS, CONFIDENCE, GENDER AND FIRST YEAR PERSISTENCE

Jennifer Light, University of Washington

Russell Korte, University Of Minnesota

Ken Yasuhara, University of Washington

Deborah Kilgore, University of Washington

### Second Place Tie (Session FPD2)

AC 2007-2988: ENGINEERING 100: AN INTRODUCTION TO ENGINEERING SYSTEMS AT THE US AIR FORCE ACADEMY

Lynnane George, U.S. Air Force Academy

Robert Brown, U.S. Air Force Academy

## ASEE 2007 FPD Best Presentations

### First Place (Session FPD5)

AC 2007-1236: DO THEY LIKE WHAT THEY LEARN, DO THEY LEARN WHAT THEY LIKE – AND WHAT DO WE DO ABOUT IT?

Beverly Jaeger, Northeastern University

Susan Freeman, Northeastern University

Richard Whalen, Northeastern University

### Best Student Presentation (Session FPD4)

AC2007-658: FRESHMAN PROJECT: AUTONOMOUS UNDERWATER VEHICLE (AUV)

David Ye, Polytechnic University

Andrey Ivannikov, Polytechnic University

### Best Graduate Student Presentation (FPD6)

AC 2007-2066: VIEWPOINTS FROM THE DOORSTEP: WHAT'S TURNING STUDENTS AWAY FROM COMPUTER SCIENCE AND ENGINEERING?

Ken Yasuhara, University of Washington



# Is There Anything Else Out There Besides FPD?

## Other Opportunities for Cooperative Involvement - Technological Literacy in relation to Engineering Education: An Interview with John Krupczak

**John Krupczak is a Professor in the Department of Engineering at Hope College in Holland Michigan.** At Hope College he has taught a technological literacy course called "Science and Technology of Everyday Life" to more than 1000 students since 1995. John has organized -with David Ollis of North Carolina State University- several workshops on technological literacy. He is the founding chair of the ASEE Technological Literacy Constituent Committee

**John, thank you for spending some time with us in the First-year Programs Division. Could you explain the term Technological Literacy?**

*From the perspective of engineering education, and as defined by the National Academy of Engineering, technological literacy is the broad and practical understanding of all types of technology. Technological literacy is not just knowing how to use computers and software applications. While technology is the product of the engineering professions, it includes not only technological devices themselves but the knowledge, processes, and organizations that create the devices. Like literacy in other areas such as reading, mathematics, or history, the goal of technological literacy is to allow people to participate thoughtfully in the world around them. Technological literacy might be called engineering for everyone.*

**What is the Technological Literacy Constitutive Committee? What are the Committee's objectives?**

*ASEE formed the Technological Literacy Constitutive Committee (TLCC) two years ago to acknowledge the leading role –and to some degree responsibility– that engineering educators should take in helping all Americans to know more about technology. The concept of technological literacy breaks new ground for ASEE as it concerns the understanding of technology by all students not just future engineers. In the past, individual ASEE members had been working on technological literacy but they were scattered among many different divisions, often working in isolation. By forming the TLCC, the ASEE provided a focus for technological literacy research and education.*

*The goal of the Committee is to reach full division status in ASEE. The Committee hopes to:*

- Create a sustained educational community engaged in technological literacy.
- Provide the focus for the development of technological literacy curriculum materials.
- Provide a forum for presentation and dissemination of technological literacy ideas and methods.
- Increase awareness and participation of ASEE members in technological literacy initiatives.



## Is There Anything Else Out There Besides FPD? (continued from previous page)

### Where would someone learn more about technological literacy?

*The National Academy of Engineering has led the effort to promote technological literacy and has advocated that all Americans can benefit from a better understanding of technology. Two good starting points are Technically Speaking and Tech Tally. Both can be read online at the National Academy Press and are listed below*

Technically Speaking: Why all Americans Need to Know More about Technology, G. Pearson & A. T. Young, editors. National Academies Press, (2002). <http://www.nap.edu/books/0309082625/html/>

Tech Tally: Approaches to Assessing Technological Literacy, E. Garmire & G. Pearson, editors. National Academies Press, (2006). <http://www.nap.edu/catalog/11691.html>

