



**School of Engineering and Technology Industrial Advisory Board  
Minutes for Spring Meeting at Lake Superior State University  
Friday, May 2, 2014**

**Members Present:**

Ray Adams, Fred Berg, Tim Bennett, Nathan Callaghan, Lynnette Eding, Dan Goodrich, Steven Kars, Ralph Larsen, Jim Gibbs, Trevor Swenson, Brian Theriault and John Truckey.

**LSSU personnel present:**

Dr. David Baumann, Dr. Andrew Jones, David Leach, Joe Moening, Dr. David Finley, Eric Becks, Jim Depvasaad, Dr. Robert Hildebrand, Professor Weber and Jeanne Shibley.

**Guest:** Jerry Timm from Michigan Scientific

**Business:**

- Meeting Called to Order at 8:35am by Steven Kars, Chairman of IAB
- Steve reviewed the Meeting Agenda
- The meeting started out with a prayer and a moment of silence for LSSU IAB board member, Adil Shafi, who recently passed away.
- Welcome the new addition of Sierra Avery Roselie Kars to the Steven Kars family.

**Meeting Minutes** – Lynnette reviewed the minutes from the Fall meeting

Motion to approve meeting minutes

Fred Berg – Moved

Trevor Swenson – Second, Minutes approved

**Secretary Election**

Steve Kars nominated Lynnette Eding

Ray Adams – Second, Approved

Congratulations to Lynnette Eding for being the new, continued, secretary for the LSSU IAB.

**Recruitment Subcommittee Report – Trevor Swenson**

**Local Events:**

- National Engineering Month (March) - Station Mall, Ontario -
- Student Competitions
- Handouts / Buttons to hand out
- Sault College partnership
  - Dr. Finley has been working with Sault College on building relationships and meeting with our and their professors.
  - Specifically working with the EET program to fit into LSSU's programs.

- There was further discussion on how Sault College fits into Lake State and what classes the students need to take to fit in seamlessly.
- White Pines –
  - VEX – current program at many schools
  - Engineering high school of Sault, Ontario

#### **First Robotics Event Participation:**

- Michigan FRC State Championship
- Event held April 10-12, 2013 in Ypsilanti, Mich. (Eastern Michigan University)
- Lack of IAB presence again this year
- LSSU staff Jim Devaprasad volunteered to support the event.

#### **Local FIRST Robotics Teams:**

- FIRST US Team 1596: The Instigators - Sault Michigan
- FIRST Canada Team 1535: The Knights of Alloy
  - No longer has a FRC team
  - VEX Robotics
- Great Potential to be Future LSSU students
- Ideas to help and contribute, looking for equipment/sponsors and mentors

**At FIRST robotics there is more freedom than at MACRO events to hand out “stuff” and there is a captured audience of potential engineers.**

#### **MACRAO Highlights**

- Targeted list of “tech” schools
- Lower than normal representation from IAB this Spring
- Follow up with interested students from Engineering department?
- AI (admissions) to provide further update

#### **Ideas for Future Improvements**

- 5 minute short videos summarizing each Senior Project?
- Improve process to follow up with students at MACRAO events
- 3D printed robots from Engineering House?
- Webinars / Prep Talk?
- Regional Centers (Dearborn, Escanaba, Gaylord, Petoskey, others??)

#### **Action Items:**

- We need to work on a process for when we meet students at events to get their Name, email and who will follow up with them.
- We need to bring awareness to available jobs for students and internally communicating this to them – There is a job board, but things are out of date and very manual and old technology.

## Admissions Update – with Al Case from the admissions office

Al showed that that high school graduates are down, so our admission numbers are down as well.

- Orientation 2013 – 377
- Orientation 2014 – 430
- Engineering 2013 – 40
- Engineering 2014 - 39

He went over some of the new things coming to the admissions group:

- Create Your Personalized Laker Website
- Rapid Isight program – used for predictions in enrollment and prospects
- Mentioned about the high turnaround for Admissions staff and how new everyone was

He talked about other was to help:

- Continued Event Participation
- Stationary Notes - to prospective and admitted students
- Phone Calls - to prospective and admitted students

## College of Business and Engineering Updates



Placement of May 2014 Graduates

- 26 of 29 May 2014 engineering and engineering technology graduates placed in jobs/graduate school prior to Commencement--several with 3, 4, even 7 job offers
- JR Automation (3), Gentex (3), Tenaris Algoma Tubes (2), Dematic (2), Patti Engineering (2), Ford, Proctor & Gamble, AMT, Pre-Tec, Oak River Tech, Cadillac Products, Innova-Tech Solutions, Cemsensor, Hydro Tech
- UMich, Dunkerque Hockey and grad school

