

ENGINEERING NEWS

Department of Engineering, Calvin College Spring 2004

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Engineering Students Visit Cedar Point

by Maggie Leonard, ASCE Student Chapter president

On October 17th, the Engineering department sent 18 students to experience the tallest, fastest, steepest roller coaster on the planet. The ASCE and ASME clubs organized a behind the scenes tour of Top Thrill Dragster, the worlds first Strata-Coaster, which debuted this past summer at Cedar Point in Sandusky Ohio.

Monty Jasper, the maintenance vice president for the park, was the tour guide. He started the tour with two educational videos which showed the ride being built and then test runs from all angles of the ride. Some of the thrills of the ride are that it is 420 feet tall, goes straight up, crests a hill and then straight down, and accelerates the rider from 0 to 120 mph in 4 seconds. The biggest thrill for some was the possibility of not cresting that hill, and accelerating down 420 feet of track toward the starting gate, backwards. Jasper explained that some of the finer details of the ride made this a regular, although not frequent, event.

Jasper then led the way to the mechanical room of the ride. He walked the students through the innovative design that makes it possible to propel all eight tons of each loaded train, once every 60 seconds. Jasper answered



420 feet is a long way up!

questions concerning the stewardship of the land. He shared Cedar Point's devotion to safety on all of their attractions. Most memorable, he taught the value of duct tape.



Monty Jasper (left) describes the control features of the Top Thrill Dragster.



Isaac Anton and Laura Rip watch with anticipation, the test runs.

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2003 Senior Design Projects

The 2003 Engineering Banquet was held on May 10 at the new Prince Conference Center on the east side of Calvin's campus. Earlier, the Engineering Building was the center of activities for the prototype displays, but the dinner and presentations after dinner all took place in the beautiful new facilities of the Prince Conference Center. The flow of the evening was much more enjoyable for everyone that attended, compared to previous years. The entire evening was the culmination of a year of very hard work by the senior engineering students.

There were sixteen senior design teams that worked under the direction of Professors Leonard De Rooy, Ned Nielsen, Steve VanderLeest and Wayne Wentzheimer. The teams developed a project from conception to design and prototype.

Team #1 Transmission Impossible (mechanical) Joel Buurma, Kevin Katerberg, Joe Klynstra, Tor Larsen

This team of four mechanical engineering students worked to build a light-weight passenger vehicle. Their design was unlike a five-speed car because it was designed to use a button to shift into gear. As long as there was enough torque, the car actually accelerated faster than other transmissions. The car they built was designed to go up to 25mph but the transmission is being experimented on regular cars.

Team #2 Go-Go-Gadget-Sun-Shield (mechanical) Art Dykhuis, Mark Gordon, Betsy Pyle, Jeff Rozema, Lisa Velzen

This team worked with Johnson Controls to design an alternative sunshield for cars. They designed an automatic sunshield that had a minimal "visual footprint" in the car when stowed. When deployed it would effectively protect the car's interior from the sun. The final design utilized a telescoping rod that pushes the shield up from the dash. A torsion spring-loaded roller is pre-loaded to produce a semi-constant force. A cover door mechanism provided a unique integration with the dash and interior of the vehicle.

Team #3 Sub-Standards (mechanical and electrical) Dave DeVries, Les Kuipers, Brian Timmer, Josh Van Schepen

This team built a fully functional, small-scale submarine, controlled by a tethered remote. It was designed to be used for underwater observation via two cameras. The sub used a 12 volt battery for its power thrusters and ballast pump. The outer shell was fabricated using a clear plastic sheet that was thermoformed to acquire the desired shape. They created their own model by cutting design patterns from wood sheets, stacking them and sanding the layers into one component. The cameras on this submarine are used for a variety of different applications, such as observation or recover of underwater objects.

Team #4 SOLO (mechanical) Sam Gustafson, Jason Hartley, Josh Lutter, Gabe Tanner, Tomiwa Ojutalayo

Team four constructed a battery-powered, three wheel scooter. The scooter was designed for a short urban commute and is environmentally friendly. The unit is light weight and compact for easy storage. Included in the project was the development and testing of a unique wheel drive mechanism. Safety features were another concern in the design process.

