

Spring 2010 ASEE Student Newsletter

Editors:

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Message from the SCC Program Chair



Dan Bumblauskas (bbqx@iastate.edu)
ASEE SCC Program Chair/Vice Chair
ABB Inc.
Doctoral Student, Department of Industrial and Manufacturing Systems Engineering
Iowa State University

I hope that everyone is enjoying our SCC newsletters! I wanted to give a special thanks to Ana Torres–Ayala and Alexandra Coso for doing such an outstanding job coordinating and distributing this newsletter.

We continue to rapidly approach the 2010 ASEE Annual Conference scheduled to be held June 20–23, 2010 in Louisville, Kentucky.

Another reminder that ASEE student members can attend the conference for free! This is a great opportunity for student members to network with peer graduate students and faculty members from universities around the U.S. and abroad. This is also a venue to learn about positions and job openings, hear about engineering education research and development, and meet possible collaborators on current and future projects.

If you will be attending the conference and have not already done so, make sure to get included in our headcount for our **second annual ASEE SCC dinner** event to be held Monday, June 21. Due to a constraint on the registration procedure you will not see the event listed under the ticketed event section of the registration site. Instead, we are taking a list of names of students interested in attending the event. If you are a student

member OR a member who plans to register a student under the “Bring A Student” classification, you may sign yourself or your student up for the dinner event by providing the following information: Name (or name of student), University / Organization, and E-mail address. Please email this information directly tobbqx@iastate.edu. **Names will be taken until April 30th.** As there are a limited number of spots, please do not wait until the last minute to sign up. Once all spots have been filled, additional requests will be added to a waiting list.

We have had a great response to our first **poster session call for posters**. If you have not yet submitted a poster for review and wish to do so, please e-mail a draft poster to bbqx@iastate.edu. Student authors now have the opportunity to submit a poster for review instead of a full paper. If all poster author(s) are students, all accepted posters will have the \$75 publication fee WAIVED! The requirement is that the author is a student and that student must present the poster. Faculty advisors/authors are NOT permitted to present the poster. If you wish to submit a poster with a faculty member you will still be required to pay the \$75 publication fee.

Finally, here is a reminder of some **critical dates for authors** who have submitted papers or posters being reviewed for the conference and for those who plan to attend the conference. If you submitted a poster, you should have already received feedback on the status of your paper.

I hope everyone is having a great spring semester and that I will see many of you this June in Louisville!

SCC Call for Nominations

We are currently soliciting nominations for the SCC offices for the 2010–2011 academic year. If you are interested in getting more involved in the ASEE and the SCC, this is your opportunity to take on a leadership role. A description of the offices can be found at: <http://students.asee.org/?p=308> .

Individuals are asked to submit their nominations to Reginald Rogers (rerjr@umich.edu) **NO LATER than Friday, April 30th**. If you have any questions, please feel free to contact him.

Member News



Adam Carberry (adam.carberry@tufts.edu)
SCC Zone Liaison
Doctoral Candidate, Education Department
Tufts University

Adam Carberry co-authored with Hee-Sun Lee and Matthew Ohland an article titled “Measuring Engineering Design Self-Efficacy”. The study validated an instrument designed to measure individuals’ self-concepts toward engineering design tasks. It appeared in the January 2010 issue of the Journal of Engineering Education.



Reginald Rogers, PhD (rerjr@umich.edu)
SCC Chair
Post-Doctorate Fellow, Chemical and Biomedical Engineering Department
Rochester Institute of Technology

Reginald Rogers recently received his Ph.D. in Chemical Engineering from the University of Michigan. He is currently a Post Doctorate Fellow at the Rochester Institute of Technology where he is part of the new Chemical and Biomedical Engineering Department.



Matthew A. Verleger, PhD (mverleg1@purdue.edu)
Immediate Past SCC Chair
Post-Doctoral Researcher
Purdue University

Matthew Verleger recently received his Ph.D. in Engineering Education from Purdue University. His research focuses on Model-Eliciting Activities and the first-year experience. He is currently a Post-Doctoral Researcher at Purdue. In August, Matthew will be starting a job as an Assistant Professor of Engineering and Technology Education at Utah State University.

