



NEW STRUCTURE, NEW FACES IN ENGINEERING

This fall saw the results of a number of changes within the School of Engineering and Technology.

We said several farewells and extended several new welcomes and congratulations.

In the welcome category, Dr. Andrew Jones joined the electrical and computer engineering department in September. He replaced Dr. Abhiman Hande, who relocated to Texas to pursue research interests.

Dr. Andrew Jones comes to Lake Superior State University from Purdue where he earned his Ph.D. in electrical and computer engineering. His work involved research in environment modeling and navigation for mobile robotics.

Jones' interests lie in artificial intelligence in robotics applications, integration of environmental sensors into intelligent systems, computer vision and image processing, micro-controllers and digital systems.

He and his wife, Brenda, have two grown children, Tammi (24) and Michael (20).

In August, the Mechanical Engineering Department added Dr. Robert Hildebrand and Wael Mokhtar, replacing departing faculty members, Dr. Wendy He and Dr. Nael Barakat.

Dr. Robert Hildebrand has traded winters in Finland at Tampere University to those of Sault Ste. Marie. Hildebrand received his doctorate from Royal Institute of Technology in Stockholm, Sweden with a focus on acoustics after obtaining degrees from the Universities of Nebraska and Michigan in mechanical engineering.

His specialties are acoustics, vibration, and soil dynamics (terramechanics), as well as related experience from Mexico and Finland.



Dr. Andrew Jones

Hildebrand and his wife, Jackie, have two children, Patric (4) and Anna (2)

Wael Mokhtar is currently completing his doctorate at Old Dominion University in Norfolk, Va. in aerospace engineering. He obtained his master's and bachelor's degrees in mechanical engineering from Alexandria University in Egypt.

Mokhtar's research and consultation background includes fluid dynamics and structure interactions, aero-dynamic flow control and jet flow, wind tunnel testing, airfoil design, racing car aerodynamics and finite element analysis.

His wife, Salma Elsaged, is also completing a doctorate. They have a son, Omar (2 1/2).

On the congratulations side, Dr. David Baumann advanced to the chair position of the Electrical and Computer Engineering Department. The previous chair, Morrie Walworth, is now at the helm as chair of the School.

Mechanical Engineering and Manufacturing Engineering Technology are a combined Department, chaired by Paul Duesing, while Jim Devaprasad chairs the Manufacturing Engineering Technology program.



Dr. Robert Hildebrand



Wael Mokhtar

SENIOR SPORTS FOCUS

Despite the challenges, engineering students continue to show up on the athletic team rosters.

This year's graduating engineering student athletes are William C.A. Ciccone, Jr. of Timmins, Ont. and Courtney Dusnik of Muskegon, Mich.

Ciccone, a goalie for the men's ice hockey team, received the Laker Hockey Scholar-Athlete Award during his freshman and sophomore years.

Outside of athletics and academics, Ciccone also serves as a representative on the



Courtney Dusnik

LSSU student government.

Dusnik completed her four years of eligibility with the women's volleyball team during the 2004-05

season.

During her career, the outside hitter compiled 1057 digs, putting Dusnik in second place for LSSU all-time career digs.

Although neither met the other as a teammate in sports, the two mechanical engineering students are teammates on the senior design project team CAPT (see page 3 for more details).

Dusnik will see the project through to completion in the spring, while Ciccone will complete his obligation this fall. He completed a senior cooperative project this past summer working with B.H. Martin Consultants in Timmins to design a school's heating system.



William Ciccone

YOU CAN HELP ADD 40 MORE TO OUR NUMBERS

The School of Engineering and Technology has put out the challenge to increase our freshman enrollment numbers. Recent freshmen classes have been numbering around 60 students. The School has developed the following freshmen enrollment goals:

Fall 2006	100
Fall 2008	120

Currently, 10 members of the Industrial Advisory Board (IAB) have been assisting the Admissions Department by providing their time at various college nights held throughout Michigan. IAB participants have noted that their presence has allowed LSSU to typically be the only university with more than one person at its table, allowing the Admissions Counselor more flexibility.

