

LSSU

Industrial Advisory

Board Meeting

November 2, 2012 | Gaylord, Mich.

Welcome

Nathan Callaghan

Agenda

- 8:30 – 9:00 am
- 9:00 – 9:10 am

Informal Discussion – All Welcome

Meeting Call to Order

– Nathan Callaghan

IAB Updates

- 9:10 – 9:20 am

Action Item Review / Minutes Approval

– Steven Kars

- 9:20 – 9:40 am

Chair's Report

– Nathan Callaghan

- 9:40 – 10:00 am

Recruitment Subcommittee Report

– Trevor Swenson

- 10:00 – 10:10 am

Break

Agenda

Lake Superior State University Updates

- 10:10 – 11:30 am **School Updates – Dr. David Finley**
 - 11:30 – 12:00 pm **Meet & Greet LSSU Engineering Senior Project Students**
– Informal Setting in Groups
 - 12:00 – 1:00 pm **Lunch**
 - 1:00 – 2:00 pm **Mock Interviews / Student Feedback (2) 20 minute sessions**
 - 2:00 – 2:30 pm **Feedback Session with LSSU Faculty**
 - 2:30 pm **Closing Remarks**
- Next Meeting LSSU Campus
April 26, 2013



LAKE SUPERIOR
STATE UNIVERSITY

Secretary's Report

Steve Kars

April 2012 Minutes & Action Items

Members Present:

- Bob Andersen, Fred Berg, Nathan Callaghan, Chris Conklin, Lynnette Eding, Steven Kars, Ralph Larsen, Brian Theriault, Ray Adams, Don Stephanic, Adil Shafi, Tim Bennett, Trevor Swenson, Marty Zoerner, Jim Gibbs, John Tillotson and Dan Goodrich.

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LSSU personnel present:

- David Baumann, Muhammad Janjua, Kenneth Casperson, Jaskirat Sodhi, Joe Moening, David Finley, Eric Becks and Jeanne Shibley.

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Business:

- Meeting Called to Order at 8:35am by Nathan Callaghan, Chairman of IAB
- Nathan discussed the Alumni Bash, held on Thursday night before the IAB meeting. A must go!
- Nathan reviewed the Meeting Agenda
- Went around the room – Introductions of Members and LSSU staff
- Steven reviewed Fall Meeting Minutes/Action Items

April 2012 Minutes & Action Items

Review of Fall 2011 Action Items:

- Please Consider and Submit Projects for 2012-13, More projects needed in the next few years due to more students entering their senior years.
 - **Status: Ongoing reminder**
 - **Responsible: All**
- Call to the membership for new IAB members
 - Need to add to the membership
 - Asking all IAB members to solicit new candidates
 - **Status: Ongoing reminder**
 - **Responsible: All**
- Input for IAB role statement – please provide to Fred or Nathan.
 - **Status: Ongoing**
 - **Responsible: All**
- Keep a list of unemployed IAB members and forward the info to all members for potential opportunities.
 - **Status: Please forward to IAB secretary to update list.**
 - **Responsible: Steven**

April 2012 Minutes & Action Items

- **Chairman's Report**

- Secretary Election – Reviewed Responsibilities – Nominations: Steve Kars, Motion to Approve: Brian T. Second: Don Stephanic
 - Reminded that Chairman's Election is next spring (2013)
 - Reviewed IAB Roll Statement – Be the sounding board for LSSU Engineering
 - Reviewed the letter that was sent to Provost Wallworth, discussed the marriage of Business and Engineering Schools with PDC.
 - David Baumann thinks the first statement “Participate and Development” is too passive
 - Question about adding the PDC to the IAB role.
- Reviewed IAB Scholarship, it is with the Synder Fund, discussed putting the IAB with the Synders' names and add open funding from anyone.
 - Solicit moneys for scholarships from the IAB membership, perhaps put a link on our IAB webpage?
 - Provide Documentation for Scholarship to IAB – **Action Item** – Nathan
 - General discussion on scholarships and how they are distributed/given to help recruiting at the Engineering School.