## **School of Engineering & Technology Enrollment History 2006-2013**

Term code key

			Fall 2006	Fall 2007	Fall 2008	Fall 2009	Fall 2010	Fall 2011	Fall 2012	Fall 2013
CENG	Computer Engineering	B5	38	28	32	18	22	18	26	18
EGEE	Electrical Engineering	B5	36	41	40	30	38	36	37	30
EGET	Electrical Eng Technology	A					1		1	1
		B5				1	3	4	5	13
EGNR	General Engineering	A	17	14	15	22	17	13	10	18
EGNT	General Engineering Technology	A	1			1	1	1		1
EMGT	Engineering Management	B5	7	6	7	9	8	4	4	1
EGME	Mechanical Engineering	B5	62	59	59	67	79	85	85	93
EGMT	Manufacturing Eng Technology	A	1	4	3	4	5	2	3	2
		B5	27	25	19	18	12	9	14	21
INDU	Industrial Technology	B5	1			1	1		1	2
Totals			190	177	175	171	187	172	186	200

1.081 1.075

**Fall 2014 Recruiting Stauts**

- SET Admits as of April 2014 Last year:171
- This year: 146 (21-YES, 29-Maybe, 7-no)
- ME 75, MfgET 8
- EE 17, EET 4, CPE 16
- GEN 20, GENT 4, INDT 1, EGMT 1

Summer Orientation Registrants

	16-May	17-May	13-Jun	27-Jun	17-Jul	18-Jul	Totals
ME	2	11	6	2		2	23
Mfgt	1	1	2			1	5
GEN		2	1				3
GENT			1				1
EET							0
EE	1	4		1			6
CE		1					1
Totals	4	19	10	3	0	3	39

**List of “Good Things”**

- Thomas Pleger, Ph.D. selected as LSSU’s 8th President
- Engineering Prof. Dev./Summer Research Fund established
- Gift for PLC trainers upgrade--\$10K
- Gift for Robotics Summer Camp/FR Scholarships--\$10K
- Hosted First Robotics Competition Kickoff
- Michigan Works Training again this year
- Sustainable Energy Concentration approved
- HAAS CNC acquisition pending--\$65K
- Seven Externally-Sponsored Senior Design Projects

We were introduced to LSSU's 8<sup>th</sup> President as of July 1, 2014



## Thomas Pleger, Ph.D.

- campus executive officer and dean of the University of Wisconsin-Baraboo/Sauk County
- MA and Ph.D., anthropology/archaeology, UW-Madison;
- BS, political science, UW-LaCrosse
- grew up on the shores of Lake Michigan in Marinette, Wisc.



Review of the 2013 and 2014 Senior Design Projects and locations



## 2013-14 Engineering Senior Design Projects

- ABI: Automated Braking Innovations, Continental, Auburn Hills, MI
- A-VIS: Adexobot-Vision Integration Solution, Advenovation, Rochester Hills, MI
- LCS: Laser Control Solutions, Mactech, Red Wing, MN
- LOCI: Locomotive Onsite Communication Initiative, Essar, Sault Ste Marie, Ontario
- MRC: Marine Refueling Concepts, Moran Iron Works, Onaway, MI
- RAS: Railway Automation Solutions, Pre-tec (Willamette Valley), Eugene, OR
- SFI: Solar Film Innovations, 3M, Maplewood, MN

## We reviewed the South Hall renovations:



## The Robotics Lab expansion plans:

### LAKE SUPERIOR STATE UNIVERSITY

SAULT STE. MARIE, MICHIGAN  
(PROPOSED CASET ROBOTICS LAB BUILDING ADDITION)

