

Christian Brothers University

SCHOOL OF ENGINEERING



Chemical



Civil



Electrical



Mechanical



Graduate Engineering

Engineering Newsletters

April 2004

HIGH SCHOOL COMPETITION WINNERS

Congratulations to the following high school students who won the competitions at the 2nd Annual High School Competition at CBU on April 6th:

Egg Drop Contest



- 1st Place – **Chao Lin** of Craigmont
- 2nd Place – **Trevor Williams** of Ridgeway
- 3rd Place – **Huonglan Nguyen** of Memphis Catholic

Human Reaction Time Competition

- 1st Place – **Jonathan Garver** of Ridgeway
- 2nd Place – **Britton Wakefield** of Overton
- 3rd Place – **Tokunbo Walker** of Overton

CO2 Car Competition

- 1st Place – **Ivan Ravlija** of Ridgeway
- 2nd Place – **Whitney Connell** of Houston
- 3rd Place - None

Balsa Wood Bridge Construction

- 1st Place – **Daniel Hochstein** of Houston
- 2nd Place – **Casey Ratliff** of Houston
- 3rd Place – **Kyle Moats** of Elmore Park



The event attracted 64 students from 13 area schools. Winners received \$200, \$150, and \$100 for 1st, 2nd, and 3rd Place awards, respectively. It was a fun-filled and exciting afternoon. Thanks to the following award donors: Medtronic Foundation, Brother Louis Althaus, Burr & Cole Consulting Engineers, and Mr. & Mrs. James I. Hosey. Also thanks to Barnhart Crane & Rigging Co. for providing the crane for the Egg Drop Contest and to Wal-Mart for providing plenty of bottled drinking water.

This event could not have been possible without the following volunteers:

CBU Students: Aimen Abdi, Lee Allen, Amanda Alsbrook, Joseph Atem, Casper Briggs, Daryll Causey, Alex Cleary, Joe Clements, Brian Emerick, Chris Foster, Troy Goode, Jeff Higgins, Wes Hoover, Darrie Jenkins, Jr., Deepak Jose, Jeffrey King, Robert Kist, Ben Knoernschild, Bradley Loeffel, Katherine Lyons, Muna Mahdi, J.T. Malasri, Nicholas Marasa, Haison Nguyen, Leslie O'Neal, Taylor Percy, Michelle Perry, Chris Popwell, Chris Ramberg, Ben Reves, Zach Robbins, Derrick Rivers, Jared Scott, Matthew Shaver, Khyati Shastri, Lee Schumann, Elin Thorsteinsdottir, Robert Turnage, Sam Vitale, John Wall, Brittany Williams, Amber Wright, Kevin Wright, Kevin Yee, and Charlene Yeung.

Staff: Cory Dugan, Leslie Dunn, Tracey Dysart, Eric Ellis, Glenda Emerick, John

Kerr, Danielle Larabee, Shelly Luttrell, Kristy Phillips, Melissa Potosky, Henry Rhodes, and Mary Margaret Seward.

Engineering Faculty: Bernard Beard, Bob Drake, Louie Lin, Joe Londino, K. Madhavan, Pong Malasri, Gene McGinnis, Ali Pourhashemi, Randel Price, Asit Ray, Paul Shiue, Fred Sock, Fred Terry, John Ventura, and Eric Welch.

Engineers: Eric Barnhart, Juanita Ford, Nathan Luce, Randy Troutman, and Yongquan Zhou.

Other: Student Life Office, Security Office, Aramark

**MAESC 2004
CONFERENCE**

MAESC



MAESC 2004 Conference is just around the corner on May 12th on the CBU campus. "Science & Engineering: Ethics -- SEE Our Responsibilities" is the conference theme. A full track is devoted to ethics with three 75-minute ethics seminars and a technical session on the subject. Three other tracks plus a poster session cover a variety of engineering fields, including biotech, civil engineering, education, electrical engineering, manufacturing, nanotechnology, packaging engineering, and thermal science. Thanks to Buckeye Technologies and Smith & Nephew, Inc., Orthopaedics, for their financial support as corporate sponsors of the conference.