Chapter News

University of Texas at Austin Chapter Sponsors Faculty Career Workshop and Volunteers with Introduce a Girl to Engineering Day

Krista Fridley (krista.fridley@mail.utexas.edu)
PhD Candidate, Biomedical Engineering Department
The University of Texas at Austin

Students at the University of Texas at Austin started off the New Year with some tips on “Landing That Faculty Position.” In the ASEE chapter’s January meeting, Dr. Larry Lake gave insight into how to construct an attention grabbing Curriculum Vitae (CV) and what departments look for in prospective future faculty. In addition, Dr. Lake discussed what aspiring faculty candidates should be seeking as they start their academic career. He stressed the importance of a good CV, which should be brief and emphasize what makes the candidate stand out. Students in attendance were also encouraged to demonstrate their potential with research and funding ideas beyond their dissertation.

Additionally, ASEE chapter members helped 6th through 8th grade students explore engineering at the University of Texas at Austin’s annual “Introduce a Girl to Engineering Day” in February. In the “Gone with the Wind” activity, volunteers guided students in designing a free standing wind machine that can pick up a weight from floor. Not only did the chapter members have a great time interacting with young students, but also hopefully encouraged some to consider a career in engineering.

FYI

PhD Consortium in Engineering Education – Special Session at 2010 ASEE Annual Conference

Sunday June 20, 2010 from 2:00 p.m. to 5:00 p.m.

Robin Adams (rsadams@purdue.edu)
Assistant Professor, School of Engineering Education
Purdue University

The purpose of this special session is to facilitate the creation of a PhD Consortium in Engineering Education that can foster a rich intellectual community for graduate students. As seen in other professional communities, a Ph.D. Consortium can provide graduate students with opportunities to (1) present their work-in-progress and receive constructive feedback or guidance, (2) explore important theoretical, methodological, and practical issues, (3) become part of the larger community of scholars, and (4) develop research collaborations for graduate work and beyond. Working in small groups, session participants (primarily graduate students) will co-develop the goals, structures, and activities that will guide the formal development of a PhD Consortium in Engineering Education.

The session will begin with a discussion of the ways graduate students currently participate in ASEE and an overview of session goals and activities. After a brief presentation on existing PhD Consortium models, working groups will iteratively formulate needs and develop a set of alternative models. The session presenters will facilitate a dialogue on the alternatives groups create to identify a synergistic model that addresses diverse needs. This special session is a partnership between engineering education graduate programs, the ASEE Student Constituent Committee, and the ASEE Educational Research and Methods division. To register for this session visit the ASEE registration site at <http://www.asee.org/conferences/annual/2010/Registration.cfm>. The cost is \$25. For additional information, please contact Robin Adams (rsadams@purdue.edu).

New Head of the School of Engineering Education at Purdue Appointed

David Radcliffe was appointed the next head of Purdue University's School of Engineering Education effective May 1, 2010. He will be the first ENE head to hold the title "Kamyar Haghighi Head of the School of Engineering Education." Haghighi created the world's first Department (now School) of Engineering Education at Purdue in 2004.

STEM Education Scholars Program

May 18–20, 2010

Michigan State University

East Lansing, MI

URL: <http://fod.msu.edu/springinstitute/stemes/about.asp>

Michigan State University will host the 14th Annual Science, Technology, Engineering, and Mathematics (STEM) Education Scholars Program, May 18–20, 2010 in East Lansing, MI. The workshop provides an opportunity for post-doctoral fellows, senior academic-track Ph.D. students, and non tenured or fixed term faculty members to strengthen their preparation as college teachers in science, technology, engineering and mathematics.

STEM doctoral students receive extensive preparation to become excellent researchers in their disciplines. However, even those who plan on academic teaching careers spend little time preparing to also become superb teachers. The STEM Education Scholars Program benefits new and prospective faculty members by focusing on successful approaches to teaching and learning and on how to balance and integrate the research and teaching aspects of their careers. This valuable program can be an inexpensive addition to a new faculty member's start-up package at a cost of just \$850 plus travel expenses.

The STEM Education Scholars Program is designed for current and future faculty in the natural and social sciences, engineering and mathematics, and emphasizes interdisciplinary collaboration. While originally funded through NSF, the program is now offered by the Center for the Integration of Research, Teaching, and Learning (CIRTL) Network, a partnership among the University of Colorado at Boulder, Howard University, Michigan State University, Texas A&M University, University of Wisconsin–Madison, and Vanderbilt University.

FOR MORE INFORMATION, contact Rique Campa, STEMES Program Director, at campa@msu.edu or 517-353-2042, or visit <http://fod.msu.edu/springinstitute/stemes/about.asp>.

