

Journal Publications

Dr. Ken Calvert, computer science, is the co-guest-editor of an issue of the IEEE Journal of Selected Areas in Communications (JASC) . The issue is on "Active and Programmable Networks". According to the Institute of Scientific Information's 1999 Journal Citation Report, JSAC is the number one electrical engineering journal in the area of Telecommunications, as measured by citation frequency. The issue will appear early next year.

Presentations

Dr. Ken Calvert, computer science, gave a tutorial on Active Networks at the International Conference on Network Protocols, Nov. 14-17, in Osaka, Japan.

Dr. Jim McDonough, mechanical engineering, and graduate students presented three talks at the recent American Physical Society Division of Fluid Dynamics Meeting, Nov. 19-21, 2000, Washington, DC. These are:

S. A. Bible and J. M. McDonough, "Basins of attraction for a discrete dynamical system derived from the 2-D Navier-Stokes equations"

M. T. Huang and J. M. McDonough, "A discrete dynamical system model of Temporal velocity and temperature fluctuations in turbulent convection"

J. M. McDonough and M. T. Huang, "Discrete dynamical systems subgrid-scale models for LES of turbulent combustion"

Dr. M. Pinar Mengüç, mechanical engineering, was an Invited Lecturer at a workshop on Laser Diagnostics for Combustion Systems at the Cairo University, Cairo, Egypt, November 18 - November 22, 2000. His presentations were on the topics of the Fundamentals of Light Scattering and Imaging Techniques, and Applications to Particle Characterization Devices.

Dr. Greg Wasilowski, computer science, presented a talk at the 4th International Conference on Monte Carlo and Quasi-Monte Carlo Methods. The conference was held in Hong Kong in November/December, 2000.

Dr. Keith Whites, electrical engineering, presented two papers at the *Proceedings of Bianisotropics 2000 8th International Conference on Electromagnetics of Complex Media*, Lisbon, Portugal, Sept. 27-29, 2000. They are: "Numerical computation of the effective quasistatic permittivity for isotropic lattices of complex shaped inclusions," (with F. Wu), pp. 41-44; and "Anisotropy electrical properties of mono-layers of spherical particles located on substrate," (with L. G. Grechko, V. V. Gozhenko, and V. N. Malnev), pp. 111-114.

Research Funding

Dr. D. Manivannan, Assistant Professor of Computer Science, received the Faculty CAREER Award from the National Science Foundation, Division of Computer and Communications Research, for his proposal "CAREER: Design and Implementation of Fault-Tolerant Distributed Computing Systems". The estimated total amount of the award is \$220,000 and is expected to run for four years (September 2000 - August 2004). The expected outcomes of this research project are (i) an improved understanding of the issues involved in building reliable distributed systems; (ii) improved techniques for fault-tolerance in distributed systems based on the hard experimental data as well as strong theoretical foundation; (iii) integration of the results of our research in an advanced course in distributed systems which would facilitate the students not only understand the intricacies involved in building reliable distributed systems but also help them acquire the necessary techniques for building such systems.

Professional Activities

Dr. Jack Leifer, mechanical engineering, Paducah, participated in an NSF panel review of proposals to their Advanced Technology Education (ATE) program, 11/30 - 12/2.

Dr. D. Manivannan, computer science, serves on the Program Committee for the following conferences:

21st IEEE International Conference on Distributed Computing Systems

20th IEEE Symposium on Reliable Distributed Systems (SRDS - 2001), New Orleans.

The Second International Conference on Parallel and Distributed Computing, Applications, and Techniques (PDCAT 2001), July 9-11, 2001, Taipei, Taiwan.

Dr. Keith Whites, electrical engineering, was a Session Chairman for “Composite Materials: Theory,” *Bianisotropics 2000: 8th International Conference on Electromagnetics of Complex Media*, Instituto Superior Técnico, Technical University of Lisbon, Portugal, September 27-29, 2000. Dr. Whites also serves as a Scientific Advisory Committee Member, *Bianisotropics 2000: 8th International Conference on Electromagnetics of Complex Media*, Instituto Superior Técnico, Technical University of Lisbon, Portugal, September 27-29, 2000.

Student News and Activities

Congratulations **UK ACM Programming Team**, one of only 65 teams out of 2,200 which competed worldwide advancing to the World Finals of the 25th Annual ACM International Collegiate Programming Contest.

Sponsored by IBM, the competition will be held March 7-11, 2001, in Vancouver, Canada. Team members include Charles Andrew Martin, Neil Moore, Leonid Poutievski and Bill Wyatt (reserve). Dr. Jerzy Jaromczyk once again serves as team Coach.

Members of the **UK AIChE student chapter** recently attended the annual AIChE national conference in Los Angeles, California. At the conference, the students were formally recognized as with an Outstanding Chapter Award for 2000-2001. Chapter President was Tony Lucas and Chapter Advisor was Dr. D. B. Bhattacharyya.

Christy Woolums, Current UK AIChE President, and Stephanie McCoy, gave an invited workshop presentation entitled "Community Service Activities of Student Chapter".

