

**School of Engineering and Technology Industrial Advisory Board  
Meeting minutes for November meeting at Michigan Scientific  
Friday, November 6, 2009**

**Members Present:**

Bob Andersen, Fred Berg, Steve Bryan, Nathan Callaghan, Chris Conklin (on telephone), Lynnette Eding, Gerry Grosskopf, Ralph Larsen, Adam Lyon, Ralph Shoberg, Brian Theriault, John Truckey, Don Stephanic, Matt Witte, Marty Zoener

**LSSU Personnel:**

Ray Adams, David Baumann, Jim Deverpersad, Robert Hildebrand, Jeanne Shibley, Morrie Walworth,

**Guests in attendance:**

None

**Opening:**

Fred Berg opened the meeting and welcomed everyone to Michigan Scientific and thanks Ralph Larsen for hosting the meeting.

The previous meeting minutes were emailed to all members in addition to being posted on the LSSU website. The action items from the May 2009 meeting were briefly reviewed:

**Action Items from May 2009 meeting:**

**Responsible**

- Fred to work with Jim Gibbs to get the next meeting on Web X or GoTo meeting. Fred B.
- Prepare Recruitment/Press Kit for 2009 Macro events Chris C / Susan Camp

The action items reviewed and minutes were accepted as stated for the November 2008 meeting. All action items from the current meeting will be listed in RED in the meeting minutes below.

**Chairman's Report – Fred Berg**

- Fred talked about the Secretary election due in the spring meeting and asked members to consider this position.
- Fred reviewed a Salary Survey presentation by Design news from April 2009.
- Fred to work with Jim Gibbs to get the next meeting on Web X or GoTo meeting.
- The topic of Summer Interns was brought up to make sure all members are aware that LSSU can provide some summer interns in any companies are interested in this sort of short term help.
- Fred asked about the possibility of blacksmithing camp in the summer for any interested students. He knows a group of blacksmiths that are willing to come up and teach the camp. Need to get approval from LSSU – Robert Hidebrand will speak with Bill Morrison about this opportunity.

**Subcommittee Updates:**

**Recruitment subcommittee-**

Chris Conklin, Jeanne Shibley, and other members of LSSU put together a Recruiting/Press Kit. The latest versions of the books were passed around to the members to review and give their inputs.

Some inputs from those members that used them at MACRO nights were provided:

- Some members stated there was too much info in the books. There is not a lot of time at these events to spend with each kid or parent.
- Too much information in the books made it cumbersome to find the section of information that you wanted to review with a kid or parent.
- Great tool for 1 on 1's with Admissions counselors.

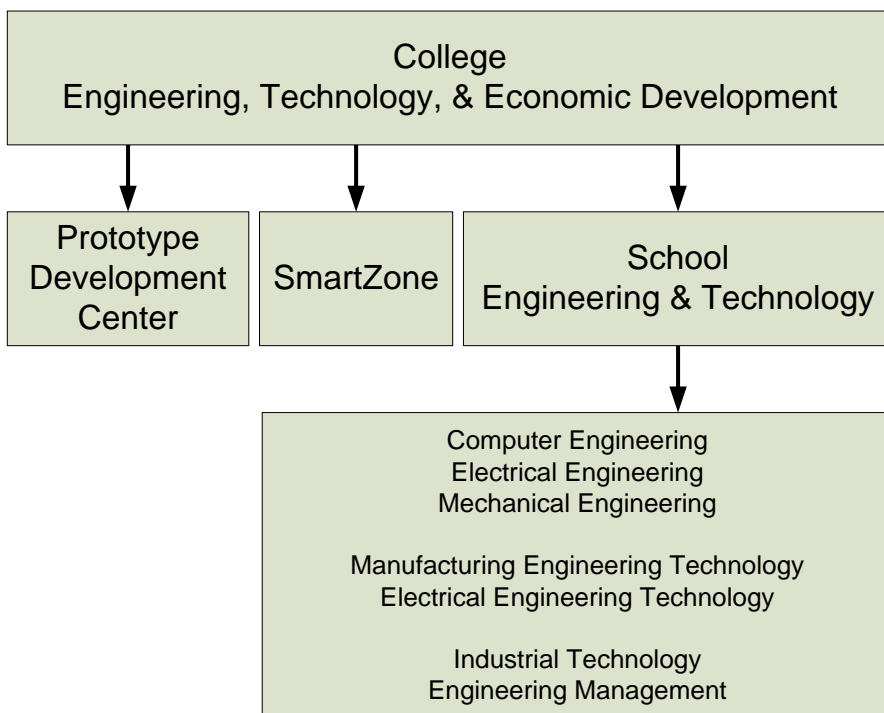
Other ideas:

- Mini CD's – Jeanne brought them and passed one out to each member. They contain all the info that the Recruiting/Press kit has in them.
- Engineering business cards – this could direct them right the engineering web site to get information.
- The Recruiting/Press kit but with a few pages prioritized - 1 or 2 pages with all the information we want someone to know right up front in the book.
- 100 CD's have been given to Admission Advisors
- **Can we have admissions ask for an additional table with an engineering table cloth to catch people's attention at the next MACRO events? – Morrie W**
- **Ask admissions to purchase an extended life battery for their laptops, so the slide show will work all the way through the MACRO events. – Morrie W**
- **Jeanne to put sections of the Recruiting/Press kit book in PDF format to make it easier to find what you are looking for. – Jeanne S**
- **The Marketing class is currently looking at the Highlight data sheets, can we give them the book to review and give their input. David B to meeting with Marketing professor.**

There was a GREAT turn out for the fall MACRO events. 9 members attended various events. Thank you for the support!

Chris to send out email about Spring MACRO events.

## College Updates New Structure -



## New Department Faculty

- **Mansoor Janjua**

- Mechanical Engineering
- New Jersey Inst. Tech.
- Studied the complex physics of the self-assembly process of micron sized particles on electrified fluid-fluid interfaces!



- **Dr Ron DeLap**

- Electrical Engineering
- University of Michigan
- Signal Processing, Control Systems
- Delphi Automotive, Dominican Republic, Air Force, National Security Agency



- **Dr. Sai Chaitanya Nudurupati**

- Mechanical Engineering
- New Jersey Inst. Tech.
- BS Industrial Engineering
- Outstanding graduate student 2003
- Micro Fluids, electrofluidics, & micro particle separation



- **Dr. Paul Weber**

- Electrical & Computer Engineering
- Michigan Technological University
- Taught at U of M, Duluth
- Solar concentration using polymer reflective material and snow, steer by wire, hybrid energy generation, and fly by feel feedback systems.



### **Enrollments at Lake State:**

- Same as last year (172)
  - Actually up a few (12 Mfg Certificate Program)
  - ME (up), ECE (down)
- LSSU
  - Down 45 students (~1.7%)
- Admissions continues to tell us that engineering is a good sell for LSSU; lots of inquiries; one of the top programs at LSSU.
  
- 172 Students
  - 8.0% Women
  - 7.4% URM
    - 22.3% Out of State
    - 15.4% Foreign
  - 6.9% Other States
  - 5.7% Transfer In

### **Activities at Lake State:**

- SmartZone Moving Forward
  - New Building
  - EDA Grant
  - Some Clients
- PDC
  - Very Active
- Extreme Entrepreneur Tour
- FIRST Robotics– Lake State still mentoring a team – students come in and do small projects.
- LEGO Robotics – (kids 9-14 yrs) 3 teams at this years' National event.
- Gaylord
  - First 2 years of Engineering classes will be offered in Gaylord and last 2 years of every other college curriculum.

### **Program Updates:**

#### **Electrical and Computer Engineering**

##### **--- EET Program ---**

- Approved by LSSU Board of Trustees in May
- Currently 1 Student Enrolled
- Looking for More Students
  - Digital side of EE program
  - Less math than EE program
  - Practical (Manufacturing Process, PLCs)
- EGEE280 – looking into what needs to be done with this class
  - Intro to Signal Processing
  - Purpose?
  - Level?
  - Practical Considerations

#### **Mechanical Engineering**

After multiple reorganizations, we're once again..... **“Department of Mechanical Engineering”**

- New faculty member: Dr.Sai Nudurupati

---ME Program ---

- Will replace electronics course (EGEE305).....with expanded technical electives.
  - for *Vehicle Systems Option* –  
EGEE280 – 3 credit signal processing
  - for *Robotics & Automation Option* –  
Choice of... EGEE280 (Signal Analysis)  
*or* EGNR310 Quality Ctrl  
*or* EGME312 CNC course  
(new 3 cr vers. to incorp. simul'n bef cutting)
  - for *General Option* –  
Same 3 as for *R&A* added to the list, and we'll now specify same number of credits as other 2 options, incl 2 courses at 400-level.

