In Memory
of Adil Shafi

August 29, 1962 – April 4, 2014
WELCOME! IAB Members, Faculty & Guests

New Family Addition
Sierra Avery Rosalie Kars
March 12, 2014

Agenda Review
Secretary’s Report
Review Fall Meeting Minutes

Lynnette Eding
Chairman’s Report

Steven Kars

Secretary Election
Secretary Election

Need the membership to vote for a Secretary to serve for the next two years at Spring Meeting
IAB Officer Responsibilities and 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.

Comments:

• The smooth operation of this small organization will depend on communication.
• Forms of correspondence:
  ▫ Phone
  ▫ Fax
  ▫ E-mail
  ▫ Letters
• To facilitate hand-offs, a format should be consented upon for electronic applications.
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: you can contact the existing IAB officers.

The Nominees Are:
• Lynnette Eding
• ____________________
• ____________________
• ____________________
Spring 2014 Engineering Recruiting Update

May 2nd, 2014
LSSU IAB Meeting
Over the REALLY LONG Winter

- Regular meetings with subcommittee members
- Regular meetings with Admissions
- National Engineering Month (March)
- FIRST Robotics Events
- MACRAO Events
Local Events

- National Engineering Month (March)
  - Station Mall, Ontario
- Student Competitions
- Handouts / Buttons
- Sault College partnership
- White Pines
  - VEX
  - 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
MACRAO Highlights

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

- Ontario stats healthy positive trend
- MACRAO event IAB representation?
- FRC event IAB representation?
- More onsite school visits
- Sault College Bridge Program
- Engineering Newsletter
- Focus on Exit Strategy?
  - 100% placement rate?
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, Petosky, others??)
Admissions Update

Al Case
### By The Numbers

#### Engineering and Technology

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More Numbers

- Orientation 2013 – 377
- Orientation 2014 – 430
- Engineering 2013 – 40
- Engineering 2014 - 39
Where We’ve Been

- MACRAO, WEF, IACAC, NACAC, HS Visits
- FRC: 3 in 2013 vs 8 in 2014
What’s New

Analytic Solutions for Higher Education

Use your data to drive decisions across the entire student lifecycle. Predict which inquiries and prospects are likely to apply, which applicants are likely to enroll, which students are at risk of attrition, and which alumni are likely to donate. Find out why hundreds of colleges and universities from across the country have turned to Rapid Insight for their predictive analytics, data analysis and reporting needs.

Enrollment Modeling    Student Retention Modeling    Prospect/Inquiry Modeling    Institutional Research    Community Colleges    Law Schools and Graduate Schools
### What's New

#### Campaign Report

**F14 NU Last Shot**  
[Show Details]

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#### Most Popular Clients

- 35.77%
- 15.45%
- 11.11%
- 19.24%
- 18.24%
- 2.17%
- 2.44%
- 2.44%
- 5.15%
- 2.98%
What’s New

Combined Staff Experience: 4.5 Years.
Senior Advisor: 3 years.
Remaining Staff: 0 months, 8 months, and 3 months.
Vacancies: 4
Other Ways to Help

- Continued Event Participation
- Stationary Notes
- Phone Calls
College of Business & Engineering Updates

David Roland Finley, Ph.D., P.E. Dean
Agenda

- Placement of May 2014 Graduates
- Fall 2014 Recruiting Status
- List of “Good Things”
- Lambda Epsilon Eta/Order of the Engineer inductions
- PDC Search—Asst. Engineering Projects Mgr. (ME)
- South Hall Renovation Project
- Robotics Lab Expansion Plans
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

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1.081 1.075
Fall 2014 Recruiting Status

- **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
## Fall 2014 Recruiting Status

### Summer Orientation Registrants

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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
LSSU’s 8th President – 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.
University teams up with Michigan Works! for workforce retraining
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
Order of the Engineer Induction
PDC Search—Asst. Projects Mgt. (ME)
SOUTH HALL RENOVATION—from SE
SOUTH HALL RENOVATION—from North
LAKE SUPERIOR STATE UNIVERSITY
SAULT STE. MARIE, MICHIGAN
(PROPOSED CASET ROBOTICS LAB BUILDING ADDITION)

EAST ELEVATION

IDI ARCHITECTURE ENGINEERING CONSULTING
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
Engineering Technology Enrollment