Team #5 Just Add Sunlight (electrical and mechanical) Matt Dykhouse, Darren De Ronde, Ryan Johnson, Jamie Overweg

This group of electrical and mechanical engineering students designed and built a solar energy system that will educate future students and the public on the attributes of solar energy. "This project is supposed to get the ball rolling on alternative energy studies at Calvin College", said Ryan Johnson.

The mechanical team planned and designed the moving parts for the solar panels, while electrical students focused on the system side, ensuring that ample power could be delivered. Highlights of the project include providing the panels with the ability to track the sun. The power output can operate a simulated office environment, such as a computer, printer and lamps for several days with little to no sunlight.

~ Continued on page 3

Art Dykhuis demonstrates the Go-Go-Gadget Sun Shield.



Team #5: Just Add Sunlight.



Team # 6 Bits of Automation (mechanical and electrical) *Curtis Diller, Keith McClymonds, Dave Smit*

This team designed a system to automate a drilling process for a local company. With a jump-start on this project, by means of a summer internship, they received an S-110R Faunuc robot from the company to drill holes in 'back panels', a.k.a. sheets of metal, on which the control systems hardware is mounted. They mounted the robot on a secure stand, housed it a secure cage for safety concerns and put it to work drilling holes in the correct places. An arm was added that did the actual drilling.

Team #7—Smart Radio (electrical) *Brian Jewell, Matt Knoll, Sam Okoh*

This team worked to improve the use of radio, hence the name 'Smart Radio'. Their goal was to create a system that can store one or multiple radio channels for a limited amount of time (up to two hours in this case) and allow a user to play stations back on demand. The 'Smart Radio' was designed much like a CD player with play, pause, channel select, scan options, etc. This concept is similar to TIVO, the device on a VCR that allows the person to record one channel on TV while watching another. This team worked closely with a mentor from Johnson Controls, Inc. of Holland.

Team #8 SNIC (electrical)

Jeremy Andrus, Jeremy Heersink, Justin Jansen, Neil Kuyvenhoven

Nobody likes intruders and your computer is no different. Team SNIC designed a Network Interface Card (NIC) with an integrated firewall that would be easier o keep intruders out. They did this by implementing an embedded system on a PCI card inside the computer. The PCI card serves as a mini-computer built for one purpose, to keep out intruders. This team had a desire to make people more aware of potential dangers and easier to begin protecting themselves against malicious people.

Team #9 (and 10) Five for Foaming (chemical) *Adam Bonner, Amanda DeVries, Suzanne Jung, Philip Schonewill, Dirk Van Essendelft*

These five students designed a chemical plant, that would produce about 275

million lbs. of toluene diisocyanate (TDI) a year, which is about 10% of the world's demand of the product. Primary uses of TDI are as foam used in furniture, car seats, insulation and life-size Disney characters. The project required a lot of research and review. The project was a review of "pretty much every class we have ever taken," said Jung.

Team #11 SPU1 (civil) *Tamani Cervantes, Peter Klooster, Matt Wiersma*

This team had a project that focused on the I-196 interchange at Fuller Avenue in downtown Grand Rapids. Using computer software and their compiled research they designed a better, more efficient interchange based on a relatively new trend in traffic design called a Single Point Urban Interchange (SPUI). They wanted a design that would have a minimal impact on the area residents and would adequately serve the transportation needs of the community for years to come. For now the project remains a proposal and it would actually take tens of millions of dollars to build a highway interchange.

Team #12 Weill'd Engineers (civil) *Brendan Brink-Halloran, Josh Manion, Bob Nelesen, Jeff Triezenberg*

This group of senior engineering students focused on the structural aspect of civil engineering. They worked to design an expansion to the existing lobby of the Stefanie H. Weill Theater in Sheboygan, WI Bob Nelesen is from Sheboygan and was able to find this project from some contacts back home. Initially the team wanted to start from scratch but keeping a lot of the historic wood and brick walls is what the client wanted more than cost savings. The goal of the project was to create a new interior while preserving the historic exterior. Upon completion, the team presented their project to the theater foundation for review.