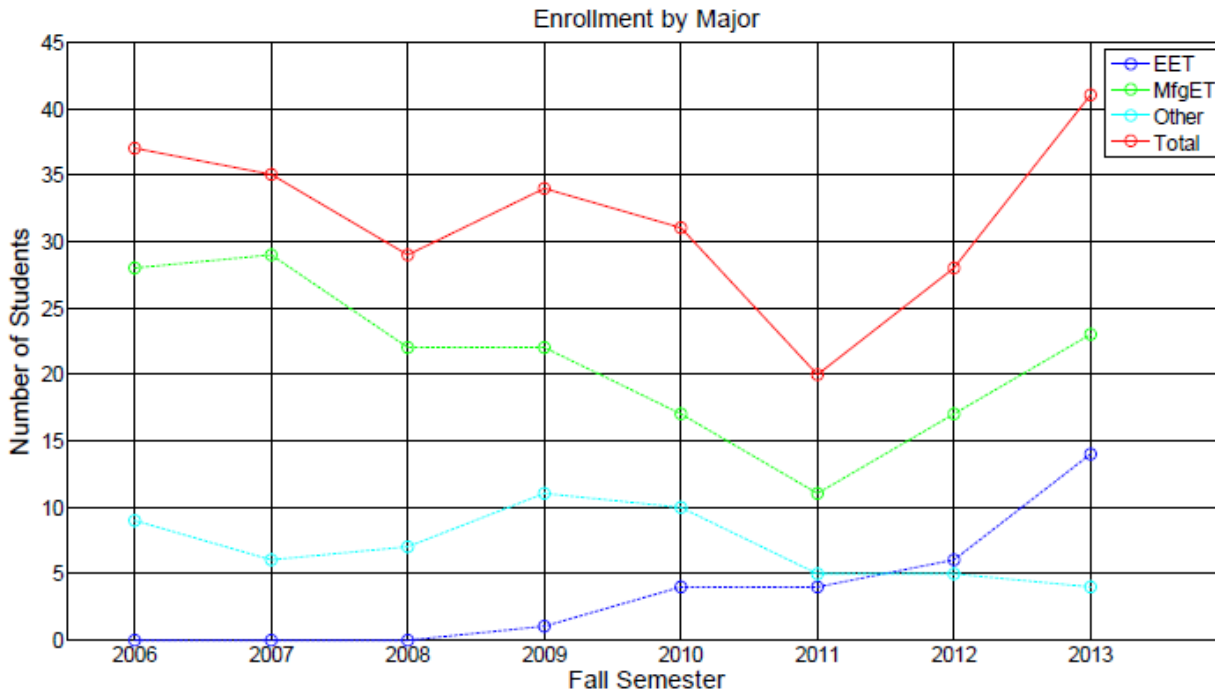


## Additional Focus Forward Topics

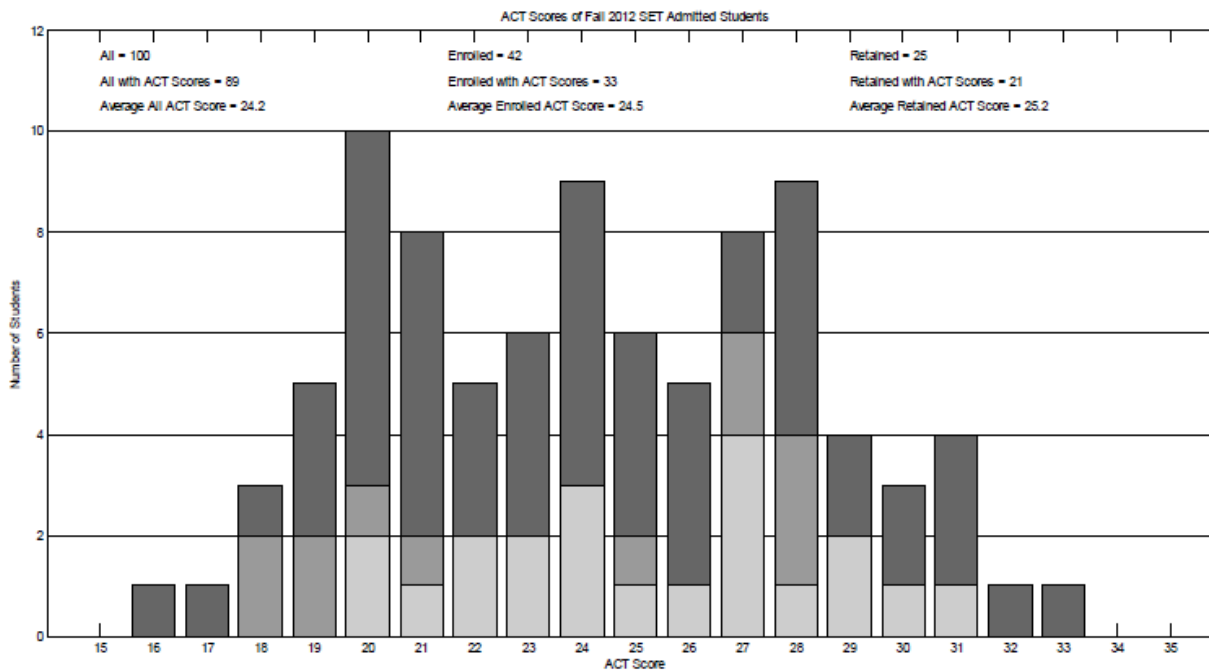
- LSSU Presidential Search status
- Engineering Economics into curricula
- Proposed Sustainable Energy concentration
- LEH Engineering Honorary launch
- Outstanding SET Alumnus Award
- Proposed Civil Engineering major