April 2012 Minutes & Action Items

- **Recruitment Subcommittee Report – Chris Conklin**
 - Chris spoke about the fall MACRAO events, 4 IAB members participated, regionally focused
 - MS Tags are good for getting info looked at
 - Robotics Events – Jim D. chatted about the event
 - Possible table top robot for recruiting events, or Mini Baja Car. Mini Robot could be a future senior project?
 - Addition of an “APP” on smart phones for recruiting – Trevor Swenson talked about the idea
 - Discussion on how to make better recruiting
 - Chris Conklin is retiring from the IAB, his last meeting, round of applause was given to him.
 - Need to fill Chris C. role, any takers?

April 2012 Minutes & Action Items

- **PDC Update – Eric Becks**
 - PDC is changing the focus to do small product runs capability
- **Engineering Program Update – David Baumann**
 - Mission, Goals & Objectives – were reviewed
 - Good discussion about this topic, like adding GD & T to the core of ME and adding CAD to core of EE/CE
- **Senior Projects – Jim Devaprasad**
 - Reviewed senior projects history
 - Reviewed this years projects
 - Summer Camp – Overviews, requested sponsorship from IAB for students
 - Asked for IAB help in grading the 2012 spring presentations
- **Closing Remarks – Nathan**
 - Review the meeting, touched on highlights
 - Proposal on the Schools needs?
 - Mock interviews
 - Student Interactions
 - Adding value to the college and students

Chair's Report

Nathan Callaghan

- Snyder Engineering Scholarship
- Spring Election (Chairman)

Charlie Snyder Engineering and Technology Memorial Scholarship

Charles H. (Charlie) Snyder Industrial Advisory Board Engineering and Technology Scholarship

Current balance: \$51,985.53

Name: The name of this endowment shall be the *Charles H. (Charlie) Snyder Engineering and Technology Memorial Scholarship*.

Purpose: Established to provide financial assistance and recognition to students entering LSSU in engineering and technology majors, this endowment is named in memory of Charlie Snyder of Delco Electronics. Charlie's years of leadership on the Industrial Advisory Board (IAB) and unsurpassed contributions to LSSU engineering and technology and its students left an indelible mark. Charlie had an infectious enthusiasm and brought skill, experience and understanding to LSSU senior project students.

Charlie Snyder Engineering and Technology Memorial Scholarship

Donor: This named endowment was established through the efforts of the LSSU School of Engineering and Technology faculty, students and IAB. Representatives for the endowment are the faculty, students and IAB.

Amount: This named endowment shall be established with gifts reaching the minimum endowment level of \$10,000. **The principal of this endowment shall be held intact in perpetuity, and only the income shall be utilized each year for the purposes of the endowment. Additional contributions to the endowed principal may be made at any time.**

Value: The income from the endowment will produce one scholarship each academic year. Its value will be a maximum of \$500.

The income from the endowment will produce a quantity and value of scholarships determined by the School of Engineering and Technology.

Charlie Snyder Engineering and Technology Memorial Scholarship

Custody**of Funds:**

Funds in this special account may be commingled with other funds for investment purposes. Investments shall be made to bring a good return, consistent with sound and safe investment procedures. The LSSU Foundation, as trustee of this account, shall keep records of all activities in this named account and shall make periodic reports to the donor. The *Charles H. (Charlie) Snyder Engineering and Technology Memorial Scholarship* shall be part of the annual audit of the LSSU Foundation.

Eligibility:

A successful candidate:

- ◆ Must be an incoming freshman or transfer student enrolled at LSSU by April 1 of the current academic year.
- ◆ Must be majoring in engineering or engineering technology.
- ◆ Must have a high school or transfer GPA of 3.0 or higher.
- ◆ Incoming freshman must also have a high school ACT score of 22 or higher.
- ◆ This scholarship is non-renewable.

Selection**Committee:**

The scholarship recipient is chosen by the Financial Aid Committee based on scholarship selection criteria, developed in conjunction with the LSSU Engineering and Technology faculty and the representative(s) of the IAB.

Publicity:

Publicity is approved and encouraged in regards to this endowment and to all future gifts. Publicity is also encouraged upon allocation of funds from the income on this named endowment.

Charlie Snyder Engineering and Technology Memorial Scholarship

Changes: If, in any given year, the scholarship is not awarded, the interest will revert to the endowment for awarding the following year. If changes at the University make the purpose as designated no longer applicable, the LSSU Foundation, in cooperation with representatives of the School of Engineering and Technology and the IAB may make any revisions to the endowment to meet the intent of the endowment, the intent of the law and the highest priority needs of Lake Superior State University.