The NAE also has a *Technically Speaking* website: <http://www.nae.edu/nae/techlithome.nsf>

*Two workshops have been sponsored by the National Science Foundation to help identify the educational research issues and define models for technological literacy courses for undergraduates. It is likely that there will be more such seminars. Materials can be found at:*

“The Technological Literacy of Undergraduates: Identifying the Research Issues,” A Workshop Sponsored by the National Science Foundation at the National Academy of Engineering, April 18-19, 2005. [http://faculty.hope.edu/krupczak/Technological\\_Literacy\\_Report.pdf](http://faculty.hope.edu/krupczak/Technological_Literacy_Report.pdf)

“Technological Literacy of Undergraduates: Developing Standard Models”, A Workshop Sponsored by the National Science Foundation at the National Academy of Engineering, March 27-28, 2007.

[http://www.nsf.gov/events/event\\_summ.jsp?cntn\\_id=108527&org=NSF](http://www.nsf.gov/events/event_summ.jsp?cntn_id=108527&org=NSF)

[http://www.nsf.gov/attachments/108527/public/Tech\\_Lit\\_Workshop\\_Background.pdf](http://www.nsf.gov/attachments/108527/public/Tech_Lit_Workshop_Background.pdf)

### What can the TLCC offer FPD members?

*We see a natural overlap of interests between the goals of the Technological Literacy Constitutive Committee and the First-year Programs Division. Those working in technological literacy have endeavored to define what everyone needs to know and be able to do in regard to technology. In the process, curriculum materials and teaching methods have been created that are accessible and interesting to undergraduates of all disciplines. Certainly some of this work would be particularly appropriate for first-year engineering courses. At the same time, some materials and pedagogy for first-year engineering students could find a wider audience in technological literacy courses.*

*The TLCC looks forward to developing conversations and collaborations with the First-year Programs Division.*

2007 Annual Conference in Hawaii

June 24-27, 2007

## Freshman Programs Division (FPD) Sessions Details

Sunday, June 24, 2007

4:30-6:00 p.m. *Hawaii Convention Center* 303B

**Moderator(s):** James Morgan, Texas A&M University

**Division(s):** Freshman Programs Division

**0653: FPD Executive Committee Meeting**

This is a meeting of the Executive Committee of the Freshman Programs Division.

Sunday, June 24, 2007

6:00 p.m. -9:00 p.m. *Off Site* Hilton Hawaiian Village, Llima-Lawn

**0705: 2007 ASEE Picnic: Welcome to Paradise! presented by Dassault Systemes**

Aloha! Join friends and colleagues at the 2007 ASEE Picnic: Welcome to Paradise! This year's kickoff event will be held at one of the most picturesque and spacious seaside venues of the Hilton Hawaiian Village. Gentle ocean breezes, brilliant stars and exotic flora and wildlife combine to create a paradisiacal environment for this traditional island luau. The spectacular pinnacle of the evening features Polynesian entertainment, with music, song and dance from Hawaii, Tahiti and New Zealand, and the exciting Samoan fireknife dance! Don't miss it! The ASEE Annual Picnic is presented by Dassault Systemes. Please note, this is a ticketed event.

Monday, June 25, 2007

8:30-10:15 a.m. *Hawaii Convention Center* Ballroom A-B

**1205: Main Plenary: Experiencing Engineering**

The main plenary is traditionally the most highly anticipated session at the ASEE annual conference with over 2,000 attendees enjoying this important keynote address. This year, ASEE is pleased to have the participation of two dynamic, visionary leaders in the engineering and technology education space:

Philippe Forestier, Executive Vice President – Alliances, Marketing & Communications with Dassault Systemes, and Leah H. Jamieson, John A. Ed-wardson Dean of the College of Engineering and Ransburg Distinguished Professor of Electrical and Computer Engineering at Purdue University.