To apply for this program, access the online application form at: <http://fod.msu.edu/springinstitute/stemes/application.asp>.

2010 ASEE Election Ballots – Deadline Extension

Due: April 15th, 2010 (postmarked)

Due to an error in mailing, the ballots for the 2010 ASEE Elections were mailed 4th class instead of 1st class mail. As a result, there have been substantial delays in members receiving their ballots. Thus, the ASEE Board of Directors has approved extending the deadline for the return of ballots to April 15th. This means that for this year, the 2010 ballots must be postmarked no later than April 15th to be included in the count. We apologize for this error, and ask that you please vote and return your ballots to ASEE as soon as possible.

If, for any reason, you have not received your ballot, please contact Warren Sallade, ASEE Executive Office, Email – w.sallade@asee.org and a replacement ballot will be mailed to you immediately.

Book Review

Kuhn, T.S. (1970). *The Structure of Scientific Revolutions*. The University of Chicago Press, 2nd edition.

Reviewed by Tatiana Goris (tgoris@purdue.edu)

PhD Student, College of Technology

Purdue University

In his book, Kuhn argued that science did not progress via a linear accumulation of new knowledge but underwent periodic revolutions, also called “paradigm shifts”. He identified three main stages, which allowed any scientific revolution to be possible: (1) *The period of Normal Science* – when every new discovery could be explained by the ruling paradigm; (2) *Crisis in science* – the appearance of anomalies and inexplicable facts; (3) *Science revolution* – a creation of new paradigm, or in other words, a macro-conceptual change in the scientific environment.

After a scientific revolution: “Familiar objects are seen in a different light and joined by unfamiliar ones as well. Scientists see the world of their research-engagement differently. They are responding to a different world. What people see depends both on what they look at and on what their previous visual-conceptual experience has taught them to see” (Pajares, F., n.d.). A good illustration of this idea is presented on the Figure 1. Recognizing a duck or rabbit depends on what a person wants to see.

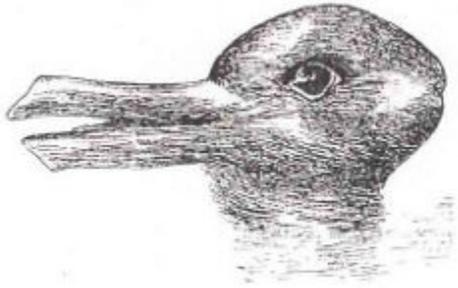


Figure 1. Duck–Rabbit Illusion (Jastrow, 1899)

At the present time this book is considered as one of the classic books about history and evolution of science. Kuhn's work had an enormous impact on modern philosophy. The book had three editions (1962, 1970 & 1996) and was translated in many languages. There was a time when this book was the most cited in scientific literature. For those who would like to read it but have no time Frank Pajares (n.d.) wrote an excellent review where he analyzed chapter by chapter Kuhn's book.

This book might be very interesting for graduate students who are seriously considering becoming professional researchers. Because it is almost impossible to conduct valid research without clear understanding of "what is research" and what general laws and rules science has to obey.

For people who are more orientated towards engineering activity in industry or for students who are undecided about their future, this book won't be a waste of time either. Science is an integral part of engineering education. According to ABET, "any engineering–major graduate is expected to demonstrate: (a) an ability to apply knowledge of mathematics, science and engineering; (b) an ability to design and conduct experiments, as well as to analyze and interpret data; (c) an ability to design a system, component or process to meet desired needs within realistic constraints such as economic, environmental and social" (Christensen et al., 2009, p.124). In the other words, without strong theoretical knowledge, an engineer cannot perform effectively and successfully.

My impression after reading this book was that the author represents science as a living organism. He explains how science develops and what development stages science has to follow. These development stages of science are related to the development of all human civilization and the history of human society.

References

Christensen, S.H., Delahousse, B. & Meganck, M., Eds. (2009). Engineering in Context. Academica, Aarhus. ISBN 978–87–7675–700–7.

Jastrow, J. (1899). The mind's eye. Popular Science Monthly, 54, 299–312. Retrieved from: http://commons.wikimedia.org/wiki/File:Duck–Rabbit_illusion.jpg

Kuhn, T.S. (1970). The Structure of Scientific Revolutions. The University of Chicago Press, The second edition.