## School Updates

### Engineering and Technology Enrollment:



### Proposed Admission Standards:



## Proposed Admission Standards: (cont.)

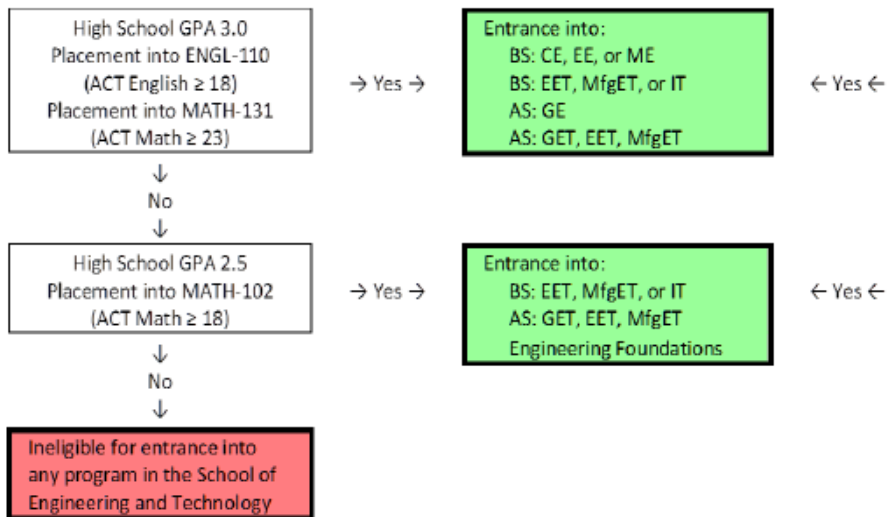
### Math for Engineering Tech

- ▶ ~~MATH-087 6<sup>th</sup>-7<sup>th</sup> Grade~~
- ▶ ~~MATH-088 8<sup>th</sup>-9<sup>th</sup> Grade~~
- ▶ ~~MATH-102 10<sup>th</sup> Grade~~
- ▶ MATH-111 Algebra
- ▶ MATH-131 Trig
- ▶ MATH-112 Tech Calc I
- ▶ EGNR-245 Tech Calc II
- ▶ MATH-207 Tech Stats

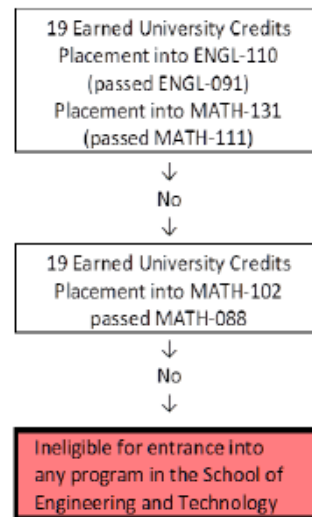
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- ▶ ~~MATH-111 Algebra~~
- ▶ ~~MATH-131 Trig~~
- ▶ MATH-151 Calc I
- ▶ MATH-152 Calc II
- ▶ MATH-251 Calc III
- ▶ MATH-310 Diff Eq
- ▶ MATH-308 Prob & Stats

#### First Time in College



#### Transfer



## Electrical and Computer Engineering Updates

### Sustainable Energy Concentration Approved!

- 10-12 credit hours:
  - Energy Systems and Sustainability (new)
    - EGNR261 (3,0) – open to all majors!
    - EGNR361 (0,3) – lab focus on engineering
  - Power Distribution and Transmission (new) – EGEE411
  - Vehicle Energy Systems (revise current) – EGNR362
  - Contains other classes Thermodynamics, Electro-Mechanical systems, Power
- Concentration for EE or CE (future MD)



## Concentrations

- Four course (13-15 credit hours) model
  - One class is a Technical Elective
  - Three classes satisfy the specific concentration

EE: Digital, Robotics, Sustainable Energy

CE: Robotics, Sustainable Energy

Provides flexibility for scheduling and student interests

## Changes in progress

- CE specific Curriculum changes
  - Computer science merged two classes
  - Reduced credit hours in degree (126)
- ECE common
  - Electric Motors lab repaired
  - Added 1 hour to Electronic Circuit Laboratory
    - Provide additional debugging and soldering topics

## ECE Focus

How to grow ECE enrollment?

