

# Welcome

MIE Industrial Advisory Board  
May 5<sup>th</sup>, 2011

# IAB 2010-2011

- David K. Anderson
  - Alden Research Laboratory, Inc
- Paul Banks
  - B2Q Associates
- Paul Benoit
  - Sensata Technologies
- Srinivasa Chandresekaran
  - Sensata Corporation
- Caroline Down-Lyons
  - Pratt & Whitney
- Gary Epstein
  - Enery and Resources Solutions, Inc
- Tom Lyden
  - The Gillete Company
- Dr. Michael Mahoney
  - Saint-Gobain Corporation
- Rajesh Nair
  - Degree Controls Inc
- Martin Ross
  - UTC Power
- Dr. Laura Smith
  - General Dynamics Corporation
- John Stuart
  - PTC
- Paul Wasburn
  - Seagate Technology

# Chancellor's Citation Award

The intent of the Chancellor's Citation Award is to recognize and honor benefited University staff members who have demonstrated outstanding performance in contribution their time and/or skills in helping the University achieve its goals and objectives.

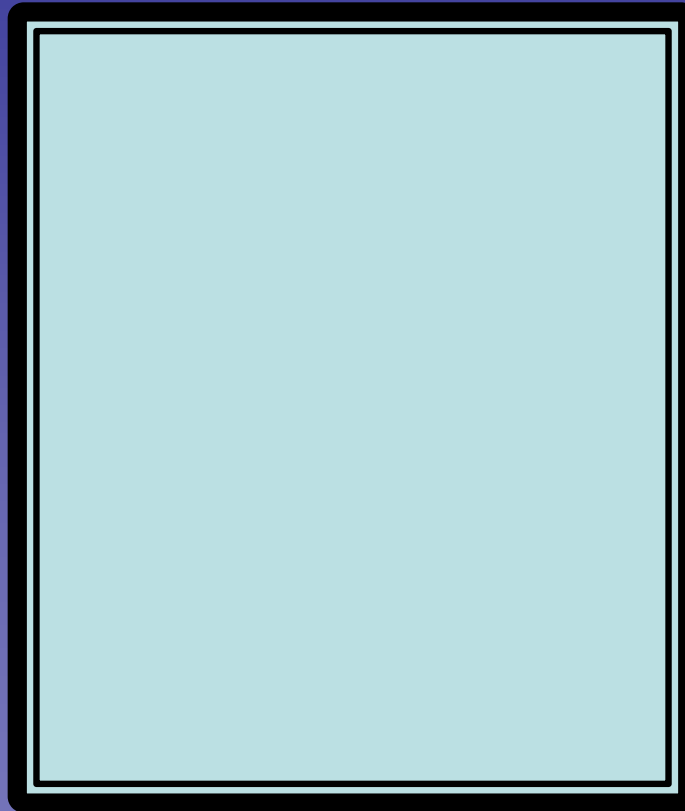


**Dorothy Adams**  
**Undergraduate/Graduate**  
**Secretary**

Only 10 awards  
university wide

# 21<sup>st</sup> Century Leader

The award recognizes graduating seniors who have demonstrated exemplary standards of achievement, initiative and social awareness.



Only 11 awards university wide

Caitlin Bogdan  
ME 2011

# Jack Welsh Scholar

Recognizes  
leadership  
and  
executive  
ability



Only 2 awards  
university wide

**Joseph Bliss**  
**ME 2011**

# Hiring

- Over 200 applications
- Seven interviewed
- One candidate clear favorite
- Negotiations went on for three weeks

# Reza Shahbazian Yassar



**Mechanical & Industrial  
Engineering**

# Accomplishments

- Publications
  - 38 peer reviewed articles
  - 3 book chapters
- Grants
  - Over \$1M in external funding
  - PI, NSF, A new perspective on energy harvesting nanowires
  - PI, NSF, MRI, Acquisition of an in-situe AFM/STM-TEM system



# Nanoscale Materials for Energy Harvesting and Storage

The demands for renewable energy and improving the efficiency of existing energy technologies have triggered worldwide research on advanced materials for energy storage and conversion. The present talk gives an overview on the PI's current research on energy harvesting nanowires, Li-ion batteries, and PEM fuel cells. In energy harvesting nanowires research, we have studied the electrochemical coupling in piezoelectricsemiconducting nanowires from both modeling and in-situ quantitative microscopy perspectives. In Li-ion battery work, we have studied the application of Si nanowires and developed a new experimental setup to study the Li-ion intercalation into nanowires. The last, electro-mechanical characterization of degraded and fresh electrode-membrane assembly was performed to understand the Pt degradation and durability of cathode catalyst layer in PEM fuel cells.