Team #13 Positive Reinforcement (civil) *Eric Klompmaker, Steve Oosting, Adam Peterson, Joe VanDerPuy*

This team began with a focus on something with humanitarian as well as academic value. They decided to develop "ferro-cement" panels for third world housing. They worked with

Habitat for Humanity for housing projects being developed in Haiti. The Ferrocement panels are thin concrete slabs (about 2" thick) reinforced with many layers of materials like chicken wire. The panels they constructed were designed for on site fabrication and construction. This team also researched alternatives like bamboo in case the

~ Continued on page 4

**Senior Design Banquet
Reservation Form**

You are invited to attend the 20th Annual Senior Design Banquet on Saturday, May 8, 2004. Activities begin at 4:30 in the Engineering Building. You will be able to view the displays of each team. This is followed by dinner in the Prince Conference Center at 6:00. After dinner there will be presentations of all the teams in the Prince Conference Center and the DeVos Communications Center. Reservations are required for the dinner and are **due by April 16**. If you have any questions, please call Michelle or Robin at (616) 526-6500 or e-mail Michelle at mkrul@calvin.edu.

Checks payable to Calvin College

Total number attending: _____

@ \$20 per person: _____

Names (please print)

Return to:

Michelle Krul or Robin Zylstra
Engineering Dept.
Calvin College
1712 Knollcrest Circle SE
Grand Rapids, MI 49546-4403

2003 Senior Design Projects ~ Continued from page 3

wire was not available in the area. The finished panels were 2' X 7' and were bug proof, fire proof and hurricane proof, obvious plusses for any house.

Team #14 A Sparkling Proposal (civil) Susan Bosma, Ross Haveman, Paul Ryckbost

These future civil engineers focused on the Seminary Pond, a long time focal point on Calvin's campus. This group did an environmental assessment of the pond to determine why the water is so brown and algae-filled. The pond results from rainwater flowing from around campus and finding its way to the pond. The team learned that the storm sewer is supposed to stop and let stuff settle before going to the pond but it does not. The clay from the storm sewers does not get removed and it mucks up the pond. The high levels of fertilizers and phosphorous used on campus also contribute greatly to the growth of algal sprout. Solutions included redesigning the upstream inflow system to the storm sewers and adding more aquatic plant life that will consume fertilizers to lower the algae in the pond.

Team #15—Lafia Bature (civil) David De Groot, Nathan Eastway, Dan Meyering, Ben Souza, Nate Ver Heul

This team had the opportunity to design a women's hospital in Nigeria. They traveled to Nigeria in October of 2002 to scope the area, get preliminary

surveys and estimates to figure out what would need to be designed. They worked with the Worldwide Fund for Mothers Injured in Childbirth and Engineering Ministries International (EMI) to provide a design. They provided a structural design for a women's hospital complex that included a 20,000 sq. ft. hospital building, staff and patient housing and water distribution and wastewater management systems to service the complex. This team put in a combined effort of over 2,000 hours to make a design they were confident would work.

Team #16—Over the Weir and Through the Woods (civil) Stephen Schuh, Josh Slattery, Aaron Snyder, Travis Terpstra

This team got a referral for this project from the Kent County Drain Commission. Residents of Fisk and Reeds Lake complained of flooding following rainstorms. The team's task was to provide accurate watershed and outlet analysis for the Commission and to propose a solution. They examined the levels and outlets of the lakes to determine the best way to eliminate the flooding problems. They designed a system that slowed the water before it got to the lakes.