Take advantage of the early registration fee of \$150/person by registering by April 28th. For a registration form and program details, please check the conference web site at: <http://www.cbu.edu/engineering/maesc>. Direct any questions regarding the conference to Dr. Siripong Malasri, Dean of Engineering and Conference Co-Chair, at pong@cbu.edu or (901) 321-3419.

Note: This is an excellent way to get PDH credits for professional engineer registration!

HIGHLIGHTS OF NEW LAB EQUIPMENT

Steel Sculpture Dedication

Students/Alumni/Faculty/Staff: You are invited to the dedication of the Steel Sculpture on May 11th at 3 p.m. The sculpture was donated to CBU by Providential Fabricator, Inc. It is located in the open area between Nolan Engineering Center and Science Center and will be used as a teaching aid on connection design in steel design courses. Special thanks to Mr. Mike Watermeier, a member of the CBU Engineering Advisory Board, for his help in getting the sculpture donated.



Fermentor: A new fermentor is now up and running in the Biochemical/ Environmental Engineering Lab. BioF10-110, manufactured by New Brunswick Scientific Company, is a fully automated state of the art benchtop fermentor with advanced features. It is capable of producing a product using the mass culture of microorganism of the mammalian cells, bacteria or yeast. In addition to the internal controller, an external bioprocess software package is also used to supervise the process. The auxiliary equipment includes an autoclave, a double-chamber incubator, a high-speed centrifuge, and common laboratory glassware. The fermentor will be used in a new three-credit course in biochemical engineering, which is planned for spring 2005.



Fermentor & Accessories

The Department of Chemical and Biochemical Engineering at the Christian Brothers University developed a paradigm in biochemical engineering in 2001. Biochemical engineers attempt to explain the complexity of biological systems using the fundamentals and problem-solving skills learned from their chemical engineering training. This is the only department within the 100 miles surrounding the Memphis area that offers this program. In addition to chemical engineering courses, the biochemical paradigm includes courses from biology and chemistry. This is a very rewarding engineering field for individuals with strong interests in both science and engineering.

**2004
ENGINEERS
WEEK**

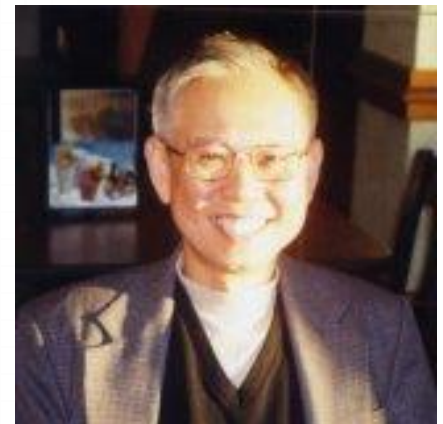
2004 Engineers Week Recognitions (Continued from March 2004 issue)

Tom Stoll, P.E. (MEM'02), was recognized as Featured Engineer by the Memphis Joint Engineers Council (MJEC) and the Mid-South Section of the Illuminating Engineering Society of North America (IESNA) at the 2004 Kickoff Luncheon on February 23rd. Tom received his B.S., M.S. in electrical engineering from Ohio State University and University of Memphis, respectively. Later he also received his CBU's Master of Engineering Management. Tom was Electrical Engineer II at Kimberly-Clark Corporation between 1990-1993. He joined The Bodine Company in 1994 as Research and Design Engineer. Currently, he is Product Engineering Manager at the Bodine Company, in which he manages engineering laboratory and technical support department of nine engineers and technicians. The department designs/develops new products, improves products, expands market share, and promotes sales for custom products line. Congratulations!