Betty J. Youngblood, President
Lake Superior State University

Date

Anne Snyder
Snyder Family Representative

Date

Ray Adams, Dean
College of Engineering and Mathematics

Date

University President, College Dean and IAB Chair can sign updated contract!

IAB Officer Responsibilities & Term Limits

TERM LIMITS

- The term of each office shall be two calendar years.
- The terms of Chairman and Secretary shall expire on alternate years.
- No more than 2 consecutive terms are allowed.
- There is no limit to the number of non-consecutive terms.
- Election shall be by a majority of the members present at the spring meeting.
- The term shall pass to the successors at the end of the spring meeting.
- Communication of all necessary information is the responsibility of the exiting officer.

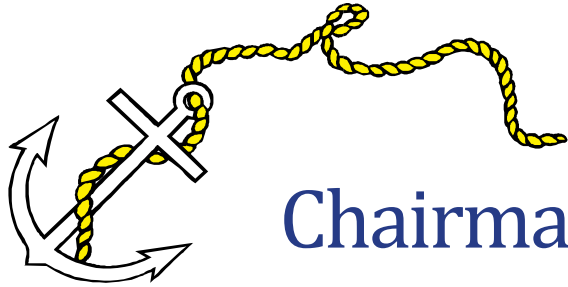
IAB Officer Responsibilities & Term Limits

COMMENTS:

- The smooth operation of this small organization will depend on communication.
- Forms of correspondence: Phone, Fax, E-mail, Letters, etc..
- To facilitate hand-offs, a format should be consented upon for electronic applications.

Chairman Responsibilities

- It is the Chairman's responsibility to oversee all of the activities of the IAB, including coordinating committees.
- As the need arises, the Chairman shall appoint committee chairpersons.
- The Chairman is an ex-officio member of all committees and is eventually responsible for the completion of all committee business. He/She shall keep in touch with all committee chairs, facilitate the completion of their task, and if necessary, remove inactive committee chairs / members and appoint successors.
- The Chairman is directly responsible for the IAB meetings.
- Meeting Responsibilities include:
 - Establish meeting dates, locations and times (coordinate with Dean of Engineering)
 - Arrange meeting facility
 - Finalizing meeting agendas
 - Presiding over meeting



Chairman Election – Spring 2013

Nomination Process:

- Any existing IAB members are eligible
- Self nominations are acceptable
- If you are nominating another member, please be sure that they are willing to participate
- All nominations will be accepted and presented at the spring IAB meeting
- Any questions – please contact one of the existing IAB officers

The Nominees Are:

- _____
- _____
- _____

Recruitment Subcommittee Report



2012 FALL MACRAO EVENTS

Trevor Swenson

Over the Summer

- Transition from Chris and building new relationships with Jeanne and Susan Camp
- MACRAO calendar updated, tech related schools targeted
- Query sent to IAB membership for Fall 2012 MACRAO event volunteers.

IAB MACRAO Participation

- IAB participated in and supported (7) 2012 Fall MACRAO events.
- Traverse City area not attended
- (10) Skate Fenders purchased and sent to Admission counselors (*Thanks to Jeanne and Eric/David @ PDC*)
- Feedback received and improvements being planned for future events

IAB MACRAO Participants

Fall 2012

- Trevor Swenson/Dr. Baumann/Paul Duesing
- Don Stephanic
- Fred Berg
- Jim Gibbs





LSSU Skate Fender

Designed by LSSU Engineering Students working at the
PDC (Product Development Center)



Why Engineering at LSSU?

OPPORTUNITIES

- Hands-on emphasis
- Taught by faculty
- Average engineering and technology class size of 15
- Best undergraduate robotics facility in North America
- Nearly 100% job placement
- Product Development Center
- Green Energy projects
- Co-ops and Internships
- SAE Baja
- Professional organization competitions
- FIRST® Robotics mentoring
- FIRST® LEGO® League mentoring/tournament

Bachelor's of Science:

- Computer Engineering
- Electrical Engineering
- Mechanical Engineering
- Electrical Engineering Technology
- Manufacturing Engineering Technology
- Engineering Management
- Industrial Technology

Options:

- Robotics & Automation
- Control Systems
- Electrical/Mechanical
- Digital Systems