Team #17—Biomolecular NMR Facility (civil) Carl Otte

Carl's object was to provide MSU with a design of a building capable of hous-

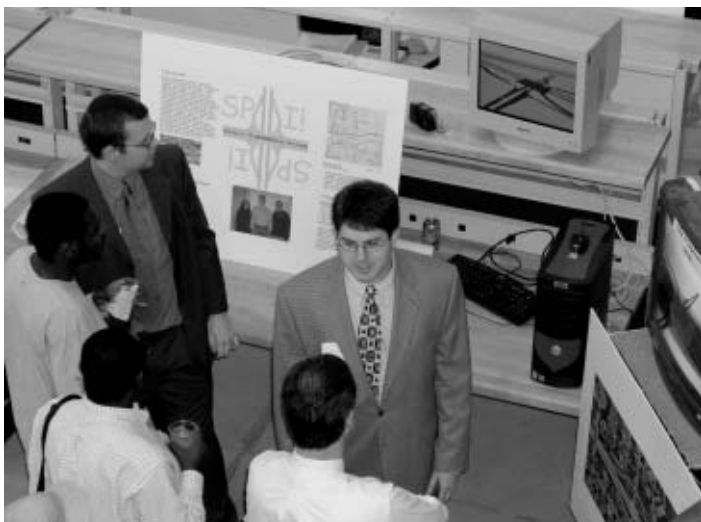
ing a 900 MHZ NMR instrument and possible future NMR instruments. This NMR instrument contains a super conductive magnet and is used to analyze compounds. Precautions were taken by the manufacturer of the equipment to prevent any magnetic materials within certain magnetic influence zones around the equipment. Along with the instrument room there will be utility rooms, offices and a computer room for the researchers.

Senior Design 2003-2004

Our program continues to grow with 74 seniors on 19 project teams this year. The projects range from designing a process to recycle waste water to high quality drinking water for arid areas of the world, to the design of a photovoltaic unit to prove power directly from the sun for a new building on campus, to noise concealing headphones, to a plant design to produce hydrogen as a power source for automotive fuel cells plus 15 other interesting projects. For all projects our students work from project conception, through a feasibility study and then to the final design with construction of prototypes in many cases. All the teams are currently working hard to have their projects completed by the May 8 open house and senior banquet.

Check out the engineering department events page at <http://enr.calvin.edu/Events> for more information on this year's teams.

Matt Wiersma explains the SPUI project.



The class of 2003.



How Do the Students Best Learn the Momentum Equation?

It is arguably the most abstract concept in the fluids section of the Introduction to Thermal-Fluid Sciences (ENGR 319) course. One classic homework problem asks the students to calculate the magnitude and direction of the force required to hold a fire hose in place when fighting a fire. The answer is that it takes, depending on diameter, 2 people to hold the hose in place and that you have to push forward on the hose. But, to the students this can be very abstract. It is common to assume that firefighters pull back rather than push forward on the hose. The equations tell the correct story, but the students tend to not believe it.



This Fall, the ENGR 319 students had an opportunity to find out for themselves! On Wed 22 October 2003, the Grand Rapids Fire Department brought Engine #6 to the Prince Conference

Center parking lot, and the students felt the force. The 2.5-in. hose would have sent the students on their backsides except for the support of the firefighters who were there for the demonstration.

The students enjoyed the break from the normal classroom routine, and they learned a little bit about fluids at the same time. The Calvin Engineering Department thanks the Grand Rapids Fire Department, especially Craig VanderWall, Mike Lundeen, and Dan Davis, for their participation in this learning opportunity for the students. More pictures can be found at http://www.calvin.edu/news/releases/2003_04/fire-demo.htm.

How Can You Help?

Ever wonder how you might be able to help the engineering department? There are plenty of ways. **Spread the word** to friends, neighbors, co-workers and family about your experience in the Calvin Engineering program. Word of mouth is often the best advertisement. If you have a personal web page, would you consider helping us reach prospective students? Popular search engines like Google rank their listings in part by counting how many incoming links a page has. You can help us out by placing the text "Christian engineering" on your web page and linking that text to our home page, <http://enr.calvin.edu>.

Offer a summer internship position to a Calvin student. Professors Ned Nielsen (nnielsen@calvin.edu), Leonard De Rooy (lderooy@calvin.edu) and Wayne Wentzheimer (wwentzhe@calvin.edu) are always looking for new placements for students. The summer work experience is invaluable to our students. We wish you could experience the enthusiasm that is seen in these students when they return in the fall.