The assistance of a non-LSSU employee lends credibility with parents when answering questions. Don't think you know enough to help out? Remember, if you're an alumnus, you've already been here! Leave the money and fine details information to the Admissions Counselor. It's what our programs have to offer and the personal experience you've had at LSSU that answers all the other questions: What's it like at LSSU, what are the professors like, what do they do in labs, what kind of equipment is available, what kind of computer will my child need to bring?

Not comfortable being in the the foreground, but still want to provide assistance to help our enrollment? Here are a few suggestions:

- Various materials promoting the engineering programs at LSSU are available through the School office. You can visit your local schools and meet with teachers and counselors, providing them copies of materials to encourage interest in our programs.
- Provide Lake State with high school teachers' or prospective students' contact information. The School will contact them to offer information and/or schedule a visit.
- Offer to judge high school competitions and make LSSU's presence known.
- Of course, there's always wearing your Laker gear.

Another way to provide assistance is through monetary means. The following scholarships have recently been developed to encourage freshmen to choose LSSU engineering:

- Charles H. Snyder Engineering and Technology Memorial Scholarship, named after a past Chair of the IAB and dedicated supporter of Lake State.
- Robotics Scholarship.
- Vehicle Development Scholarship.

Please join us in our efforts. Contact the School of Engineering and Technology at 906-635-2207 or via e-mail at engineering@lssu.edu if you would like to support the School's enrollment goals.

— IAB Recruitment & Scholarship Committees



ENGINEERING ALUMNI HONORED — Scot Lindemann, back right, stands with his wife, Lisa, and their sons, Reece (left) and Alex.

FIRST ALUMNI FELLOW AWARD PRESENTED

This year's Great Lake State Weekend, held during October 21-22, saw the advent of a new alumni recognition award developed by LSSU's Alumni Association. Dubbed the Fellows Award, each school selects an outstanding alumnus for this honor. It is considered the highest recognition an alumnus can receive from his/her school.

The inaugural engineering and technology recipient was Scot Lindemann of Holland, Mich. He received his Bachelor's of Science: Automated Manufacturing Engineering Technology in 1989, finishing in the top 10 percent of his class.

Upon graduation, Lindemann went to work at JR Automation in Holland, Mich. He then relocated to Ohio to

work for Motoman as a key engineer, leading the way in innovative approaches to robotics applications.

Nearly six years later, JR Automation lured Lindemann back to Michigan, where he currently serves as the Vice President for Engineering.

Lindemann has had a habit of impressing both former and current employers. As a result, at least nine other LSSU engineering and technology graduates have been hired. Sister companies have also taken notice and have accompanied Lindemann to LSSU for recruitment trips.

A plaque in Lindemann's honor will be mounted in the Walker Cisler Center with the other 2005 Alumni Fellows.

INTRODUCING THE SENIOR PROJECTS FOR 2005-06



Project Title: Mobile Robotic System
Customer: LSSU School of Engineering & Technology
Project Synopsis: In an attempt to showcase the talents and abilities of the School of Engineering and Technology's graduates, team

Automated Promotional Engineering Systems (APES) will design and construct a Mobile Robotic System (MRS). This self contained system will serve as a tool for LSSU to demonstrate to both industrial and academic communities the various robotic and automation skills that SET graduates possess.

The Mobile Robotic System will be centered around an industrial robot that is capable of performing various tasks. The system will be mobile in the sense that it will possess the ability to be easily transported from one location to another. It will also incorporate technologies such as part feeders, vision systems, PLCs, and sensors, which are used in various courses. The system will demonstrate these technologies by performing two tasks: solving a Rubik's Cube, and the assembly and testing of an automotive distributor.



Project Title: CNC Plasma Cutter
Company: LSSU School of Engineering & Technology
Project Synopsis: The School of Engineering and Technology strives to provide students laboratories with modern equipment and

machinery in order to provide them the opportunity to experience conditions similar to those found at an industrial facility.