In addition, five students were among the 130 students from across the nation competing in the poster contests of the in various AIChE sections. The five had great success in the competitions and the results are as follows:

First Place Winner: Jared Tatum (Research advisor: Dr. Barbara Knutson)

First Place Winner: Neal Scruggs (Research Advisor from University of Connecticut)

First Place Winner: Melissa Clark (Research Advisor: D. B. Bhattacharyya)

2nd Place Winner: Kyle Kissick (Research Advisor: Dr. D. B. Bhattacharyya)

3rd place Winner: Amy Holbrook (Research Advisor: Dr. Kim Anderson)

Bianca Hunter, mechanical engineering, was elected as SWE Student Regional Representative, 2001-2002, at the 2000 SWE Regional Conference held at Wright State University, November 10-12, 2000.

The **Society of Women Engineers** has instituted a new graduate student fellowship: the UK Margaret Ingels Society of Women Engineers Graduate Fellowship. This \$2,500 fellowship will be awarded for the first time in Fall 2001 to an entering female graduate student. Information, including the fellowship application, will be available soon on the College's and Graduate School's webpage.

Miscellaneous

Sue Scheff, Director of Women in Engineering, and nine members of the UK Society of Women Engineers attended the 2000 SWE Regional Conference at Wright State University, November 10-12, 2000.

Fall 2000 Co-op Experiences, Donna Hewett, Contributor

There are sixty engineering students missing from the classrooms this fall. They are working full-time for employers who provide engineering experience and participate in the students' educational process. Although each work session will be evaluated through several lengthy processes, we asked the students to email a short remark about their experiences this fall.

Many of them have traveled:

Dustin Elliott, an ME from Hebron, KY, reports, "While here at NASA Langley, I have been placed in charge of the construction of a Miura-Ori Solar Sail Model. Interesting things that I've done outside work include: seeing a shuttle launch, spending 2 days hiking along the Appalachian Trail, visiting the Outer Banks of N.C., going to a UNC football game, scuba diving, and taking an aerial tour of Hampton Roads in a Cessna 172." From **Josh Johnson**, a civil engineering student from Elizabethtown: "I have lived all semester out of a hotel in Lansing, Michigan. It has been a great opportunity for me to meet new people and see a different area of the country. My project is a Wal-Mart store and duties are quality control of the masonry, concrete and some of the steel. Basically I am assuring that the specs are being followed." **Wei-Yand Lin**, an EE from Owensboro, wrote to let us know that he is working on a project in Korea with Kimberly-Clark. "I am gaining a lot of experience in international projects and how to work with people when there is a language barrier." **Curtis Smith**, an ME from Glasgow is with the Pipeline division (Kentucky District) of Marathon Ashland says he has seen almost all of Kentucky and some of the rest of the country as well. An EE student from Kentucky was on a third work session with the United States Department of Defense and says his technical assignment included creating a multi-channel analog preconditioner box. However, his most exciting experience was participating in a trip where he officially represented the United States Government.

They have made valuable contributions:

CME, **Jason Berger**, from Hamilton, Ohio, says "Here at Mallinckrodt, I have designed and implemented a dual filling station that will allow product to be packaged during a four hour changeover, saving 3-4 hours of production every changeover." **Jennifer Howe**, CME from Irvine, KY, has been preparing the environmental permit for the Tefzel* plant in the DuPont Teflon* division at Washington Works in WV. **Matt Elliott**, a CS major from Lexington working for Transdigital, is developing the world's first online movie rental system. Lexington is the US test market for Cinevault Machines (like ATMs that rent movies). **Brent Lykins**, an ME from Rush, KY, says "I was given charge of a major project to revamp a product line (fire helmets) which involved a lot of mechanical design, public relations, and decisions made at my discretion. It will turn out to save Bullard approximately \$20g / year." "For me, this semester has been much more

involved here at Greenheck," says **Mark McQuilling**, an ME from Louisville. "For my first two months this term, I was the acting Shipping and Receiving Supervisor (BIG responsibility). One of our supervisors quit, and I filled in until they found a replacement. After that, I structured and consolidated a deal with Eco-Tech Environmental Services for a compactor unit. This unit will save Greenheck about \$14-15,000 each year." At Toyota, CME student **Staci Hart** is working on a report called the TAB Q-7 that tells the EPA and the Emergency Response Committee where the worst possible emergency could happen at at the Georgetown plant and how this emergency should be handled. As a first term co-op at Cinergy's Zimmer Station, **Derek Rahn** an EE, built a computer model/simulator of the boiler. The model facilitates "seeing" what goes on inside the boiler, rather than using intuition of what might happen. It will help understand the effects on the boiler if new instruments were installed.

Hats off to Bullard

In this time of tremendous competition for ME students, a relatively small company in Cynthiana has managed to attract six students! "I have had so many wonderful and rewarding experiences here!", says **John Klonga**, an ME from Lexington. "I was able to contribute and help Bullard, a safety company that outfits Hard Hats, Respirators and my personal favorite - Thermal Imagers. Nothing can take the place of hands on experience. To come up with a good idea based on theory, see it come full circle, and make the world a safer place is a wonderful feeling."

Events

The College of Engineering's annual Holiday Celebration will be held Friday, December 15 from 2-3 pm on the third floor of CRMS. Outstanding Staff Award winners will be announced and service anniversary recipients will be recognized.

Engineers Day Open House will take place Saturday, February 24 from 9 am to 1 pm. If you know of a pre-college student, teacher, counselor, etc. who might be interested in receiving a packet of information, please send their name and address to Dr. Donn Hancher, civil engineering. Volunteers will be needed to assist with EDay activities. Contact Dr. Hancher if interested in helping.