Come **give a seminar** to the engineering students. We are always looking for people from industry, research, and consulting to come and share their story with students. We try to offer 10 to 12 seminars per semester to give students the big picture of what it means to be an engineer. If you would be willing to speak, please contact Michelle Krul at mkrul@calvin.edu.

Mentor a Senior Design Team. We are always looking for people from industry that would be willing to give a few hours of their time each month to our senior design teams. Having someone to consult with on their projects and bounce off an idea is a real practical and tangible way to make a difference for some seniors. Contact Prof. Wayne Wentzheimer, wwentzhe@calvin.edu, if you can help in this area

There may be other ideas not mentioned and we would love to hear from you. **Thank you** to those who in the past that have responded with various gifts and time. The faculty and students really appreciate everything you do.

Alumni Information Update

We are working with the Alumni Office to keep as accurate records as possible of our Alumni. If you are a BSE graduate and have moved, gotten a new job, or completed graduate school we would like to ask you to take a few minutes and send an e-mail to engineering@calvin.edu. Please include your full name, year of graduation, current address, current e-mail, current employer and position with that employer, completion of advanced degrees, (e.g. MBA, Univ. of Michigan, 2002 or PhD in Environmental Engineering, Univ. of Illinois, 2000) and licensure information.

We are also looking for people who would be willing to be contacted about an "Alumni Update" article for future Engineering Newsletters.

2003-04 SCHOLARSHIPS

Bosscher Scholarship

Matthew Ooms, Edmonton, AB
Catherine Vincent, Seattle WA
Freeland Shaw, Dayton, OH
Peter Tuuk, Grand Rapids, MI

Bosscher MSPE Scholarship

Patricia Brinks, Hudsonville, MI
Melanie Haagsma, Grand Rapids, MI

Bosscher SAE Scholarship

Benjamin Hammer, Williamsburg, MI

Brian L. DeWall

Memorial Scholarship

Emmanuel Legbeti, Jos, Nigeria

Charles DeVlieg Scholarship

Danielle Van Hal, Kenmore, WA

Daverman Family Scholarship

Jonathan Cory, Holland, MI

Calvin Engineering Scholarship

Matthew Vredevoogd, Wyoming, MI

Calvin Junior Engr. Scholarship

Matthew DeKam, Leota, MN
Sarah Chandrasekar, Mississauga, OH
Christopher Wiesehan, St. Louis, MO

Reimink/Prein and Newhof Scholarship

Jon Reimink, Grand Rapids, MI
Andy Reimink, Grand Rapids, MI

AMDG Scholarship

Nyela Turaki, Tans-Ekulu Enugu, Nigeria

Elenbaas Family Engineering Scholarship

Randall Elenbaas, Canton, MI

Burke E. Porter Scholarship

John Zeilstra, Hinsdale, IL

International Engineering Internship: A Summer in the Rhineland

by Matt Ooms

I stepped off the plane for the first time onto European soil at the beginning of what was to be one of the most challenging, exciting and enlightening summers of my life. After ten hours of travel and eight time zones, I had arrived in Frankfurt Germany where I was taken by car immediately to TRW Automotive in Koblenz where I began my internship as an “engineer in training” with the Electric Parking Brake Department testing team. And so it began.

My work with TRW was primarily focused on the testing of the Electric Parking Brake (EPB) they were developing for Audi, Fiat, and Volkswagen. The EPB replaces the cable actuated system in a traditional parking brake system with an actuator powered by an electric motor. Toggling a small switch located on the console rather than pulling the lever found in typical parking brake systems controls the parking brake. The substitution of the switch in place of the lever saves on space and ensures that all people regardless of strength can effectively engage the parking brake when needed.

The particulars of the EPB operation were governed by the electronic control units which monitored and controlled the applied braking force, the angle of incline of the vehicle (important for determining how much force to apply to the brakes) the temperature of the brakes, and were programmed with the



ability to implement the EPB's additional features. One such feature is the automatic drive-away assist. A driver is able to engage the parking brake while stopped on a hill, and, without disengaging the brake, drive away. The parking brake will sense the driver's attempt to accelerate and when enough torque is developed to prevent roll back, will disengage the parking brake automatically.