Philippe Forestier will address innovative industrial practices and their impacts on engineering skills at a global level, reflecting on working methods that require new engineering skills and inspire curricula for engineers of the 21st century. Leah Jamieson's talk will explore the role of experiential education and the themes of context and time in designing effective, efficient, affordable curricula that prepare students for leadership roles in addressing the global technological, economic and societal challenges of the 21st century. These unique perspectives, one from industry, the other from academia, will serve to crystallize and consolidate the innovative transformations driving changes in engineering curricula and practical skills development.--

Monday, June 25, 2007

10:30 a.m. -Noon *Hawaii Convention Center* 316A

**Moderator(s):** Beverly Jaeger, Northeastern University

**Division(s):** Freshman Programs Division

**1353: FPD2 -- Highlighting First-Year Programs**

This session will highlight key features for a variety of approaches to first-year programs.

AC 2007-1866: EXPLICIT DEVELOPMENT OF ENGINEERING SKILLS AND CHARACTERISTICS IN THE FRESHMAN YEAR

Joseph Schimmels, Marquette University

AC 2007-914: THE CHALLENGE OF TEACHING LARGE FIRST YEAR ENGINEERING CLASSES

Peter Burton, Royal Melbourne Institute of Technology

AC 2007-2367: FRESHMAN ENGINEERING LIVING-LEARNING COMMUNITIES AT VIRGINIA TECH

Jean Kampe, Whitney Edmister, Matthew Stimpson, Brad Matanin, Virginia Tech

Amanda Martin, Cory Brozina, Bevelee Watford, Virginia Tech

Monday 10:30 AM continued...

AC 2007-2988: ENGINEERING 100: AN INTRODUCTION TO ENGINEERING SYSTEMS AT THE US AIR FORCE ACADEMY

Lynnane George, Robert Brown, U.S. Air Force Academy

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Monday, June 25, 2007

2:15-4:00 p.m. *Hawaii Convention Center* 316B

**Moderator(s):** Richard Whalen, Northeastern University

**Division(s):** Freshman Programs Division

**1553: FPD3 -- Professional Issues for First-Year Courses**

This session will cover professional engineering education and professional skill development: teaming, communication and ethics.

AC 2007-566: ENGAGING FIRST-YEAR STUDENTS IN ETHICAL ISSUES VIA STAR TREK

Andrew Lau, Pennsylvania State University

AC 2007-1515: EXPLORING THE RELATIONSHIPS AMONG PERFORMANCE ON ENGINEERING TASKS, CONFIDENCE, GENDER AND FIRST YEAR PERSISTENCE

Jennifer Light, University of Washington

Russell Korte, University Of Minnesota

Ken Yasuhara, University of Washington

Deborah Kilgore, University of Washington

AC 2007-1744: ARE FRESHMAN ENGINEERING STUDENTS ABLE TO THINK AND WRITE CRITICALLY?

Karen High, Oklahoma State University

Rebecca Damron, Oklahoma State University

AC 2007-1956: IMPROVED RETENTION THROUGH INNOVATIVE ACADEMIC AND NON-ACADEMIC PROGRAMS

James Mathias, Lalit Gupta, John Nicklow, Jale Tezcan, Southern Illinois University-Carbondale

Ronald Caffey, Bruce Chrisman, Chris Pearson, Kathy Pericak-Spector, Rhonda Kowalchuk, Southern Illinois University-Carbondale

Ernest Lewis, Southern Illinois University-Carbondale, Hasan Sevim, Southern Illinois University-Edwardsville

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Monday, June 25, 2007

4:30-6:00 p.m. *Hawaii Convention Center* Exhibit Hall - Emerging Trends

**1693 Emerging Trends in Engineering Education Poster Session**

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Tuesday, June 26, 2007

7:00-8:15 a.m. *Hawaii Convention Center* 304A

**Moderator(s):** James Morgan, Texas A&M University

**Division(s):** Freshman Programs Division

**2153: FPD Business Meeting**

Bring your own breakfast and join us for the Freshman Programs Division business meeting.

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Tuesday, June 26, 2007

8:30-10:15 a.m. *Hawaii Convention Center* 316A

**Moderator(s):** Nancy Lamm, Indiana University-Purdue University-Indianapolis

**Division(s):** Freshman Programs Division

**2253: FPD4 -- Hands-on & Real-World Studies**

These papers will discuss the impact of case studies, projects and design competitions on first-year programs.