- Recruit more students
  - Promote Sustainable Energies Concentration
    - Need your help
  - Offer mobile robot courses
  - Develop Podcasts of successful projects to post
  - Create 2-2 with community colleges
- Build relationship with teachers/counselors

## Mechanical Engineering Update

ME Search for Spring 2014 – **David Leach**

- David will be teaching CNC/CAM, solid modeling, Statics/Strength of Materials, manufacturing processes, eventually Quality, and other things.

ME Search for Fall 2014 **Latest info: Dr. Zakaria “Zak” Mahmud**

- Faculty member for Thermal-Fluids courses (mainly)
- 3 candidates to visit in May: seem to have good lab credentials, especially
  - well-spoken
  - balanced w.r.t. lab, theory, simulation (CFD)

## Updates

- Curriculum Work
  - Fluid Mechanics
    - combined 2 partial semester courses into 1 for full semester
    - Statics and full Math prereqs: differential equations, Calc III
    - Incorporate some of new energy courses as electives
- Haas CNC Mill
  - 4-axis mill
  - several times the horsepower, larger table than current
  - modern control, training & support included
  - arrives May, for use in Fall instruction

## South Hall Renovation Ground Breaking & Reception

- IAB Members participated in the ground breaking ceremony for the new South hall.

## 2013-2104 Senior Project Evaluations

Year	EG495 Projects (Total)		EG495 Projects (IAB)		EG461 Projects	
1999-2002	15 projects	\$427,334	11 projects	\$364,645		
2002-2003	6 projects	\$89,129	4 projects	\$62,032	2 projects	\$27,500
2003-2004	5 projects	\$153,000	3 projects	\$77,000	3 projects	\$32,000
2004-2005	4 projects	\$146,000	2 projects	\$21,000	4 projects	\$19,500
2005-2006	4 projects	\$54,000	2 projects	\$44,000		
2006-2007	6 projects	\$68,700	3 projects	\$51,500		
2007-2008	5 Projects	\$53,000	2 Projects	\$28,000		
2008-2009	7 Projects	\$41,000	1 Project	\$11,000		
2009-2010	6 Projects	\$109,000	1 Project	\$20,000		
2010-2011	5 Projects	\$28,000	1 Project	\$10,000		
2011-2012	5 Projects	\$24,500	N/A	\$0		
2012-2013	4 Projects	\$35,000	N/A	\$0		
2013-2014	7 Projects	\$48,200	2 Projects	\$11,600		
<b>TOTAL</b>	79	~\$1,276,000	32	~\$701,000	9	\$79,000

## 2013-2014 Senior Year Projects

- Total 7 Team Projects – 33 Students
- Industry Sponsored Projects (7)
- 1 Co-op Student and 1 Industrial Tech Student

## 2014-2015 Senior Project Proposals

- 18 Students Expected For EGNR491 (Fall 2014)
  - ~ 2 CE, 2 EE, 3 EET, 7 ME, and 4 MfgET
- Looking for Project Proposals
- Invitation from IAB to Submit Projects

## Request for 2014-2015 Projects – Sponsor’s Commitment

- Past Project Fee: \$2500 + 5% of Budget (\$3500 maximum)
- Provide Industrial Contact
- Responsibilities
  - Sponsor to provide funding and special supplies
  - LSSU to provide facilities and faculty advisor
  - Students to design, construct, and manufacture (or research and prototype)
  - Sponsor owns product & intellectual rights

## **Project Selection Criteria**

- Match Between Students and Projects
- Match Between LSSU Resources and Projects
- Project Scope and Timeframe
- Clarity in Project Definition and Outcomes
- Evidence of Engineering and Financial Support

## Senior Projects Fee

- Proposal to Make Fee = \$4,000 Cumbersome to calculate current Project Fee
- 25% of Faculty Load Per Project
- Software and Equipment Costs
- Less Than Other Engineering Schools

## **Closing Remarks - Nathan**

Next Meeting: November 7, 2013 at LSSU maybe?

**Latest info:** Location at Precision Edge in Sault Ste. Marie  
Start time is 8:00 am with breakfast included.

We ran over on our time, so we ended quickly and moved to lunch at the Anchor Room in the Cisler Center

Respectively Submitted,

*Lynnette Eding*  
LSSU IAB Secretary