My particular responsibilities ranged from developing temperature models of the brake discs under extreme conditions, to analyzing the forces inside the parking brake actuator, to running endurance and vehicle tests of the brake system.

While at the company, I was given a long leash to move around and observe a variety of different people in different

areas. I was able to spend a good amount of time down in the tool shop working with the shop technicians who were more than happy to tear apart every component of the braking system to show me precisely how it worked. I was able to stop by the offices of senior engineers to ask them questions about their jobs and careers, always being met with welcome, and I was privileged to eat lunch with some of the top ranking members of the company.

But my summer involved much more than just this work experience. Weekends were almost always spent traveling with JJ Zielstra (Ofenbach), Eric Smith (Freiberg), and MeiLi Nielsen (Aurau) to different regions in Europe. One weekend Professor Nielsen was able to visit with us and take us on a world-wind tour of Bavaria. At the end of the summer after all was said and done, I finished things off with a week in Barcelona Spain, relaxing in the Mediterranean sun; A fine conclusion to a summer that won't soon be forgotten.

The opportunity to participate in this program is one that I have not once regretted. It is truly a blessing to have in our department and college the dedication and determination in the faculty to make opportunities like this possible for students. I would be amiss if I did not specially recognize Professor Nielsen's efforts in arranging the job placements and making these internships possible for students year after year.

Chair's Corner (or Musings from the Chair)

Chair. It's a title I've taken on for a while. I began thinking about the word “chair” a few days ago when at lunch the person next to me noted that the chairs we were sitting on were not that well designed. Later I sat on a lab chair that was not made to give me a sense of confidence in its ability to keep me off the ground. As I write this, the chair I sit on is clearly designed to keep me awake. Recently, the National Academy of Engineers published a fascinating list of the 20 greatest engineering achievements of the 20th century. Chairs were not on the list; they've been around for a while. The NIV concordance doesn't even have an entry for “chair.” I guess I need

to choose either “seat” or “throne.”

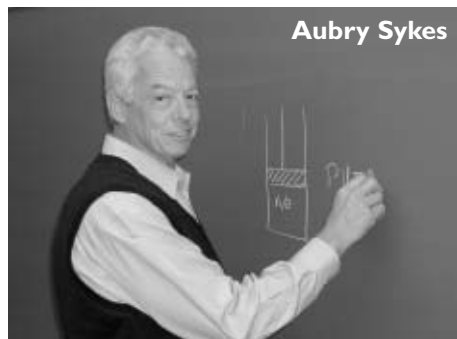
All of us depend on the chairs we sit on daily as we eat, work, and relax with family and friends. Some of you have spent a significant part of your engineering career working on new and better chairs. To me, a great chair has to be more than comfortable. It has to have a solid foundation. In the same way, a great engineering program or a great engineering career has to have a solid foundation. As we learn from the parable of the two structural engineers building residential buildings, the only foundation for our lives and our work is our triune God. It has been such a privilege to see how that foundation shapes the lives of our students as they

seek to serve Him as engineers.

If you have a great chair to sit on, it is easy to take it for granted because it doesn't bother you or cause you trouble. In the same way it is easy to take for granted the foundation of our lives when all is going well. This past few years in the Engineering Program have been years of such great blessing as we have seen clear growth in the program. We give thanks to God for those blessings in our lives and for the foundation we have.

Chair. It's more than a title; it is a privilege. To be serving outstanding soon-to-be-engineers alongside gifted and dedicated colleagues with the help of committed alumni and friends truly is a privilege.

New Faculty



The Engineering Department continues to grow and currently follows Education and Business as the third largest program at Calvin. We are excited to welcome three new faculty members to the department this year.

Scott Yost, Ph.D. is here on a one year sabbatical from the University of Kentucky. He received his BA in Mathematics from Asbury College and his Masters and Doctoral degrees in Civil Engineering from the University of Michigan. His primary research interests include numerical modeling of surface-water environments and the related computational methods and parallel computing. Other research interests include parameter estimation and optimization techniques in the context of water resources, irrigation and environmental systems. During his eight years at the University of Kentucky, Dr. Yost taught fluids, civil engineering systems and graduate courses in open channel flow, finite element analysis and computational hydraulics/mechanics.