AC 2007-123: INCORPORATING GLOBAL ISSUES INTO FRESHMAN ENGINEERING COURSE

Larry Bland, John Brown University

Tuesday 8:30 AM continued:

AC 2007-658: FRESHMAN PROJECT: AUTONOMOUS UNDERWATER VEHICLE (AUV)

David Ye, Ilya Brutman, Gunter Georgi, Lorcan Folan, Polytechnic University

AC 2007-1531: PREPARING FRESHMEN FOR FUTURE ENERGY ISSUES

Jonathan Rice, Taryn Bayles, Greg Russ, Julia Ross, University of Maryland-Baltimore County

AC 2007-1748: HANDS-ON INTRODUCTION TO CHEMICAL AND BIOLOGICAL ENGINEERING

Joseph Menicucci, James Duffy, Betsy Palmer, Montana State University

Tuesday, June 26, 2007

12:30-2:00 p.m. *Hawaii Convention Center 316B*

**Moderator(s):** John Gardner, Boise State University

**Division(s):** Freshman Programs Division

**2453: FPD5 -- Placement & Early Success**

This session will focus on placement of entering students and on strategies for success in early courses.

AC 2007-1236: DO THEY LIKE WHAT THEY LEARN, DO THEY LEARN WHAT THEY LIKE – AND WHAT DO WE DO ABOUT IT?

Beverly Jaeger, Susan Freeman, Richard Whalen, Northeastern University

AC 2007-1653: AN ONLINE REAL-TIME QUIZ SYSTEM FOR READINESS ASSESSMENT TESTING

Joshua Peschel, Luciana Barroso, Anthony Cahill, James Morgan, Texas A&M University

AC 2007-2930: A SCHOLARSHIP RECRUITMENT AND SELECTION STRATEGY THAT SUCCESSFULLY ATTRACTS DIVERSE AND ACADEMICALLY TALENTED FRESHMEN

Chris Papadopoulos, Karen Brucks, Eric Key, University of Wisconsin-Milwaukee

Ethan Munson, K Vairavan, University of Wisconsin-Milwaukee

AC 2007-1460: A SUCCESSFUL ENGINEERING PEER MENTORING PROGRAM

Carol Gattis, Bryan Hill, Abraham Lachowsky, University of Arkansas

Tuesday, June 26, 2007

2:15-4:00 p.m. *Hawaii Convention Center 316A*

**Moderator(s):** sandy wood, alabama

**Division(s):** Freshman Programs Division

**2553: FPD6 -- Early Intervention & Retention Programs**

This session will provide an overview of intervention & retention programs. Focus will be on programs targeted toward first- and second-year students.

AC 2007-793: ADVANCED PLACEMENT CREDIT: A DOUBLE-EDGED SWORD IN ENGINEERING EDUCATION

Catherine Pieronek, University of Notre Dame

AC 2007-1266: AN INNOVATIVE METHOD TO REALISTICALLY TRACK ENGINEERING STUDENT RETENTION AND ACADEMIC PROGRESS

Pat Pyke, John Gardner, Marcia Belcheir, Janet Hampikian, Boise State University

Amy Moll, Cheryl Schrader, Boise State University

AC 2007-2066: VIEWPOINTS FROM THE DOORSTEP: WHAT'S TURNING STUDENTS AWAY FROM COMPUTER SCIENCE AND ENGINEERING?

Ken Yasuhara, University of Washington

AC 2007-2076: EXPANDING UNDERSTANDING OF FIRST-YEAR ENGINEERING STUDENT RETENTION AND TEAM EFFECTIVENESS THROUGH SOCIAL STYLES ASSESSMENT

Daniel Knight, Jacquelyn Sullivan, Beverly Louie, University of Colorado at Boulder



Tuesday, June 26, 2007

4:30-6:00 p.m. *Hawaii Convention Center 321B*

**Moderator(s):** Kristine Craven, Tennessee Technological University

**Division(s):** Freshman Programs Division

**2653: FPD7 -- Service Learning**

This session features presentations on service-learning. Papers include the impact of service-learning on a first semester course and the use of service-learning to incorporate K-12 outreach.