Enrollment by Major

Number of Students

Fall Semester

2006 2007 2008 2009 2010 2011 2012 2013

EET MfgET Other Total
### ACT Scores of Fall 2012 SET Admitted Students

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<th>Average All ACT Score = 24.2</th>
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<td>Retained</td>
<td>25</td>
<td>21</td>
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**Legend:**
- **All = 100**
- **Enrolled = 42**
- **Retained = 25**

**Additional Information:**
- All with ACT Scores = 89
- Average All ACT Score = 24.2
- Enrolled with ACT Scores = 33
- Average Enrolled ACT Score = 24.5
- Retained with ACT Scores = 21
- Average Retained ACT Score = 25.2
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Proposed Admission Standards (3 of 3)

First Time In College

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<td>AS: GE</td>
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<tr>
<td>No</td>
<td>AS: GET, EET, MfgET</td>
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</table>

→ Yes →

Ineligible for entrance into any program in the School of Engineering and Technology

Transfer

| 19 Earned University Credits Placement into ENGL-110 (passed ENGL-091) Placement into MATH-131 (passed MATH-111) |
| 19 Earned University Credits Placement into MATH-102 passed MATH-088 |
| No |
| No |

Ineligible for entrance into any program in the School of Engineering and Technology
Electrical and Computer Engineering Updates

Dr. Andrew Jones, ECE Coordinator
Changes

• **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 Electronics
  • Concentration for EE or CE (future for ME)
  • **Feedback**
Changes

• **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
  1. Promote Sustainable Energies Concentration
     › Need your help
  2. Offer mobile robot courses
  3. Develop Podcasts of successful projects to post
  4. Create 2-2 with community colleges

• Build relationship with teachers/counselors
• Feedback
Mechanical Engineering Updates

Dr. Robert Hildebrand, ME Coordinator
ME Search for Spring 2014

“Introducing” David Leach!
(alright – pardon the drama –
you may know him already!)

David will be teaching CNC/CAM, solid modeling,
Statics/Strength of Materials, manufacturing processes,
eventually Quality, and other things.
ME Search for Fall 2014

- 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

Dr. David R. Finley
2013-14 Senior Project Evaluations

Prof. Jim Devaprasad
# 13-YEAR SENIOR PROJECTS HISTORY

## IAB Connection

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<th>Year</th>
<th>EG495 Projects (Total)</th>
<th>EG495 Projects (IAB)</th>
<th>EG461 Projects</th>
<th>EG461 Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-2002</td>
<td>15 projects ($427,334)</td>
<td>11 projects ($364,645)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002-2003</td>
<td>6 projects ($89,129)</td>
<td>4 projects ($62,032)</td>
<td>2 projects</td>
<td>$27,500</td>
</tr>
<tr>
<td>2003-2004</td>
<td>5 projects ($153,000)</td>
<td>3 projects ($77,000)</td>
<td>3 projects</td>
<td>$32,000</td>
</tr>
<tr>
<td>2004-2005</td>
<td>4 projects ($146,000)</td>
<td>2 projects ($21,000)</td>
<td>4 projects</td>
<td>$19,500</td>
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<tr>
<td>2005-2006</td>
<td>4 projects ($54,000)</td>
<td>2 projects ($44,000)</td>
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<tr>
<td>2006-2007</td>
<td>6 projects ($68,700)</td>
<td>3 projects ($51,500)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007-2008</td>
<td>5 Projects ($53,000)</td>
<td>2 Projects ($28,000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008-2009</td>
<td>7 Projects ($41,000)</td>
<td>1 Project ($11,000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009-2010</td>
<td>6 Projects ($109,000)</td>
<td>1 Project ($20,000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010-2011</td>
<td>5 Projects ($28,000)</td>
<td>1 Project ($10,000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011-2012</td>
<td>5 Projects ($24,500)</td>
<td>N/A</td>
<td>$0</td>
<td></td>
</tr>
<tr>
<td>2012-2013</td>
<td>4 Projects ($35,000)</td>
<td>N/A</td>
<td>$0</td>
<td></td>
</tr>
<tr>
<td>2013-2014</td>
<td>7 Projects ($48,200)</td>
<td>2 Projects ($11,600)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>79 (~$1,276,000)</td>
<td>32 (~$701,000)</td>
<td>9 $79,000</td>
<td></td>
</tr>
</tbody>
</table>
2013-14 Senior Year Projects

CURRENT PROJECTS

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

Brake Pedal Testing System

Contacts.........Dan Goodrich, Travis Smith
Advisors.........Dave McDonald and David Leach
Team..............1 CE, 2 EE, 1 ME
Budget ............$7,600 ($15,000 – materials cost for duplication)

Description:
Automation of brake testing process by controlling the position of the pedal and how much force is applied.