Dr. Yost has been commuting from Ludington where some of his extended family lives and enjoying remodeling a cottage during his spare time. Scott and his wife, Heather, have been married 12 years and have three children, Nathan, Benjamin and Natalie.

Dr. J. Aubry Sykes has joined the Chemical Engineering faculty on a two-year appointment. Dr. Sykes graduated from the University of Maryland with a BA in Metallurgical and Chemical Engineering and then completed his Ph.D. there in 1968 in Chemical Engineering.

For many years, Dr. Sykes carried out and led the discovery and development

of new materials and the development and improvement of processes in producing and applying materials—from R & D through startup of major facilities, globally. He has taught at Pennsylvania State University, Harrisburg Community College and Grand Valley State University. He enjoys teaching science and mathematics courses that underlie engineering as well as a wide range of courses in basic, chemical, and environmental engineering.

Dr. Sykes has unique expertise in technology management—especially patent portfolio management, R & D Strategy, materials technology, and environmental technology. He consults in these areas and serves as a professional coach for executives. He has several patents and publications and is a member of AIChE, IEEE, Sigma Xi, The World Future Society, and AAAS.

Aubry enjoys sailing, golfing, traveling, cooking, and gardening with his wife, Nyna, from their home in Rockford. Aubrey and Nyna have also led community development and various charitable activities.

David B. Wunder is the newest addition to the civil engineering faculty. He arrived at Calvin for the interim and is in a tenure track faculty position. David graduated from the University of Missouri-Rolla with a BS in Civil Engineering. He completed his MS in Civil and Environmental Engineering from the University of Iowa in 1994, is a registered Professional Engineering in Minnesota, and is a Diplomat of the American Academy of Environmental Engineering.

David has worked as an environmen-

tal engineer in the areas of water supply and treatment and wastewater treatment. His designs include facilities in Arizona, California, Utah, Colorado, Wyoming, Iowa, Wisconsin and Minnesota. He has also had professional experience in planning and assessment of water resource systems in urban and rural settings. Mr. Wunder has teamed with Engineering Ministries International on four separate water systems master plans for sites in Kenya, Madagascar, Bangladesh and Guatemala.

David is excited about God leading him to Calvin. Teaching in the Calvin Engineering Department, a terrific program that is committed to integrating Christian faith with engineering practice, is a great fit for him. The decision to shift professionally from consulting to teaching was relatively easy—David has long desired to teach at the undergraduate level, and is excited to join a faculty and campus that prioritizes Christ in the classroom and marketplace.

David and his wife, Tricia, are thrilled about raising their family among the Calvin Community and in the Grand Rapids Area. David and Tricia have two children. Daniel is 3-years old and Cara is 5-months old.

Along with a new job at Calvin and family responsibilities he is currently enrolled in the Ph.D. program at the University of Minnesota where his research relates to evaluation and optimization of drinking water treatment slow-rate biofiltration processes.

The engineering department is excited about the expertise of all three of the new faculty members and welcomes you to come by and meet them any time.

2003 Engineering Fall Picnic

The annual fall picnic was held again this past September. Students from every class level were encouraged to sign-up. The purpose of the picnic is to allow students, especially freshmen and sophomore students, to get acquainted with each other and the faculty in a casual fun atmosphere. Due to rainy weather the picnic was moved inside the Engineering building. The last minute scramble made set-up very interesting.

The picnic was attended by nearly 300 students and faculty. Student club officers from ACSE, ASME and IEEE cooked and served hamburgers, bratwursts, chips, potato salad, fruit salad, cookies, and soft drinks. They also coordinated games and prizes.

The highlight of the picnic was a faculty dunk-tank. Students had to pay \$1 a ball or \$3 for 5 balls to dunk their favorite (or maybe not-so-favorite) faculty member. Profs. Jeremy VanAntwerp, Paulo Ribeiro, Randy Brouwer and Leonard De Rooy all got their turn in the “hot” seat; or maybe better said the “wet” seat.



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