Minors:

- Electrical Engineering
- Mechanical Engineering
- Robotics Technology

Associate's:

- Electrical Engineering Technology
- General Engineering
- General Engineering Technology
- Manufacturing Engineering Technology

www.lssu.edu/eng



LAKE SUPERIOR
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School of
Engineering & Technology

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Highlights

- Seems to be more interest in LSSU and higher event attendance this year than last.
- MACRAO events expanded to Illinois, Wisconsin and Indiana
- Engineering recruiting cards and Skate Fender well accepted.
- Summer camps are still in high demand

Lowlights

- High turnover within Admissions, little time for training
- Few questions or interest in scholarships (limited knowledge)
- Students undecided, don't have good grasp on difference between Engineering and Technology programs
- LSSU is **still** a **major unknown** in the field of engineering and technology.

Thoughts/Sharing

- Added Skate Fender visual aid, other options? (Baja replica deemed too expensive)
- Are MACRAO events the best use of our time in attracting engineering and technology students to LSSU?
- Plan Staff/IAB visit to classroom?
- Freshmen enrollment is up this year from previous

Opportunities for improvement

- Update pictures on Engineering brochures (dated CRT monitors replaced)
- Ongoing improvements with recruiting card
- Provide list of Engineering Job examples?
- Use Social Media / LSSU App
- More training / collaboration with Admission counselors
- Visit Ontario schools and career fairs

...in closing

- Sue Camp is retiring Nov 30th, Has been with LSSU for 36 years, 18 of which have been with Admissions (9 as the director)
- Need to work with Sue and replacement to help ease transition, build new relationship
- The Spring 2013 MACRAO events, soliciting help once again from members

THANK YOU

- A Special **THANK YOU** to Jeanne for the continued help and support during my transition
- A Special **THANK YOU** to all of the IAB members that contributed and supported the Fall 2012 MACRAO events. Your support is greatly appreciated and I hope that we can continue to support future events.
- IAB participation in **MACRAO** events is a very **UNIQUE** and **POSITIVE INFLUENCE** on student choice.

School of Engineering & Technology Updates

Dr. David Finley

Dr. David Baumann

Dr. Andrew Jones

Dr. Robert Hildebrand

Dr. David Finley, Dean | College of Business & Engineering

SCHOOL OF ENGINEERING & TECHNOLOGY

Dr. David Finley, Dean | College of Business & Engineering

PRODUCT DEVELOPMENT CENTER UPDATES

Financial Health

- 5 Year Business Plan submitted April 1, 2012
- YTD average invoicing of \$16K per month
- Greater emphasis on external sources of funding
- Synergy with SSMart and LSSU School of Business
- Focused on projects that fully utilize our resources
- Over 180 projects to date

Recent Project Samples

- Release of 4th Skate Fender product
- Innovative Composites, Inc. – 15th testing project
- Orthopedic surgical tools now in production phase
- Software & circuit board development
- Marine accessory
- Electric vehicle development
- Rapid prototyping – automotive industry

Dr. David Baumann, Chair | School of Engineering & Technology

IAB SUPPORT & LAB NEEDS

Support from IAB

- **Recruiting**
- **Hiring**
 - Permanent Full-Time
 - Internship or Co-op
- **Senior Projects**
- **Interaction with Students**
 - Senior Project Presentations
 - Mock Interviews (new role)

Support Needed from IAB

- **Curriculum Development**
 - Course and Program Content
 - Assessment and Evaluation (new role)
- **Donations**
 - Charlie Snyder (IAB) Scholarship
 - Support for Labs (extended role)

Immediate Lab Needs

- **Machine Shop**
 - CNC
 - Mill (preferred) or lathe
 - 4-axis (preferred) or 3 axis
 - The newer the better
- **Vehicle Dynamics Lab**
 - Test vehicle for use with dynamometer
 - First priority: Ability to tap into CAN network
 - Second priority: Use for transportation
 - The newer the better

Dr. Robert Hildebrand, Coordinator | ME Department

ME CURRICULAR UPDATES

Response to IAB feedback on GD&T

- **Spring meeting:** IAB felt GD&T should be in core
- **New plan** (effective F '13):
 - will require EGME240 in *General Option*
 - already in *Vehicle Systems Option*
 - will offer as a choice in *Robotics Option*
 - not previously an allowed choice
 - harder to see relevance there
 - no robotics industry feedback for it