Status: Completed
Contact..........Adil Shafi
Advisors.........Paul Weber and Jim Devaprasad
Team............. 2 EE, 2 ME, 1 MfgET
Budget ..........$4,000  ($43,000 – materials cost for duplication)

Description:

Proof of concept system to mimic an automated grocery bagger using a robot, a machine vision system, and a versatile gripping device.

Status: Completed
Company.........Mactech, Red Wing, MN
Contacts.........Sam Schammel, Paul Rulach, Joel Wittenbraker
Advisor.........David Baumann
Team............... 2 CE, 1 EE, 2 ME
Budget ...........$24,000
Description:

Development of a self-leveling system to decrease the machining tolerance of a large facing machine from 0.015” to 0.005” using a laser measurement system.

Status: Completed
CURRENT PROJECTS

Locomotive Onsite Communication Initiative

Company........Essar, Sault Ste. Marie, Ontario
Contacts.........Dennis Cesarin, David Clingen
Advisor.........Joe Moening
Team...............2 EE, 2 ME
Budget ..........$1,600 ($25,000 – materials cost for duplication)
Description:

Testing of a position sensor system to serve as a proximity warning system for locomotives operating in harsh environmental conditions during the coke making process.

Status: Completed
CURRENT PROJECTS

Liquefied Natural Gas Bunkering Barge

Company..........Moran Iron Works, Onaway, MI
Contacts..........Victor Ruppert
Advisor..........Robert Hildebrand
Team.............4 ME, 1 MfgET
Budget ..........$3,500

Description:

Feasibility study and conceptual design of a bunkering barge that would refuel Great Lakes vessels. Study included simulation and wave tank experiments.

Status: Completed
CURRENT PROJECTS
Robotics Fluid Dispensing with Machine Vision

Company .......... Pre-tec, Eugene, OR
Contact .......... Jeff Johnston
Advisor .......... Jon Coullard
Team ............ 1 CE, 1 EE, 1 EET, 2 ME
Budget .......... $1,500 ($120,000 – materials cost for duplication)

Description:
Design and implementation of a robotics system to simulate the dispensing of a wood filler product into railroad ties. System uses machine vision and custom end-of-arm tooling.

Status: Completed
Company........3M, Maplewood, MN
       Little Traverse Conservancy, MI
Contacts........Tim Hebrink and Charles Dawley
Advisor..........Jaskirat Sodhi and Paul Weber
Team.............2 EE, 2 ME, 1 MfgET
Budget ..........$6,000 ($12,000 – materials cost for duplication)

Description:
Design and build of a two window-based solar systems using 3M window film to reflect near infrared light onto photo-voltaic cells for increased power output and windowshading.

Status: To Be Completed in 1 Week
PRESENTATIONS AND DEMONSTRATIONS

Presentation Schedule

- **Presentations**
  - 1:30, 2:00, 2:30, 3:00, and 3:30 in CAS212 & CAS123

- **Demonstrations**
  - 2:00, 2:30, 3:00, 3:30, and 4:00 in CAS, and 3:30 in the SmartZone Building

- **LSSU Engineering Faculty solicits, values, and utilizes IAB evaluations of the presentations**
IAB Evaluations

- Evaluation forms
- Provides “external evaluation” (ABET)

Guidelines:
- Look for ownership, professionalism
- Technical competence via questions
- Target audience is “grandmother”!

Turn in at Video Camera or faculty member – Please don’t leave evaluations with the students.
2014-15 Senior Project Proposals

Prof. Jim Devaprasad
REQUEST FOR 2014-2015 PROJECTS

Course Status

- ~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
REQUEST FOR 2014-2015 PROJECTS

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
REQUEST FOR 2014-2015 PROJECTS

Submission of Proposals

- Send by July 15, 2014, to Jim Devaprasad
- Project Proposal Form Available
- Please Submit Proposals!
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
  - IAB Input?
Closing Remarks
Next Meeting

Steven Kars