Pajares, F. (n.d.) Outline and Study Guide for "The structure of scientific revolution" Retrieved from: <http://www.des.emory.edu/mfp/Kuhn.html>

Position Announcements

Faculty, Tenure Track

Civil Engineering Technology, Environmental Management & Safety (CETEMS) Department

Rochester Institute of Technology

URL: <http://mycareer.rit.edu/faculty/IRC37175-Instructional-Faculty>

The Civil Engineering Technology Faculty at RIT is seeking outstanding candidates interested in a career in higher education. All candidates must have strong academic background and least three years professional experience working in the U.S. as a civil engineer. The candidate will instruct courses in the civil engineering technology program. Main responsibilities include teaching undergraduate on-campus courses in the areas of: structural computer applications, structural loads & systems, structural analysis, timber design, steel design, reinforced concrete design, and dynamics.

We are seeking individuals who are committed to contributing to RIT's core values, honor code, and statement of diversity.

Women are encouraged to apply for this position.

This position is subject to available funding.

REQUIRED QUALIFICATIONS

PREFERRED QUALIFICATIONS

- Three years relevant engineering experience in the U.S.
- Ph.D. or earned doctorate in civil engineering or a related engineering technology or engineering discipline (or ABD with completion date prior to August 15, 2010).
- Applicants must be eligible to work in the U.S. at the time of appointment (anticipated to be June 2010).
- Professional experience as a structural engineer
- PE license
- Previous teaching experience
- Professional recognition and awards in the field of civil-structural engineering
- Brings diversity to the Department

Assistant Professor, Biomedical Engineering, New Jersey Institute of Technology

URL: <https://njit.jobs> (Posting Number: 0600495)

The Department of Biomedical Engineering at New Jersey Institute of Technology seeks a new tenure-track assistant professor in the area of neural engineering or tissue engineering/regenerative medicine. Candidates must have an earned doctorate in biomedical engineering, or related field.

Applications should include a letter, current curriculum vitae, and the names and addresses (including e-mail addresses) of at least three references. The application should include a vision statement for the candidate's

research and teaching in the department. Apply at <https://njit.jobs> and search for posting # 0600495. NJIT is an equal opportunity employer M/F/H/V.

Assistant Professor, Tenure Track

Department of Industrial and Manufacturing Engineering

University of Wisconsin–Milwaukee

URL: <https://www.jobs.uwm.edu/> (Position Number: 1127)

The Department of Industrial and Manufacturing Engineering at the University of Wisconsin–Milwaukee invites applications for a tenure track Assistant Professor to begin in August 2010. The search is open to candidates with expertise in operations research. Preference will be given to candidates with expertise in operations research applications to nanotechnology or energy. A strong background in statistics is preferred. Ability to communicate effectively and a willingness and ability to develop a strong government and/or industry sponsored research program are highly desired.

Applicants should have (a) Ph.D. degree in Industrial Engineering or related field before the first date of employment, (b) the ability to teach at both the undergraduate and graduate level, and (c) the ability to supervise undergraduate students and graduate students at the M.S. and Ph. D. levels.

Review of applications begins on April 26, 2010 and will continue until the positions are filled. Questions should be directed to Dr. Arun Garg, Professor and Chair, Industrial and Manufacturing Engineering, at 414–229–6240 or to arun@uwm.edu.

NSF–ASEE Industry Research Fellows Program

URL: <http://aseensfip.asee.org/>

The Corporate Research Postdoctoral Fellowship Program provides recent engineering PhD recipients the opportunity to conduct postdoctoral research in a corporate setting. These creative and highly trained engineers will contribute to areas of great interest and relevance to the nation. Each research fellow will receive a stipend of at least \$75,000 plus health insurance benefits. The host company will provide a minimum of \$27,500 and other non–cash support. With generous support from the National Science Foundation (NSF), this program will support 40 positions for a one–year appointment. This program is administered by the American Society for Engineering Education (ASEE).

The Summer 2010 ASEE Student Newsletter will be published in June 2010. Contributions are due May 31 st, 2010. See the full call for contributions at: http://students.asee.org/?page_id=271.

The next newsletter will be a special pre-conference edition. In addition to the regular types of contributions we are interested in including: tips for first-time or experienced ASEE conference attendees, things to do and see in Louisville, and lists of student presentations. Send us your tips or announce your conference presentation by e-mailing: attorres@mail.usf.edu.