Changes for this year (effective F '12)

- **EGEE280** Signal Procession : 3 cr → 4 cr
(in Vehicle Systems Option)
- **Coop course sequence**, net 1 cr increase
 - EGNR450: 2 cr → 3 cr
 - EGNR451: 2 cr → 4 cr
 - EGNR250: 2 cr → no longer req'd.
- **Eliminate unintended** credit subtotal requirements
- **Establish** (however) a 32-cr Math/Nat.Sci/Numerical Methods subtotal requirement (in alignment w/ABET)

Thermal-Fluids lab expansion

- **Upgrades** to EGME432 Thermal-Fluids Lab
 - already concurrent w/ heat transfer
- **New Junior Year Course**
 - concurrent w/ Thermodynamics, Fluid Mech
 - 1 cr lab course
 - EGNR250: 2 cr → no longer req'd.
- **Allocated \$6k for lab upgrades**
- **Dr. Herescu to champion**

Dynamometer Upgrade

- (senior project addressing)



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Senior Projects

Prof. Jim Devaprasad, Coordinator

Senior Projects

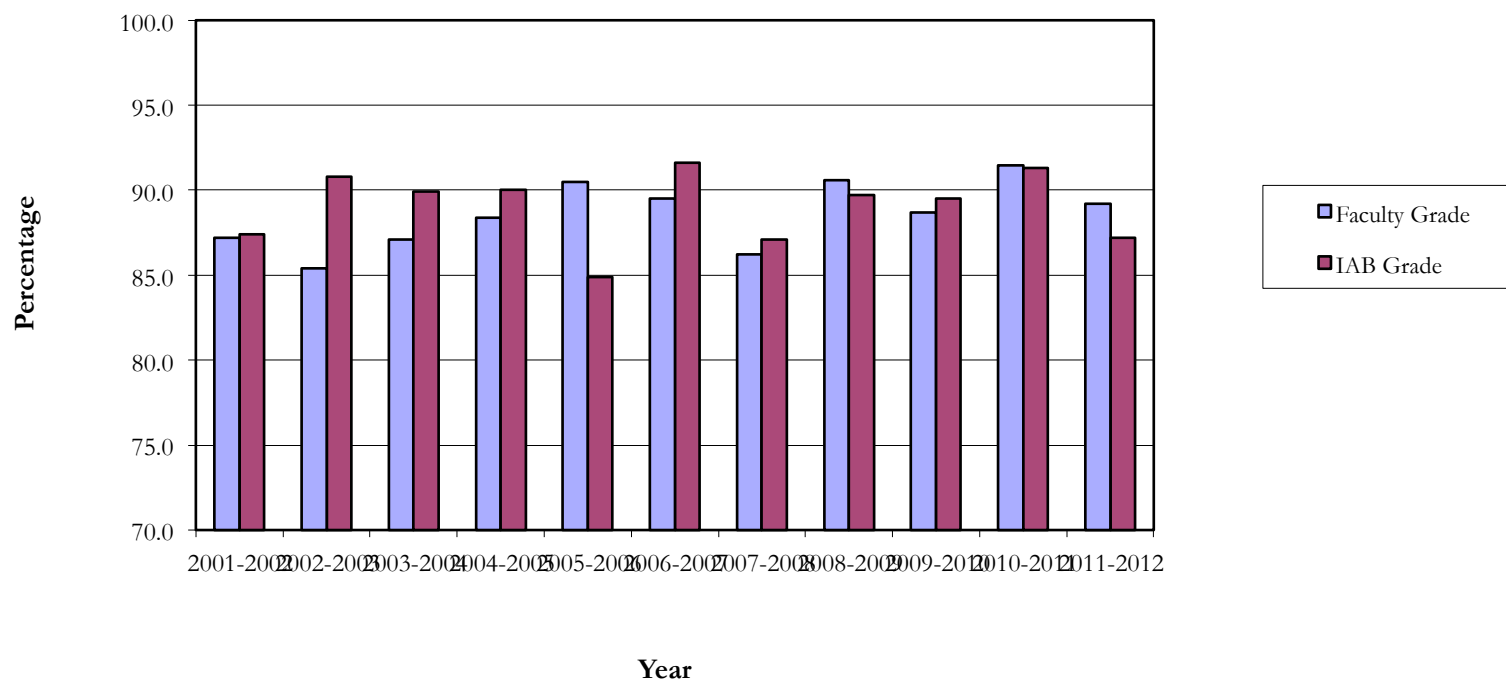
- Last Year's Projects
- Results Of Faculty And IAB Grading
- Current Projects
- Final Presentations (April 26, 2013)
- Philosophy & Key Elements