AC 2007-1395: OPEN-ENDED DESIGN PROJECT AS INTRODUCTION TO DESIGN FOR CIVIL ENGINEERING FRESHMEN

Bert Davy, Indranil Goswami, Jiang Li, Morgan State University

Gbekeloluwa Oguntimen, Charles Oluokun, Arcadio Sincero, Morgan State University

AC 2007-1704: ENGINEERING DESIGN VIA TEAM-BASED SERVICE-LEARNING PROJECTS: CASE SURVEY OF FIVE UNIQUE PROJECT GENRES

Promiti Dutta, Columbia University

Alexander Haubold, Columbia University

AC 2007-2287: DISTINGUISHING AMONG PROCESSES OF PROBLEM SOLVING, DESIGN, AND RESEARCH TO IMPROVE PROJECT PERFORMANCE

Dan Cordon, Barbara Williams, Steven Beyerlein, Donald Elger, University of Idaho

AC 2007-2550: FIRST-YEAR EXPERIENCE AND BEYOND: USING THE ENGINEERING DESIGN PROCESS TO SUPPORT LEARNING AND ENGINEERING SKILL DEVELOPMENT

Paul Pagano, Amanda Rossman, Kendall Vasilnek, Betsy Aller, Western Michigan University

Andrew Kline, Edmund Tsang, Edward Brabandt, Western Michigan University

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Tuesday, June 26, 2007

6:30-8:00 p.m. *Hawaii Convention Center 313A*

**Moderator(s):** Christopher Rowe, Vanderbilt University

**Division(s):** Freshman Programs Division

**2753: FPD8 -- Introductory Courses**

This session will focus on issues ranging from design to nanotechnology and programming issues in first-year courses.

AC 2007-341: DESIGN OF AN INTRODUCTORY MATLAB COURSE FOR FRESHMAN ENGINEERING STUDENTS

Darryl Morrell, Arizona State University

AC 2007-1478: INTRODUCING CIVIL ENGINEERING ANALYSIS THROUGH PROGRAMMING

George List, North Carolina State University

AC 2007-1485: UTILIZING PROGRAMMING PROJECTS IN A FRESHMEN PROGRAMMING COURSE

Steven Lehr, Embry-Riddle Aeronautical University

Christopher Grant, Embry-Riddle Aeronautical University-Prescott

AC 2007-1801: INTRODUCTION OF NANOTECHNOLOGY INTO FUNDAMENTAL ENGINEERING CLASSES: HOW TO THINK SMALL IN A GOOD WAY!

Robert Pieri, Ghodrat Karami, North Dakota State University

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Wednesday, June 27, 2007

7:00-8:15 a.m. *Hawaii Convention Center 321A*

**Moderator(s):** William Koffke, Villanova University

**Division(s):** Freshman Programs Division

**3153: FPD9 -- Teaching Methods & Technology**

The papers in this session will cover topics ranging from active learning to multidisciplinary activities.

AC 2007-686: TOWER OF STRAWS: REACHING NEW HEIGHTS WITH ACTIVE LEARNING IN ENGINEERING DESIGN FOR THE FIRST-YEAR CURRICULUM

John K. Estell, Ohio Northern University

Beverly Jaeger, Richard Whalen, Susan Freeman, Northeastern University

John-David Yoder, Ohio Northern University

AC 2007-2218: ADDRESSING STUDENT RETENTION IN ENGINEERING AND ENGINEERING TECHNOLOGY THROUGH THE USE OF A MULTIDISCIPLINARY FRESHMAN COURSE

Anthony Dean, Bonita Anthony, Linda Vahala, Old Dominion University

AC 2007-2539: EVALUATING THE SEMINAR MODEL FOR FIRST YEAR ENGINEERING EDUCATION

Margot Vigeant, Karen Marosi, Ronald Ziemian, Bucknell University

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Wednesday, June 27, 2007

12:30-2:00 p.m. *Hawaii Convention Center 322A*

**Moderator(s):** Susan Freeman, Northeastern University

**Division(s):** Freshman Programs Division

**3453: FPD10 -- Pre-Engineering and Bridge Programs**

The papers in this session will cover topics ranging from "special needs" projects to pre-engineering courses for unprepared first-year students.