---ME Lab Facilities---

- Dynamometer test cell now active
  - Torque vs rpm at tires
  - Power vs rpm at tires
  - Acceleration Performance
  - Rolling resistance (mini-baja)
  - Drivetrain NVH
  - Hill climb simulation
  - Shock loading drivetrain
- New ultrasound / acoustic emission transducers
  - through PDC

---Manufacturing Engineering Technology ---

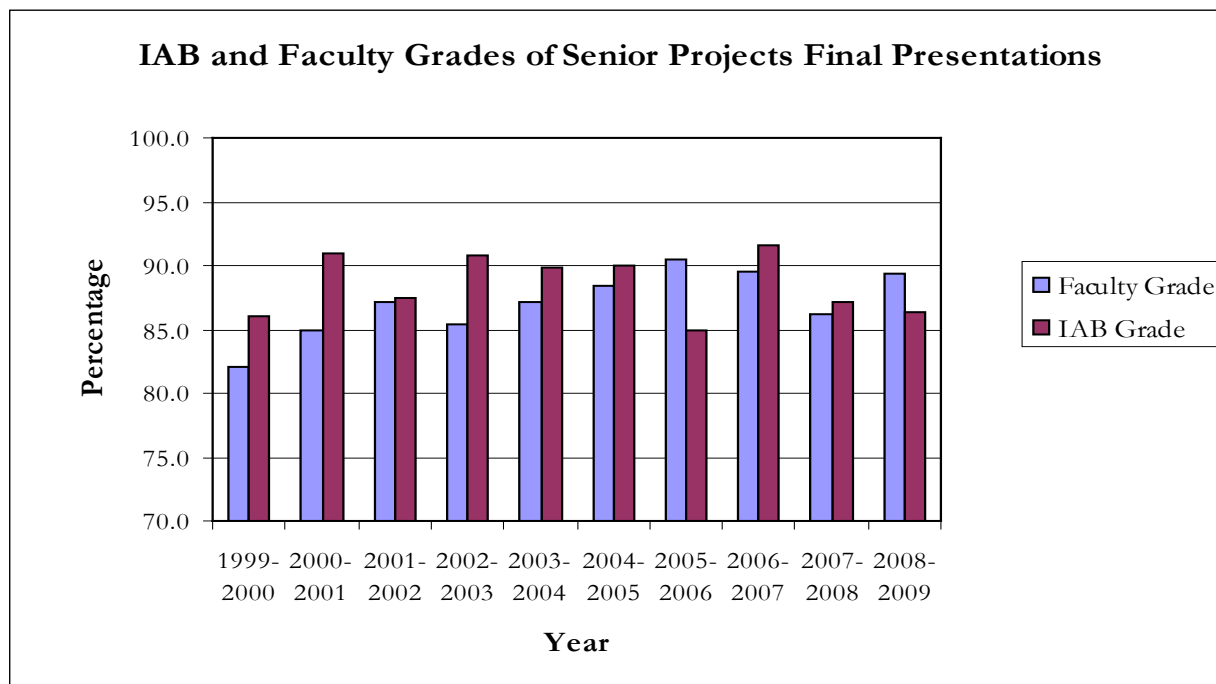
- Total Credits = 124
- Fundamental Courses in Engineering Technology = 28 credits  
(Manuf. Processes, Statics and Strength of Materials, Applied Electricity and Electronics, Eng. Materials, Digital Fund., and Programming)
- Specialty Courses in MET = 32 credits  
(Robotics, Manuf. Automation, CNC Processes, CAD, Assembly Modeling, PLC's, Quality Engineering and Senior Projects)
- Support Courses = 7 credits  
(Managerial Economics and Principles of management)
- Elective Courses = 9 credits  
(Machine Vision, Thermo and Heat Transfer, Supply Chain Management, Vehicle Dev & Testing, and Co-op)
- Math & Science Courses = 26 credits  
(Pre-calc, Calc I, Applications in Tech., Statistics, Physics, and Chem)
- English and other General Education Courses = 22 credits  
(English I and II, Speech, Humanities, Social Science, and Cultural Diversity)