2011-12: 5 Projects

- **3D Scan, Modeling and Simulation (EOS)**
Create a process that simulates a marine asset (example: a ship) so that maintenance, rebuild, and overhaul (MRO) projects for the asset can be planned and implemented efficiently.
- **Design & Prototype Hose Reel for Forklifts (Superior Fabrication)**
Design a hose reel for forklifts that will be either a single function (two hoses) or twin function (four hoses), left handed or right handed model. Thereafter, analyze and test a prototype.
- **Concentrated Photovoltaic System (3M)**
Optimization and improvement of the prototype solar array system designed by the 2010-11 senior project team ISS. The system uses 3M's Cool Mirror Film.
- **Mini-baja Race Vehicle (LSSU)**
Upgrade of the Mini-Baja vehicle that will involve repairing the front steering geometry, improve serviceability and robustness of drive train assembly, and optimize vehicle performance using the LSSU chassis dyno.
- **Robotics System Integration (LSSU)**
Design and build a robotics workcell using the extruded aluminum platform donated by AMT. The final demonstration project will showcase the integration of a robotics system with robotics tooling, system flow controller, and machine vision.

2011-12: Grading

IAB and Faculty Grades of Senior Projects Final Presentations



2012-13

Senior Year Projects

- **Industry Sponsored Projects (3)**
- **LSSU Sponsored Projects (1)**

2012-13 SENIOR PROJECTS

Concentrated Photovoltaic System

Company.....3M

Contact.....Tim Hebrink

Advisor.....Paul Weber

Team..... 1 CE, 1 EE, 3 ME

Budget\$9,000

Description:

Design, build, and testing of a prototype window module that contains solar cells to allow for both transmission of light as well as electrical energy generation.

2012-13 SENIOR PROJECTS

Design & Simulate Noise Abatement System

Company..... Essar Corporation

Contact..... Chris Janssen

Advisor..... Robert Hildebrand

Team..... 3 ME

Budget \$6,000

Description:

Measure, analyze and propose noise control measures to mitigate the community noise footprint of the Essar Steel Mill in Sault Ste. Marie, Ontario.

2012-13 SENIOR PROJECTS

Robotics System Integration

Company..... LSSU (*Project Sponsor – AMT*)

Contact..... Jason Markesino

Advisor..... Jim Devaprasad

Team..... 1 EE, 1 ME, 2 MET

Budget \$12,000

Description:

Design, simulate, and implement a robotics workcell using 4 Fanuc robots (3 of which are new) on a rotary index table. Workcell will be showcased by a demonstration project.

2012-13 SENIOR PROJECTS

Upgrade Dyno System and Create CAN Trainer

Company..... LSSU Engineering

Contact..... Robert Hildebrand and Jon Coullard

Advisor..... Dave McDonald

Team..... 1 EE, 2 ME, 1 MET

Budget \$6,000

Description:

Expand the data acquisition and analysis opportunities of the LSSU's dynamometer. Also, design and build an instructional CAN trainer to aid students in understanding CAN networks.

REQUEST FOR FEEDBACK

2012-13 Final Presentations

- Held Same Day As Spring IAB Meeting
(Friday, April 26, 2013)
- IAB Evaluations Of The Final Presentations
– Valuable Assessment of Student Outcomes
- IAB Feedback On The Quality Of The Projects

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

Meet & Greet Senior Project Students

- Jacob Black
- Mike Brown
- Chris Dalpra
- Joseph Douglas
- Erik Miller
- Matthew Wagner
- Jordan Verdelli

Lunch

Mock Interviews & Feedback

- (2) 20-minute interviews
- 20-minute feedback session
 - See form for feedback information

Closing Remarks

Thank you!

Nathan Callaghan

Next meeting: April 26, 2013 | LSSU Campus