AC 2007-483: AAP: A PRE-FIRST YEAR ENGINEERING BRIDGE PROGRAM

Kumar Yelamarthi, Ruby Mawasha, Jenny Garringer, Wright State University

Richard Rathbun, Thomas L. Bazzoli, Wright State University

AC 2007-1247: THE IMPACT OF "SPECIAL NEEDS" PROJECTS ON STUDENT LEARNING

Cecelia Wigal, University of Tennessee-Chattanooga

Molly Littleton, Signal Centers

AC 2007-1503: AN ENGINEERING BRIDGE PROGRAM: IMPROVING THE SUCCESS RATE OF UNDERPREPARED STUDENTS IN ENGINEERING

Michele Grimm, Wayne State University

AC 2007-1862: FRESHMAN ENGINEERING STUDENT RESPONSES TO A PRE-COLLEGE PERCEPTION SURVEY

Blair Rowley, Kumar Yelamarthi, Cory Miller, Thomas L. Bazzoli, Wright State University

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Wednesday, June 27, 2007

2:15-4:00 p.m. *Hawaii Convention Center 321A*

**Moderator(s):** rick freuler, Ohio State

**Division(s):** Freshman Programs Division

**3553: FPD11 -- Multidisciplinary Experiences**

The papers in this session will cover topics ranging from interdisciplinary design projects to multidisciplinary course development.

AC 2007-1021: THE AQUARIUM PROJECT: TEACHING ENGINEERING PRINCIPLES AND SUSTAINABILITY

Kauser Jahan, Rowan University

AC 2007-1599: ONE-MINUTE ENGINEER, NTH GENERATION: EXPANSION TO A SMALL PRIVATE UNIVERSITY

John-David Yoder, Ohio Northern University

Beverly Jaeger, Northeastern University

John K. Estell, Ohio Northern University

AC 2007-2494: A COOPERATIVE LEARNING MODEL IN MULTI-DISCIPLINES ACROSS UNIVERSITIES IN FRESHMEN COURSES

Mehrube Mehrubeoglu, Texas A&M University - Corpus Christi

Lifford McLauchlan, Texas A&M University-Kingsville

AC 2007-2801: A HYBRID FIRST-YEAR SCIENCE COURSE FOR ENGINEERING STUDENTS – INTEGRATING BIOLOGY WITH CHEMISTRY

W. David Harding, Pauline Schwartz, Jean Nocito-Gobel, Agamemnon Koutsospyros, University of New Haven

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Wednesday, June 27, 2007

4:30-6:00 p.m. *Hawaii Convention Center* 307B

**Moderator(s):** S. Scott Moor, Indiana University-Purdue University-Fort Wayne

**Division(s):** Freshman Programs Division

**3653: FPD12 -- Novel Approaches to First Year Programs**

Novel approaches to first-year programs will be presented in this session.

AC 2007-105: A STUDY OF CHALLENGE-BASED LEARNING TECHNIQUES IN AN INTRODUCTION TO ENGINEERING COURSE

Christopher Rowe, Stacy Klein, Vanderbilt University

AC 2007-553: THE RIDDLE OF THE DESIGN AND CONSTRUCTION OF THE GREAT PYRAMID OF EGYPT: AN INSTRUCTIONAL TOOL FOR ENGINEERING FRESHMAN PROGRAMS

Wafeek Wahby, Eastern Illinois University

AC 2007-1831: THE IMPACT ON STUDENTS OF FRESHMAN DESIGN PROJECTS SUPPORTING ADVANCED COURSES

Cecelia Wigal, Ignatius Fomunung, Edwin Foster, Ronald Goulet, University of Tennessee-Chattanooga

AC 2007-2476: RETAINING FRESHMAN ENGINEERING STUDENTS THROUGH PARTICIPATION IN A FIRST-YEAR LEARNING COMMUNITY: WHAT WORKS AND WHAT DOESN'T

Janet Meyer, Nancy Lamm, Joshua Smith, Indiana University-Purdue University-Indianapolis

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