

Christian Brothers University

SCHOOL OF ENGINEERING



Chemical



Civil



Electrical



Mechanical



Graduate Engineering

Engineering Newsletters

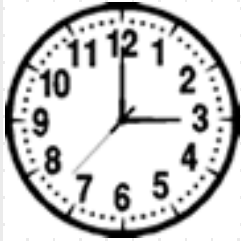
January/February 2004

HIGH SCHOOL COMPETITION- April 6th

The 2nd Annual High School Competition is set for April 6th. There are four competitions this year: Egg Drop Contest, Balsa Wood Bridge Construction, Human Reaction Time Competition, and CO2 Car Competition. They were designed for 10th, 11th, and 12th graders. You can download Competition Rules and Entry Form at: <http://www.cbu.edu/engineering/highschool.html>.



FE REVIEW SESSIONS



As in the past, CBU professors will be giving FE review sessions. This year's review schedule has been posted at: http://www.cbu.edu/engineering/EIT_review_SCH_2004.pdf

The cost for the review sessions is \$75 for current CBU undergraduate engineering students and \$200 for others. This cost will include a review textbook and twelve review sessions. You must sign up and pay for the review sessions by February 14, 2004. Please make all checks payable to Christian Brothers University. Contact Ms. Leslie Dunn at the Dean's Office or 321-3405 or ldunn@cbu.edu.

Increase your chance of passing the exam by attending these review sessions. They **REALLY** help!

HIGHLIGHTS OF NEW LAB EQUIPMENT

Through the grant from the Assisi Foundation of Memphis, the following two pieces of new equipment have been acquired:

- A new compression-testing machine recently arrived at our new Solid Mechanics Lab. The machine (CM-3000-DB) is designed for testing a variety of concrete specimens. It has a compression capacity range of 3,000 to 300,000 lbs., with a data acquisition digital load indicating readout system and test data storage and computer transfer capabilities. It came with the appropriate accessories to perform split tensile tests. There is also a separate 20,000 lbs. load frame, which when connected to the compression testing machine, can be used mainly to test 3" x 3" x 12" beams in flexure.



- A modulated differential calorimeter (MDSC) with mass flow control was recently installed in the Polymer/Packaging Lab. DSC has been used in polymer research as well as in quality control for more than 25 years. It is the most popular of the thermal analysis techniques and is used to measure the thermal, crystalline and chemical (reaction kinetics) properties of natural, man-made polymers and oils. MDSC is the latest version of DSC

that can measure properties, which need much higher precision than the latter. Q100 is a research grade MDSC with better than 0.2 microwatt sensitivity and operating temperature range of 180C to 725C. The patent is pending Tzero technology for enhanced resolution and baseline flatness. The unique DSC cell design ensures improved cooling control and better data precision. This instrument will be used to investigate the thermally derived properties of polymers used in biomedical as well as plastics industries and plastic films used in distribution, medical, food, and electronics packaging.



CALL FOR PARTICIPATION MAESC 2004

With the rapid technological changes in today's world, engineers and scientists are facing new and more difficult ethical challenges. Thus, the MAESC 2004 Conference will focus on the ethical challenges related to technological development. The theme of the MAESC 2004 conference is **Science and Engineering: Ethics, SEE Our Responsibilities.**

The conference will also cover many diverse areas, including but not limited to the following: biology, biochemistry, bioengineering, chemical engineering, manufacturing processes, mechanical behavior of materials, biological-inspired computing, commercialization of technology, electrical and computer engineering, wireless communications, transportation (distribution), economy, emerging technologies, simulation/modeling, education, innovation, and nanotechnology.

There will be three presentations in a 75-min technical session.

Abstract submission deadline is March 1, 2004. Please submit your



abstract via email to abstract@cbu.edu. Call for Participation brochure in PDF format can be downloaded at: <http://www.cbu.edu/engineering/maesc/CallforParticipation2004.pdf>.

NEW BIOTECH ADVISORY GROUP FORMED

A new Biotech Advisory Group is recently formed for the School of Engineering. The members are:

- Ronnie Britto of EnSafe
- Alfred Chung of Grace Medical
- Mike Demster of Memphis Regional Chamber
- Malinda Fitzgerald of CBU Biology Department
- Michael Nutt of Spinal Innovations
- Tayebah Pourmotabbed of University of Tennessee (Memphis)
- Paul Wisnewski of Medtronic Sofamor Danek

They will guide us into this new exciting and growing area. The group had its first meeting on campus on January 30th.