Also congratulations to **Tim Herndon**, P.E. (CE'80) for being named Featured Engineer by the Memphis Joint Engineers Council and the Memphis Chapter of the Tennessee Society of Professional Engineers (TSPE) at the Engineers Week Kickoff Luncheon on February 23rd. Tim served as the president of TSPE (Memphis) in 2002-2003. He has recently joined SR Consulting, LLC, in Memphis, as its Senior Design Engineer. He is responsible for all phases of design of various public work projects. His past experience includes various positions with S&W Construction Company of Utah (Salt Lake City, Utah), Weyer-Livsey Constructors (Salt Lake City, Utah), American Stores Properties, Inc. (Salt Lake City, Utah), Dickinson & Bennett, Inc. (Memphis, Tennessee), Allen & Hoshall, Inc. (Memphis, Tennessee — 8 years), and most recently with the City of Memphis (9 years). Tim is a registered professional engineer in Alabama, Georgia, Kentucky, Missouri, North Carolina, Tennessee, and Virginia.

Dr. Siripong Malasri (Dean) was named Outstanding Engineer of the Year by the Memphis Chapter of Tennessee Society of Professional Engineers (TSPE) at the 2004 Engineers Week Banquet on February 26th. Dr. Malasri, a registered professional engineer in Tennessee, received his doctoral degree in civil engineering from Texas A&M University in 1982. He joined CBU in 1988, was chair of the Civil & Environmental Engineering Department from 1991-1999, and has been dean of engineering since June 1999. Under his leadership, CBU has hosted the Memphis Area Engineering & Sciences Conference since 1999. He served on the editorial boards of the International Journal of Engineering Education and Journal of Professional Issues in Engineering Education and Practice. He has been active with the Memphis Chapter of TSPE and was its president in 1998-1999. His past recognitions include Distinguished



Lasallian Educator (CBU), Centennial Certificate (ASEE), Featured Engineer (CBU, TSPE – Memphis Chapter), and President's Citation (TSPE – State Chapter).

SUMMER PROGRAMS FOR HIGH SCHOOL STUDENTS

Packaging Engineering Summer Program for High School Students:

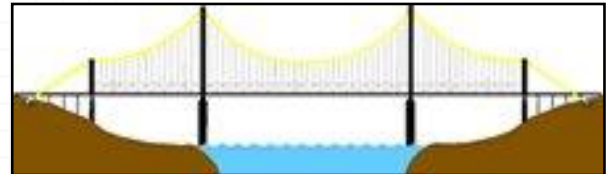


The summer program has been scheduled on June 14-18, 2004. If you are currently a high school student, you are eligible to apply for this program. Students will be introduced to the various aspects of packaging engineering, including: historical development, materials, distribution systems, design/testing/evaluation methods, and economic/environmental impacts. Field trips to local packaging operations will be part of

the program. Visit the CBU Engineering web site at <http://www.cbu.edu/engineering/> for more information and application form. The application deadline has been extended from April 15 to April 30 due to a few available seats. The program is made possible by a grant from International Paper Foundation. Please direct any questions on the program to Dr. Asit Ray at aray@cbu.edu / (901) 321-3418 or Dr. Siripong Malasri at pong@cbu.edu / (901) 321-3419.

Civil Engineering Summer Program for Female High School Students:

This program has been set for June 7-18, 2004. If you are currently a female high school student (Grade 10-12), a U. S. citizen or permanent resident, and have a strong academic performance in



engineering, math, and science, you are eligible to apply for this program. The activities of this two-week summer program include hands-on activities in structural, transportation, geotechnical, water resources, and environmental engineering. The program also includes talks by professional engineers/scientists and field trips. Visit the CBU Engineering web site at <http://www.cbu.edu/engineering/> for more information and application form. The application deadline is April 30th. This program is made possible by a grant from the American Society of Civil Engineers. Please direct any questions on the program to Dr. Louie Lin at [llin@cbu.edu](mailto:lilin@cbu.edu) / (901) 321-3403 or Dr. Siripong Malasri at pong@cbu.edu / (901) 321-3419.