**Senior Projects-**

**Last Year's projects:**

- **Cardiovascular Research Institute of Albuquerque**
  - Development of Dynamic Flow Phantom
- **Western Engineered Products**
  - Process Measurement Device for Fluid Characteristics
- **LSSU Prototype Development Center (PDC)**
  - Various Projects for PDC Clients
- **LSSU**
  - Mini-Baja #3 – Design Drivetrain, Build Car, and Race
- **LSSU**
  - Update and Installation of Dynamometer
- **LSSU**
  - Design and Build of "O" Scale Train Coupler

## Grading of the Senior Projects:



## 2009 – 2010 Senior Projects:

- Industry Sponsored Projects (3)
- LSSU Sponsored Projects (3)

**447** CURRENT PROJECTS  
**Development of Impedance Coupler**

Company.....American Axle and Manufacturing  
 Contact.....Giovanni Rinaldi  
 Advisor.....Robert Hildebrand  
 Team.....2 ME, 2 MET  
 Budget .....\$20,000

**Description:**  
 Development of an adjustable impedance coupling device (tunable inertia, stiffness, and damping) to be integrated in a test stand used to validate vibration performance of automotive drivetrains.

**LAKE SUPERIOR STATE UNIVERSITY** **Prototype Development Projects**

Company.....LSSU's PDC (Cardiovascular Research Institute of Albuquerque & Other Clients)  
 Contact.....George Chandran for CRIA  
 Advisor.....Eric Becks  
 Team.....3 EE, 2 MET  
 Budget ..... \$ Various

**Description:**  
 Work on PDC projects to rapidly turn entrepreneurs' ideas into working prototypes, and also to improve existing system designs for industrial customers. CRIA project in phase II.

**Precision Edge** **Automated Machine Tending**  
Surgical Products Company LLC

Company..... Precision Edge  
 Contact..... Duke Pepin and Joel Diemer  
 Advisor..... Jon Coullard  
 Team..... 1 EE, 1 MET, 2 CE, 2 ME  
 Budget ..... \$17,000

**Description:**  
 Design, build, and installation of an automated work cell capable of fully tending to an etching machine. Goal is to reduce machine idle time and increase productivity.

**LAKE SUPERIOR STATE UNIVERSITY** **Robotics Systems Integration (ME/MET)**

Company.....LSSU Engineering  
 Contact..... Jon Coullard  
 Advisor..... Jim Devaprasad  
 Team..... 3 MET, 2 ME  
 Budget ..... \$18,000

**Description:**  
 Workcell design and implementation of a 4-robot line. Team will be responsible for specifying and integrating a conveyor system, design and build of pallets, fixtures, and robot end effectors, and present an assembly demonstration using the fully functional line.

**LAKE SUPERIOR STATE UNIVERSITY** **Robotics Systems Integration (EE/CE)**

Company..... LSSU Engineering  
 Contact..... Jeff King  
 Advisor..... Dave McDonald  
 Team..... 3 EE, 2 CE  
 Budget ..... \$10,000

**Description:**  
 Workcell design and implementation of a 4-robot line. Team will be responsible for specifying and integrating the control system for the line using DeviceNet, incorporating machine vision and other sensing systems, and present an assembly demonstration using the fully functional line.

**LAKE SUPERIOR STATE UNIVERSITY** **Development of Train Coupler**

Company..... LSSU Engineering  
 Contact..... Paul Duesing  
 Advisor..... Andrew Jones  
 Team..... 2 CE, 1 MET, 1 ME  
 Budget ..... \$2,000

**Description:**  
 Phase II of the design and build of a scale prototype coupler for "O" and "HO" scale model railroads that allows remote controlled coupling and uncoupling of railroad cars at any location.

**SENIOR PROJECTS**

**Philosophy & Key Elements**

*Transition from Academia to Industry or Graduate School*

- **Emphasis on Soft Skills**
- **Working with a Budget**
- **Interaction with Practicing Engineers**
- **Results are Based on Outcomes**
- **Academic Elements Included**

**Please Consider and Submit Projects for 2010-11.**

**Closing Remarks**

- Next meeting is April 30, 2010 at LSSU

**Action Items from November 2009 meeting:**

**Responsible**

- |   |   |
|---|---|
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|---|---|

Respectively Submitted,

*Lynnette Eding*  
 LSSU IAB Secretary