# Research

- Proposals
  - NSF Engineering Research Center (ERC)
  - NSF Integrated Graduate Education and Research Training (IGERT)
  - NSF Science and Technology Center (STC)
- Value added
  - Support for 10-20 graduate students
  - New faculty lines

# ERC (COWE)

- \$50M over ten years
- MIE Faculty Leads
  - Jim Manwell, Matt Lackner
- Steps
  - Preproposal
  - Proposal
  - Site visit
  - Reverse site visit

# IGERT (Wind Energy)

- \$10M over 5 years
- MIE Faculty Leads
  - Erin Baker, Matt Lackner
- Steps
  - Preproposal
  - Proposal
  - Funding...

# STC (CSIDE)

- \$50M over ten years
- MIE Leads
  - Fisher, Marquard
- Steps
  - Preproposal

# Alumni Relations: Presence

- MIE Website
- LinkedIn
- Facebook
- MIE Newsletter

# MIE Webpage (1)

UMassAmherst

People Finder

Search UMass Amherst

Go



[About Us](#)

[Faculty](#)

[Research](#)

[News](#)

[Undergraduate Students](#)

[Graduate Students](#)

[Alumni & Community](#)

[Industry](#)



[Giving to Mechanical & Industrial Engineering](#)



## News

[ABC 40 Airs Video Story on Team ZoomMass](#)



# MIE Webpage (2)

UMassAmherst

People Finder

Search UMass Amherst

Go



[About Us](#) [Faculty](#) [Research](#) [News](#) [Undergraduate Students](#) [Graduate Students](#) [Alumni & Community](#) [Industry](#)



**Giving to Mechanical & Industrial Engineering**

## News

**ABC 40 Airs Video Story on Team ZoomMass**

**Mechanical & Industrial Engineering**



# MIE Webpage (3)

UMassAmherst

People Finder

Search UMass Amherst

Go



[About Us](#)

[Faculty](#)

[Research](#)

[News](#)

[Undergraduate Students](#)

[Graduate Students](#)

[Alumni & Community](#)

[Industry](#)



[Giving to Mechanical & Industrial Engineering](#)

## News

[ABC 40 Airs Video Story on Team ZoomMass](#)