Senior student design team Computer Aided Plasma Torch (CAPT) will design and build a Computer Numerical Control (CNC) Plasma Cutter for instructional use in LSSU's Manufacturing Processes Laboratory. This machine will use an automated cutting process to cut various types of metal into a wide variety of shapes and sizes for class projects according to the design specifications and acceptance criteria developed by the School.

Some of the CNC plasma cutter's major tasks will include extracting motors and other components from unused equipment and integrating these components with an operator interface and controller.



Project Title: Automotive Pedal Assembly Tester
Company: Dura Automotive Gladwin, Mich.

Project Synopsis: Dura Automotive Systems Inc. designs and manufactures driver control systems for the automotive industry. Dura Automotive Systems Inc. will be manufacturing adjustable

brake and accelerator pedal assemblies that will be installed in all 2008 Daimler/Chrysler RT Minivans. To ensure a quality product, Dura needs a device that can test every adjustable pedal assembly at the end of the production line before shipping.

Team Specialized Engineering Testing (SET), composed of four mechanical and two manufacturing engineering students, has been given the opportunity to design and build an end-of-line brake test unit to test adjustable pedal assemblies. The completed tester will be an integral part of the production line at Dura's Gladwin facility to test for various characteristics and functionality requirements of the pedal assemblies.



Systems Integration and Design

Project Title: Frequency Input Modules for the Superior Data Acquisition System
Company: Continental Teves, Inc. Auburn Hills, Mich.
Project Synopsis: Continental Teves develops vehicle electronic safety systems to help achieve maximum driver safety,

convenience, and comfort. During testing, Continental Teves acquires signals from various vehicle sensors with a custom instrumentation system called the Superior Data Acquisition System (SDAS). The addition of a Frequency Input Module will enhance the current SDAS system by providing the company with the ability to record wheel speeds from its own and competitors' vehicles.

Systems Integration and Design will design and build two prototype frequency input modules for the SDAS system. Using the wheel speeds, the stopping distance of a vehicle can be calculated. It will enable Continental Teves to benchmark its safety systems to competing products while supporting the development and testing of its own electronic safety systems.

INDUSTRIAL SERVICES AVAILABLE

Industry typically has limited resources, in terms of time and money. The LSSU School of Engineering and Technology recognizes this and offers its industrial services as a way to satisfy industry's needs at a reasonable cost.

The School offers the following industrial services:

- Placement support
- Full-time, cooperative education, and internship
- Project management
- Expert witness
- Research
- Design/analysis
- Advanced prototyping
- Product/process/materials testing and data acquisition

- Training
- On-Campus or on-site

Projects are managed by a dedicated industrial liaison and involve required faculty/staff expertise.

A few of the recently completed projects include:

- Prototype robot brake controller design and build
- Prototype, high-pressure, Self-Contained Breathing Apparatus (SCBA) manifold fabrication
- Tree/pole climbing body harness testing

Please contact the School at 906-635-2207 or by e-mail at engineering@lssu.edu to find out if LSSU can help you.

ACCREDITATION CONTINUES

The Manufacturing Engineering Technology program received notice from the Technology Accreditation Commission (TAC) of the Accreditation Board for Engineering and Technology (ABET) in August that the program received a six-year extension.

The visiting team cited LSSU as an outstanding example of assessment and requested faculty members attend the 2005 Assessment Institute at Indiana University at Purdue to hold an assessment workshop.

Professors Paul Duesing

and Dave McDonald, along with former faculty member, Dr. Kevin Schmaltz (now at Western Kentucky), led the workshop on qualitative and quantitative assessment of course and program objectives.

Currently, materials are being collected for the Engineering Accreditation Commission (EAC) visit that will take place during fall 2006 for reaccreditation of the mechanical and electrical engineering programs as well as seeking first-time accreditation of the computer engineering program.



SCHOOL OF ENGINEERING & TECHNOLOGY
LAKE SUPERIOR STATE UNIVERSITY
650 W. EASTERDAY AVE.
SAULT STE. MARIE, MI 49783
USA

**Non-Profit Org.
U.S. POSTAGE
PAID
Sault Ste. Marie,
MI 49783
Permit No. 115**