STUDENT NEWS

The chemical/biochemical engineering seniors presented their senior design projects listed below on April 3, 2004:

- “Preliminary Design for Making PMMA/MMA Syrup by Dissolution or Polymerization” by **Kyle Thomas Dorgan** (Sponsored by Lucite International, Inc.)
- “LED Kayak Paddle” by **Christopher Foster** (Sponsored by The Bodine Company)
- “Design and Cost Analysis of an Industrial CSTR Based on Laboratory Derived Batch Reactor Kinetics Data” by **Katherine Lannan Lyons** (Sponsored by Christian Brothers University)
- “East Crude Unit Desalter Upgrade” by **Zachary Austin Robbins** (Sponsored by Premcor Refining)
- “Operation and Efficiency Analysis of the Raisin Bran Production Line” by **Nathan Matthew Daulton** (Sponsored by Kellogg Company)

ALUMNI NEWS

Thanks to the following alumni for helping with engineering courses this semester:

- **Marolyn Howe**, P.E. (ChE '81) of Mueller Industries, Inc., talked to ChE 492 class on the topic “Air Pollution Control of an Aluminum Extrusion and Window Plant.”
- **Carol Tsagarakis**, P.E. (ChE '84) of Pickering Environmental Consultants, Inc., talked to ChE 492 on the topic “Clean Air Act.” She also arranged a field trip to the Quebecor World Printing Plant for the class. The students were able to see a VOC recovery system in operation.
- **Michael Belk** (MEM '03) of International Paper talked to CE 112 on the topic “Careers in Information Technology.”

FACULTY/ STAFF NEWS

As part of outreaching to grade school students, thanks to the following CBU engineering faculty/staff members for hosting afternoon workshops and visiting area high schools:

- Afternoon Workshop for OPTIONS Students on February 3, 2004: **Dr. Bob Drake** (ECE), **Dr. Louie Lin** (CEE), **Mr. Gene McGinnis** (CEE), **Dr. Ali Pourhashemi** (ChE), **Dr. Randel Price** (ChE), **Dr. Asit Ray** (ChE), **Mr. Henry Rhodes** (Staff), **Dr. Paul Shiue** (ME), and **Mr. Fred Sock** (CEE)
- Afternoon Workshop for OPTIONS Students on February 5, 2004: **Dr. Ray Brown** (ME), **Dr. Bob Drake** (ECE), **Dr. Louie Lin** (CEE), **Mr. Gene McGinnis** (CEE), **Dr. Ali Pourhashemi** (ChE), **Dr. Randel Price** (ChE), **Dr. Asit Ray** (ChE), **Mr. Henry Rhodes** (Staff), and **Mr. Fred Sock** (CEE)
- Ridgeway High School Visit on February 10, 2004: **Dr. Louie Lin** (CEE) and **Dr. Randel Price** (ChE)

- Houston High School Visit on February 19, 2004: **Dr. Louie Lin** (CEE), **Dr. Ali Pourhashemi** (ChE), **Dr. Randel Price** (ChE), and **Mr. Fred Sock** (CEE)
- Memphis Catholic High School Visit on February 24, 2004: **Dr. Bob Drake** (ECE), **Dr. Louie Lin** (CEE), **Mr. Gene McGinnis** (CEE), and **Dr. Randel Price** (ChE)
- Christian Brothers High School Visit on March 4, 2004: **Dr. Bob Drake** (ECE), **Dr. Louie Lin** (CEE), **Dr. Randel Price** (ChE), and **Dr. Asit Ray** (ChE)

Dr. Bob Drake, P.E. (ECE) presented a paper entitled “Use of Power Electronic Speed Controllers in Academic Programs” at NSF-Faculty Workshop on Teaching of Courses in Power Electronics and Electric Drives. The workshop was held in Las Vegas, Nevada, on February 20-21, 2004. His paper was published in the Proceedings of the workshop.

Dr. Louie Lin, P.E. (CEE) presented a paper entitled “Hydrologic Analysis Using GIS and HEC-1 Model” at the 14th Annual Tennessee Water Resources Symposium. The symposium was held in Burns, Tennessee, on March 21 – April 2, 2004. The paper, coauthored by Don Davenport of the U.S. Army Corps of Engineers, was published in the symposium proceedings.

