



ENGINEERING NEWS

METERS MANAGE ELECTRICITY USAGE IN MAHADAGA

by Kevin Manieri '12

“We approach the new semester with joy and anticipation, resting in the knowledge that we have helped serve our clients and the Burkinabe people and looking forward to completing the well-defined, attainable goals for this spring.”

This past January, professor Randy Fish and students David Allen and Kevin Manieri, spent three weeks in Mahadaga, Burkina Faso installing prototype meters for the KWHR Meter Project.

The goal of the KiloWatt Hour (KWHR) Meter Project is to develop a meter that will automatically ration available electrical power. This means that individual homes or rooms can be allocated a specific amount of energy, and, once the limit is reached, they will be automatically shut off until the start of a new day. This is particularly useful for off-grid solar power stations used by our clients at the Center for the Advancement of the Handicapped (CAH), in Mahadaga, Burkina Faso. Through energy rationing, the KWHR meter allows for greater energy sharing without the risk of over-draining the batteries and, thus, reducing the life of the solar power



Professor Randy Fish (left), Kevin Manieri '12 (center) and David Allen '12 (right) install a kilowatt hour meter at the Center for Advancement of the Handicapped (CAH) in Mahadaga, Burkina Faso.

system. Along with energy rationing, our meters also provide our clients with feedback information that promotes energy awareness.

After three years of hard work designing, building and testing, the KWHR Meter Project has completed and installed three functional meters. We installed two meters in missionary houses for client feedback and a third meter that will provide blind and deaf students living at the CAH school with electricity. During our time in Burkina

Faso, we discovered a number of minor problems, most of which we fixed prior to our installation. Through our testing and installations in Mahadaga, we discovered some problems that will need to be fixed at Messiah during the spring term. Consequently, we approach the new semester with joy and anticipation, resting in the knowledge that we have helped serve our clients and the Burkinabe people and looking forward to completing the well-defined, attainable goals for this spring.

SOCIETY OF WOMEN ENGINEERS GROUP ATTENDS CONFERENCE IN CHICAGO

by Sara Finn '12



Sara Finn '12 (left), Jean Zipagan '13 (center) and Sarah Finney '12 (right) experience the extraordinary sights of Chicago.

Deep-dish pizza, a massive career fair and a giant stainless steel bean.

That's what awaited myself and two other female engineers when we took a four-day road trip to Chicago for the annual Society of Women Engineers (SWE) Conference last October. Sarah Finney, Jean Zipagan and I took advantage of this amazing opportunity and drove 12 hours to Illinois to attend what proved to be a fabulous conference. Sarah Finney and I had attended the SWE conference last year in Orlando and found it to be a rewarding

experience. So, when we heard that the conference was going to be in Chicago this year, we decided that we had to go. We invited the senior and junior members of our SWE group to accompany us. Jean Zipagan was able to join us. After a lot of planning, the three of us left for Chicago.

After we arrived and settled into our room, we next took a bus to the conference center and explored the opening of the career fair that contained more than 100 booths. When dinner time rolled around, multiple hospitality suites opened

up, providing appetizers and a wonderful networking opportunity.

After a good night of sleep, we went back to the career fair with resumes in hand. Dressed in our business attire, we spent the day talking to recruiters from various companies and attending information sessions about life as an engineer. Representatives from some of the biggest companies were present, leading sessions and recruiting students. For example, Lockheed Martin, Toyota, Cummins, Navair and many others were reviewing resumes and interviewing applicants. It was a successful day all around. We learned a lot, made great connections and even got a few interviews.

After such a long and exciting day, we went out with a few locals to get some famous Chicago deep-dish pizza. It was absolutely delicious.

The next day, it was time to head home, but not before we took a little time to explore the city. We trekked through Millennium Park looking for the rumored giant bean. After a lot of wandering around and more than a few wrong turns, we finally found it. Being the engineers that we are, we marveled at its construction and attempted to analyze it before we hopped back in the car for the return trip. Overall, the 2011 SWE trip to Chicago was an amazing experience! We had a great time bonding and learning about the possibilities that engineering gives us.