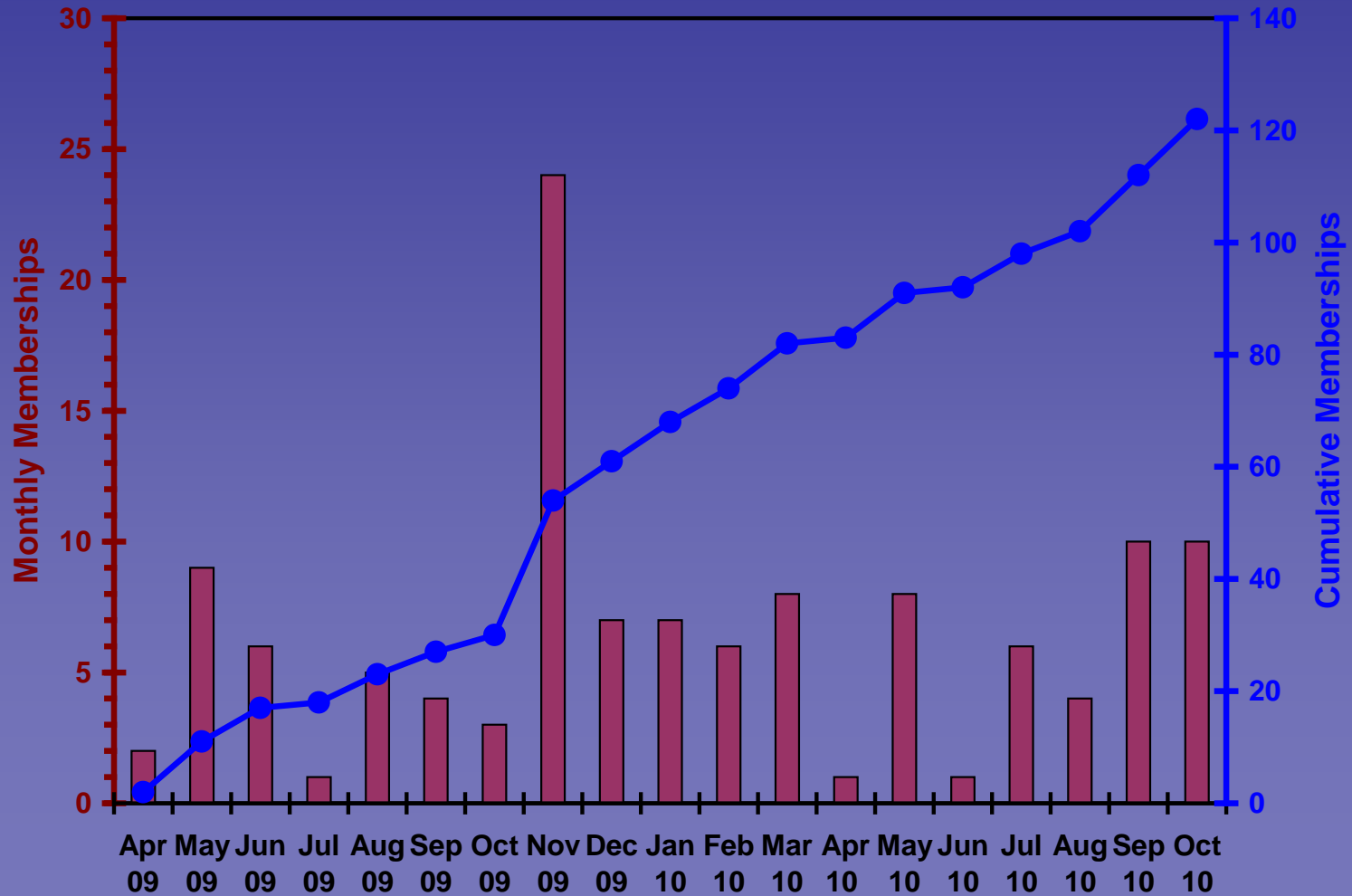
ENGINEERING LAB

Mechanical & Industrial  
Engineering

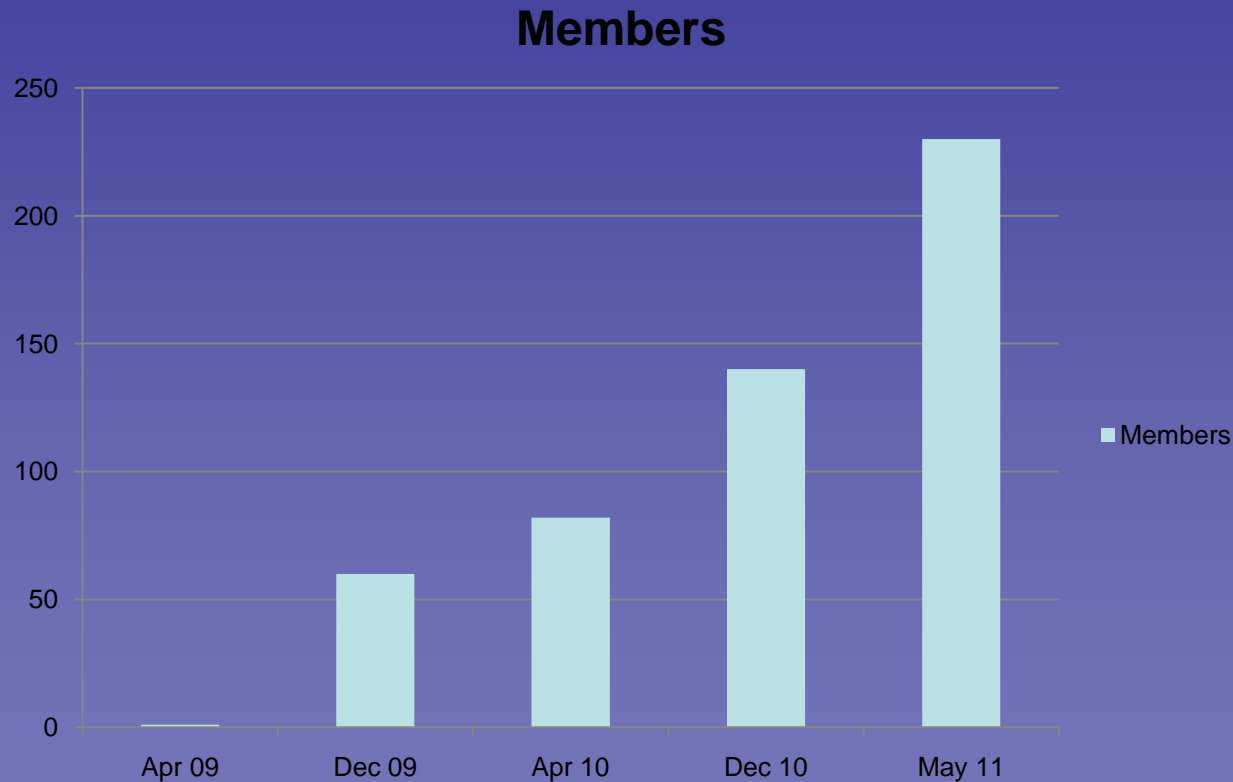
# LinkedIn

The screenshot shows a Windows Internet Explorer browser window displaying the LinkedIn group page for "UMass Amherst Mechanical & Industrial Engineering". The browser's address bar shows the URL: <http://www.linkedin.com/groups?mostPopular=&gid=1891502>. The page header includes the LinkedIn logo and navigation links: Home, Profile, Contacts, Groups, Jobs, Inbox (15), and More... The group name "UMass Amherst Mechanical & Industrial Engineering" is prominently displayed, along with sub-navigation links: Discussions, Members, Promotions, Jobs, Search, Manage, and More... Below the group name, there is a "My Activity" section with a profile picture of a man and a text input field for starting a discussion. The input field contains the text "Start a discussion or share something with the group..." and a "Share" button. To the right, there is a "Manager's Choice" section featuring an announcement from Jennifer Blake. Below this, a "People I'm Following" section shows a post by Paul Hohenberger. The main content area displays a discussion titled "Wearable Robotics" Replace Amputated Limbs | Mechanical and... with options to Like, Comment, Flag, and More... At the bottom, there is a "Most Popular Discussions" section and a banner with the text "Lead Inspire Teach". The Windows taskbar at the bottom shows the Start button and several open applications, including Microsoft Office and Internet Explorer. The system clock indicates the time is 10:45 AM.

# LinkedIn Growth Through October 2010



# Linked in Growth Through 2011



# MIE Points of Pride Newsletter (Fall 2010)



Mechanical and Industrial Engineering Department Points of Pride Newsletter Fall 2010



## Message from Donald Fisher

Head of the Mechanical and Industrial Engineering Department

Dear Students, Staff, Faculty, and Alumni,