MECHANICAL TECHNICIAN NEEDED

The School of Engineering at CBU is seeking an experienced machinist/mechanical technician to staff the engineering development shop and manufacturing lab facilities. Duties include, but are not limited to, maintaining equipment; supervising student use of hand/machine tools and instrumentation; assisting setup and preparation of specimens/fixtures for lab projects; monitoring use of consumable items/materials; advising department chairs on procurement needs; and assisting in budget preparation. Send a copy of your resume, including at least three references, and a cover letter with salary requirements to: Christian Brothers University, Attn: Director, Human Resources Department, 650 East Parkway South, Memphis, TN 38104. Candidate selection will start March 1, 2004, and will continue until the position is filled. CBU is an equal opportunity employer.

STUDENT NEWS

Congratulations to the following students who were honored by their department as Featured Engineering Student:



- **Kyle Dorgan** 2004 Featured Chemical/Biochemical Engineering Student
- **Erik Weghorst** 2004 Featured Civil/Environmental Engineering Student
- **Tequilla Clayton** 2004 Featured Electrical/Computer Engineering Student
- **Anna & Sofia Rask** 2004 Featured Mechanical Engineering Students

In addition, **Erik Weghorst** was recognized as the 2004 CBU Featured

Engineering Student. He will be recognized at the Mid-week Banquet on February 26th. His profile will appear in the next issue.

ALUMNI NEWS

Thanks to the following CEE alumni who served as mentors for our CEE freshmen last fall:

- **Roy Lamica** ('03) of Allen & Hoshall
- **Becky Bailey** ('02) of City of Bartlett
- **Elaine Newbaker-London** ('99) of U.S. Army Corps of Engineers
- **Jonathan Pennington** ('99) of U.S. Army Corps of Engineers
- **Jason Allman** ('98) of US Army Corps of Engineers
- **Heather Smith** ('03) of Ellers, Oakley, Chester & Rike
- **Brad Taylor** ('01) of EnSafe, Inc.

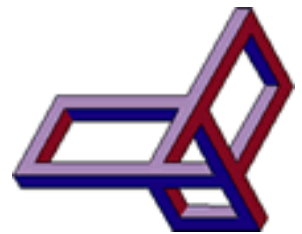
Congratulations to the following CE'99 alumni for becoming newly registered professional engineers:

- **Gerry Patrikios** of Burr & Cole Consulting Engineers, Inc.
- **Marshal Davis** of McCaskel Engineering
- **Eric Criswell** of Allen & Hoshall
- **Thomas Pownall** of Thomas Engineering Company
- **Larkin Gieringer** of Pickering, Inc.

Larkin Gieringer (CE'99) recently joined Pickering, Inc., after working with White-Daters and Associates in Little Rock, Arkansas. She is working mostly in commercial land development. Her responsibilities include coordinating and preparing construction plans as well as proposals and contracts.

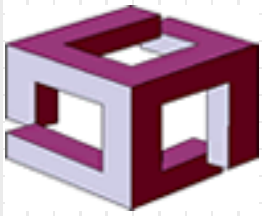
FACULTY NEWS

Dr. Asit Ray (ChE) coauthored a paper entitled "Microstructural Effects of Annealing and Sterilization on Ultra High Molecular Weight Polyethylene." The paper was recently presented at the Fall Meeting of the Tennessee Biomedical Engineering Conference in Nashville, TN.



Mr. Fred Sock (CEE) and **Dr. Asit Ray** (ChE) spoke to a special group of students preparing for engineering career on Careers Day at East High School on January 27th.

Mr. John Ventura (ECE) and his son Matthew will present a paper entitled "Animated Agents: Motivational Consequences" at the IEEE SoutheastCon 2004 conference in Greensboro, North Carolina, on March 26-28, 2004.



Congratulations to the following faculty members who were recognized by their peers as part of Engineers Week Celebration:

- **Dr. Asit Ray** - 2004 Featured ChE Faculty
- **Dr. Louie Lin** - 2004 Featured CE Faculty
- **Dr. Fred Terry** - 2004 Featured ECE Faculty
- **Dr. Joe Londino** - 2004 Featured ME Faculty
- **Dr. Juan Olabe** - 2004 Featured MEM Faculty

In addition, **Dr. Asit Ray** was selected as the 2004 CBU Featured Engineer. He will be recognized by the Memphis Joint Engineers Council at the Kick-off Luncheon on February 23rd. His profile will appear in the next issue.

In 2003, CBU engineering faculty published the following papers/articles:

- X. Basogain, M. Olabe, K. Espinosa, and **J. C. Olabe**, "Cursos basados en Contenidos Multimedia con formato Video de Alta Calidad," Proceedings of the REDJRIS 2003 Conference, November 2003.
- **B. B. Beard**, "Extending Monte Carlo Samples," Nuclear Physics B, Elsevier, Vol. 119, pp.1012-1014, 2003.
- **Bernard B. Beard**, Alessandro Cuccoli, Ruggero Vaia, and Paola Verrucchi, "Quantum two-dimensional Heisenberg antiferromagnet: Bridging the gap between field-theoretical and semiclassical approaches," Physical Review B 68, 104406, 2003.
- Daniel Courivaud and **Juan Carlos Olabe**, "Integration D'Un Laboratoire Virtuel Rf Sous LabVIEW Dans Une Plateforme E-Learning," Proceedings of the FUTUR-VIEW 2003 Conference, France, June 2003.
- Daniel Couivaud and **Juan Carlos Olabe**, "A Web-based Radiofrequency Virtual Laboratory Using On-line Tutorials and Live Experiments," Proceedings of the EANN 2003 Conference, Spain, September 2003.
- **Robert L. Drake**, "Conditions for Self-Sustained Oscillations in Feedback Control of AC Motor Speed by Power Electronic Controllers," Proceedings of the 35th Southeastern Symposium on System Theory, IEEE, pp. 487-490, March 2003.
- **Robert Drake**, "Do 'Checks and Balances' Contribute to Cycles in the Economy?" Proceedings of the MAESC 2003 Conference, May 2003. (Abstract)
- **Neal F. Jackson**, "Book Reviews," Engineering Management Journal, Vol. 15, No. 1, p. 34, March 2003.

- **Neal F. Jackson** and Susan Magnum-Jackson, "Improve Your Strengths and Manage Your Weaknesses: Using the StrengthsFinder Profile in Team Development," Proceedings of the 2003 American Society for Engineering Education Annual Conference and Exposition, June 2003.
- Lisa Lavie, David Burns, and **John Ventura**, "Electrical Safety for an Offshore Power System," Proceedings of the MAESC 2003 Conference, May 2003.
- **L. Yu Lin**, Roger H. Smith, and Robert L. Hunt, "Application of UNET and HEC-RAS Computer Models Birds Point-New Madrid Floodway Operation Plan," Proceedings of the Thirteenth Annual Tennessee Water Resources Symposium, April 2003.
- **K. Madhavan** and **Siripong Malasri**, "Professional Registration of Engineering Faculty," Journal of Professional Issues in Engineering Education and Practice, ASCE, Vol. 129, No. 3, pp. 122-124, July 2003.
- **K. Madhavan**, "Advice to Structural and Project Engineers from a Geotechnical Engineer," Proceedings of the MAESC 2003 Conference, May 2003.
- **K. Madhavan** and **R. Eugene McGinnis**, "Integrating Case Studies and Ethics in Civil and Environmental Engineering," Proceedings of the MAESC 2003 Conference, May 2003.
- Kriangsiri Malasri and **Siripong Malasri**, "Point Grouping using a Genetic Algorithm," Proceedings of the MAESC 2003 Conference, May 2003.
- **R. Eugene McGinnis** and **Denise Theobald Roberts**, "Attracting Female Students to Engineering and Science Programs through a Partnership with Girl Scouts of America," Proceedings of the 2003 American Society for Engineering Education Annual Conference and Exposition, June 2003.
- Sanjay Mishra, Gladius Lewis Ann Viano, Neil Fore, and **Asit Ray**, "Influence of Lamella Features of UHMWPE on its Physical and Uniaxial Tensile Properties Effect of Sterilization Method," Proceedings of the MAESC 2003 Conference, May 2003. (Abstract)
- Nyaniki Quarmyne, Joseph Simpson, and **John Ventura**, "Network Design to Expand Capacity of Existing Telecommunications Infrastructure," Proceedings of the MAESC 2003 Conference, May 2003.
- **Asit Ray**, **Yongquan Zhou**, and **Siripong Malasri**, "Teaching Packaging Engineering at Christian Brothers University," Proceedings of the 2003 American Society for Engineering Education Annual Conference and Exposition, June 2003.
- Richard D. Redfearn, Carl W. Carlson, Ann M. Viano, Karyn E. Spence, and **Asit K. Ray**, "Pyrolysis GC-MS and Transmission Electron Microscopy in the Characterization of Crosslinked UHMWPE Microstructure," Polymer Preprints, Vol. 44.1, pp.158-

- 159, 2003.
- **Yeu-Sheng Paul Shiue**, "Design Through Manufacturing Approach for Kinematics Class," Proceedings of the 2003 American Society for Engineering Education Annual Conference and Exposition, June 2003.
 - **John Ventura**, "Curriculum Development for Lecture-Based Course Utilizing Web-based Technology to Supplement Instructional Delivery," Proceedings of the IEEE SoutheastCon 2003, April 2003.
 - **John Ventura**, "Accreditation Criteria for Engineering Programs-Implementing EC-2000 Criteria," Proceedings of the 2003 American Society for Engineering Education Annual Conference and Exposition, June 2003.
 - Anita Vickery, Dennis Wathen, and **John Ventura**, "Control System for Ruberg Mixers," Proceedings of the MAESC 2003 Conference, May 2003.
 - **Eric Welch**, "Undergraduate Forensic Engineering," Proceedings of the MAESC 2003 Conference, May 2003. (Abstract)