ENGINEERS' WEEKEND AT MESSIAH COLLEGE

by Tim Whitmoyer, engineering faculty member

For more than a decade, the Department of Engineering has held Engineers' Weekends to give prospective students a taste of the life of a Messiah College engineering student. The event is quite different than the usual Open House event. Instead of focusing on financial aid, program requirements and mission statements, the Engineers' Weekend centers on the experience of being a student: living in a dorm, working

on a project team and learning together. The department's overall goal for these events is to help our visitors discern God's calling for his or her life—even if that doesn't include being an engineering student at Messiah College.

During this past year, the department hosted the latest round of quality students considering joining the Messiah College engineering family. We expect to see many

of them again at the beginning of the fall semester. Plans are already underway to have Engineers' Weekends in October of 2012 and February of 2013. If you know of any junior or senior in high school that might benefit from these events, please direct them to our Web page: messiah.edu/departments/engineering/engineers_weekend/index.html

ENERGY GROUP AT THE 2012 PA FARM SHOW

by Carl Erikson, engineering faculty member

The annual Pennsylvania Farm Show once again became a successful occasion for the Messiah College Biodiesel Research Project and Collaboratory Energy Group. During the course of the week, the team connected with almost 650 people regarding Messiah College, biodiesel and the energy group, logging more than 80 total volunteer hours in 6 1/2 days. The conversations and interactions involved numerous contacts with local organizations and individuals either already working with biodiesel or interested to learn more. The event also afforded several opportunities to present results of the Sunflower Project, educate the community about biodiesel and inform them about Messiah College's ongoing educational programs. Overall, team members rose to the challenge and benefitted from the experience of outreach to the community by learning from the interactions and developing relationships for current work being done as well as expanding vision for the future.



Collaboratory Energy Group displays the biodiesel research project at the 2012 Pa. Farm Show.

“We want to connect with members of the community who are interested in small-scale [biodiesel] production to answer their questions, as well as network with other local small-scale producers.”

—Mike Zummo '06,



BIRTHDAY SURPRISE

By David Gray, engineering faculty member

Arriving early on my birthday, I noticed my office door colorfully adorned with Post-its. My immediate thought: “Did they get inside?” Opening the door, it was beautiful. What an improvement. The balloons hid my stacks of stuff strewn on every surface. The room had turned into a sea of color. I could only smile, enter into and enjoy the fun. It is a joy to join and walk daily with our engineering students and their friends. They are a wonderful group, and I thank them for being thus.

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The mission of Messiah College is to educate men and women toward maturity of intellect, character and Christian faith in preparation for lives of service, leadership and reconciliation in church and society. Graduates of the engineering program will therefore be technically competent and broadly educated, prepared for interdisciplinary work in the global workplace. The character and conduct of Messiah engineering graduates will be consistent with Christian faith commitments. We accomplish this mission through engineering instruction and experiences, an education in the liberal arts tradition and mentoring relationships with students.

2012 ENGINEERING INTEGRATED PROJECTS CURRICULUM PRESENTATIONS

by Tim Van Dyke, engineering faculty member



The School of Science, Engineering and Health at Messiah College invites you to our

9th Annual Symposium

FRIDAY, APRIL 27, 2012
 JORDAN, KLINE AND FREY ACADEMIC BUILDINGS

9 a.m. to 6 p.m.	Engineering presentations
9 a.m. to noon	Computing, mathematics and physics presentations
1 to 6 p.m.	Presentations in the fields of biochemistry, biology, chemistry, environmental science, exercise science, molecular biology, nutrition and nursing



As in past years, the students in the Integrated Projects Curriculum (IPC) will pub-

licly present on their projects at the end of spring semester. They will be discussing

their projects and the work that they have been doing on each project for the past year or, in many cases, the past two years. These presentations are always an interesting way to find out what the students have been doing, offering a good introduction to engineering and, in particular, Messiah College engineering for anyone who is interested.

This year's presentations will be part of the School of Science, Engineering and Health's Symposium Friday, April 27. All are welcome to attend.

If you are interested in hearing some of these reports, but are unable to attend in person, you might be interested in learning that all of the IPC presentations will be simulcast on the Web. You would be able to hear the presentations, see the slides and even ask the questions of the presenters in real time. For system requirements and more details on the webcast, see the department Web page.