I hope that your summer was a good one! I want to welcome students back to campus and wish alumni the best in the coming fall. I know that many of us—faculty and staff, as well as current and former students—don't necessarily hear about the many achievements of our MIE family and so am taking this opportunity to chronicle some of the achievements of the past year. I especially want to thank everyone for making my first year as Department Head such an enjoyable one!

When you have a chance, please read through our Points of Pride. If you would like to add something, please do not hesitate to email me. You can also find out more on our website, [mie.umass.edu](http://mie.umass.edu). In the meantime, enjoy your fall semester.

Sincerely,

Don Fisher, Professor and Head  
[fisher@mie.umass.edu](mailto:fisher@mie.umass.edu)

# MIE Points of Pride Newsletter Spring 2011

- Hot off the presses next week

# Exploratorium



# Fishbowl



**Mechanical & Industrial  
Engineering**



# Ken Lloyd, ME '73



# Exploratorium



# Corporate Relations

- C.R. Bard
  - Tim Collins, IE '86
  - Mentor-Scholar Program
  - Faculty Research Program
- Stayclassy
  - Pat Walsh, ME '04;
  - Nonprofit donations startup

# Teaching, Degrees

- Jim Rinderle

# IAB Infrastructure Initiatives

- Exploratorium
  - Donations
- Innovation Shop
  - Frank Sup

# Student/Industry Initiatives

- Olin

# Dean Search



**Mechanical & Industrial  
Engineering**

# Afternoon: Budget

- Jim Rinderle



# Faculty Retreat

- Maintaining Excellence
  - Hiring new faculty
- Maintaining Synergies
  - Increasing Ph.D. production
- Maintaining Student Focus
  - Undergraduate Teaching Excellence

# Increasing Revenue

- 7 figure solutions
  - ERC, STC, IGERT
- 5 figure solutions
  - Course only master's degree programs
    - Economic incentives
      - ME (WE)
      - IE (EM)
- Role of IAB

# Increasing Visibility

- Increasing PhD production
- Role of IAB

# Increasing Undergraduate Teaching Excellence

- Approaches
  - Technologies
  - Undergraduate Mentor/Scholar Fellowships
  - Graduate student teaching assistants
- Role of IAB
  - Undergraduate Mentor/Scholar Fellowships

# Infrastructure

- Innovation Shop
  - MIE
- IAB contributions