UC San Diego
Jacobs School of Engineering
CORPORATE AFFILIATES PROGRAM

Welcome
CAP Executive Board
Wednesday, September 21, 2016

CAP CHAIRMAN

David Hadacek

Director of Package and Systems Engineering, Solar Turbines

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Congratulations
Team Internship Program (TIP) Students

60 Companies – 93 Teams – 328 Students

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Welcome TESC Leadership

Triton Engineering Student Council (TESC)

Leadership

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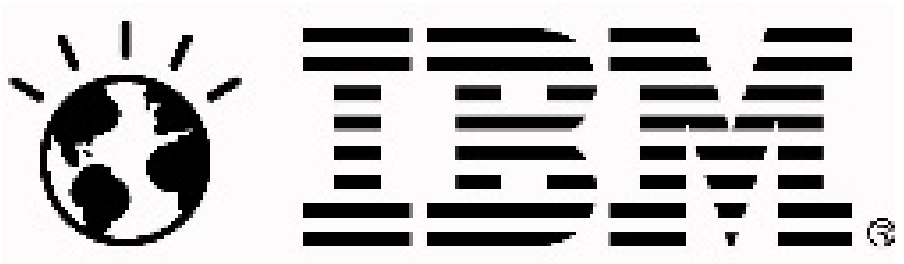
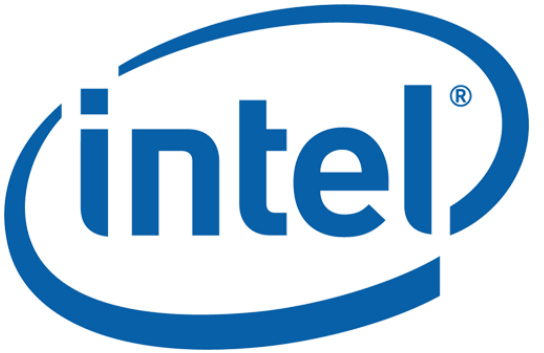
Welcome New CAP Members





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DEAN'S BRIEF

Albert P. Pisano

Dean, Jacobs School of Engineering

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Securing Excellence

We are Building the Digital Future

- Wearable sensing, diagnostics, and treatments via 5G wireless
- Zero-carbon energy and transportation systems
- Robotic home care based on real-time context and communication
- Cybersecure infrastructure built with smart materials
- Optimized human and environmental microbiomes
- Global real-time environment and climate monitoring

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Collaboratories to Enable the Digital Future

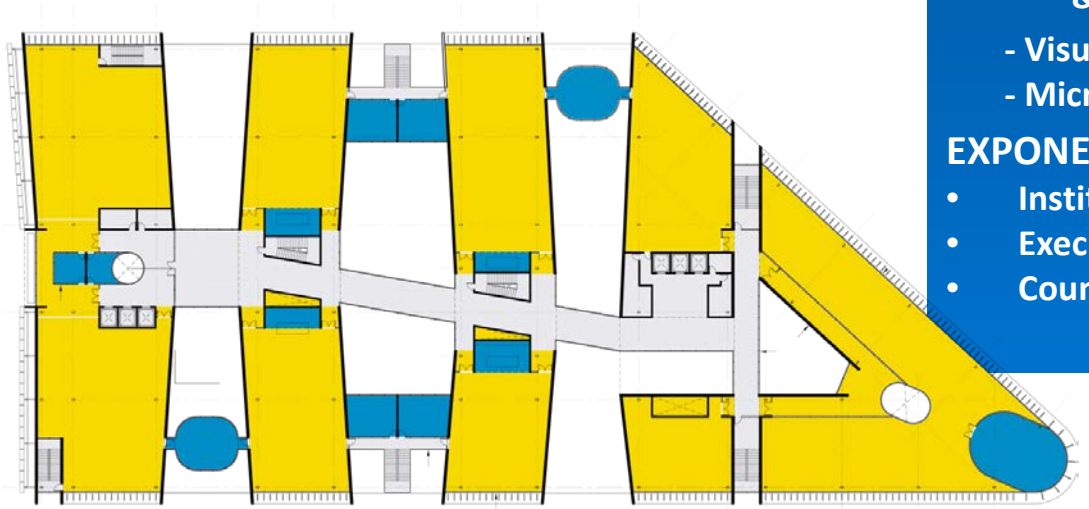
- Collaboratories - Innovative facilities group key research programs with strategic industry partners
- Makes the realization of the real-time data revolution possible

KEY RESEARCH PROGRAMS

- Contextual Robotics Institute
- Data Science Institute
- Deep Decarbonization Initiative
- Microbiome and Microbial Sciences Initiative
- Jacobs School Agile Research Centers
  - Wearable Sensors
  - CHO Systems Biology
  - Sustainable Power & Energy
  - Advanced Artificial Intelligence
  - Visual Computing
  - Resilient Materials Systems
  - Microbiome Innovation
  - Extreme Events

EXPONENTIAL IMPACT

- Institute for the Global Entrepreneur
- Executive Education Programs
- Council of Strategic Industry Partners



Yellow: Research Collaboratories
Blue: Meeting & Lounge Areas

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Hacking for Defense (H4D)

What is (H4D)?

Class students learn how to work with the Department of Defense (DoD) and Intelligence Community (IC) to better address the nation's emerging threats and security challenges

Solving problems nominated by the National Security Community

Using Lean LaunchPad methodologies & the Mission Model Canvas

Supported by a diverse community

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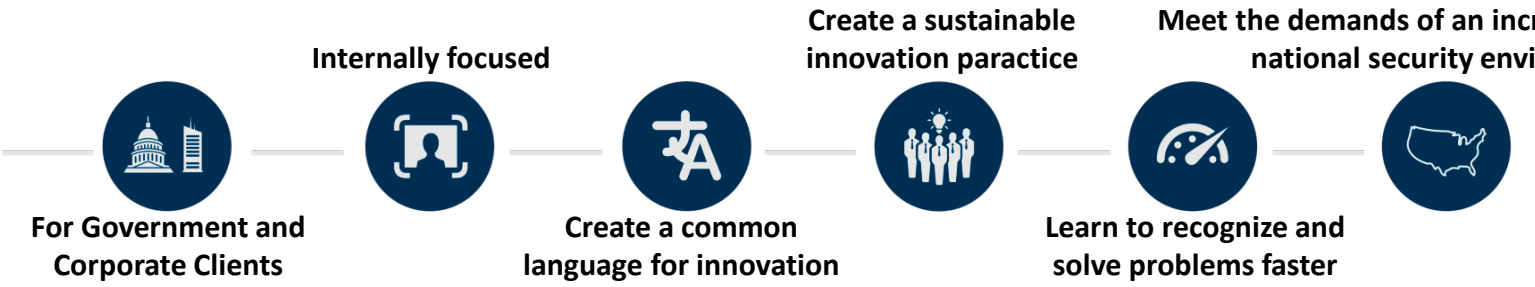
Why are we doing this?

- GOAL 1: Government innovates at "Silicon Valley" speed to address pressing national security problems
- GOAL 2: DoD and IC Community gains an untapped pool of technical and creative resources eager and able to provide immediate solutions to real world problems
- GOAL 3: Help close the civil-military gap by providing an opportunity for technologists and the military to work closely together on solving hard problems
- GOAL 4: Create an opportunity for technologists to perform National Public Service

Leverage Relevant Industry Methodology

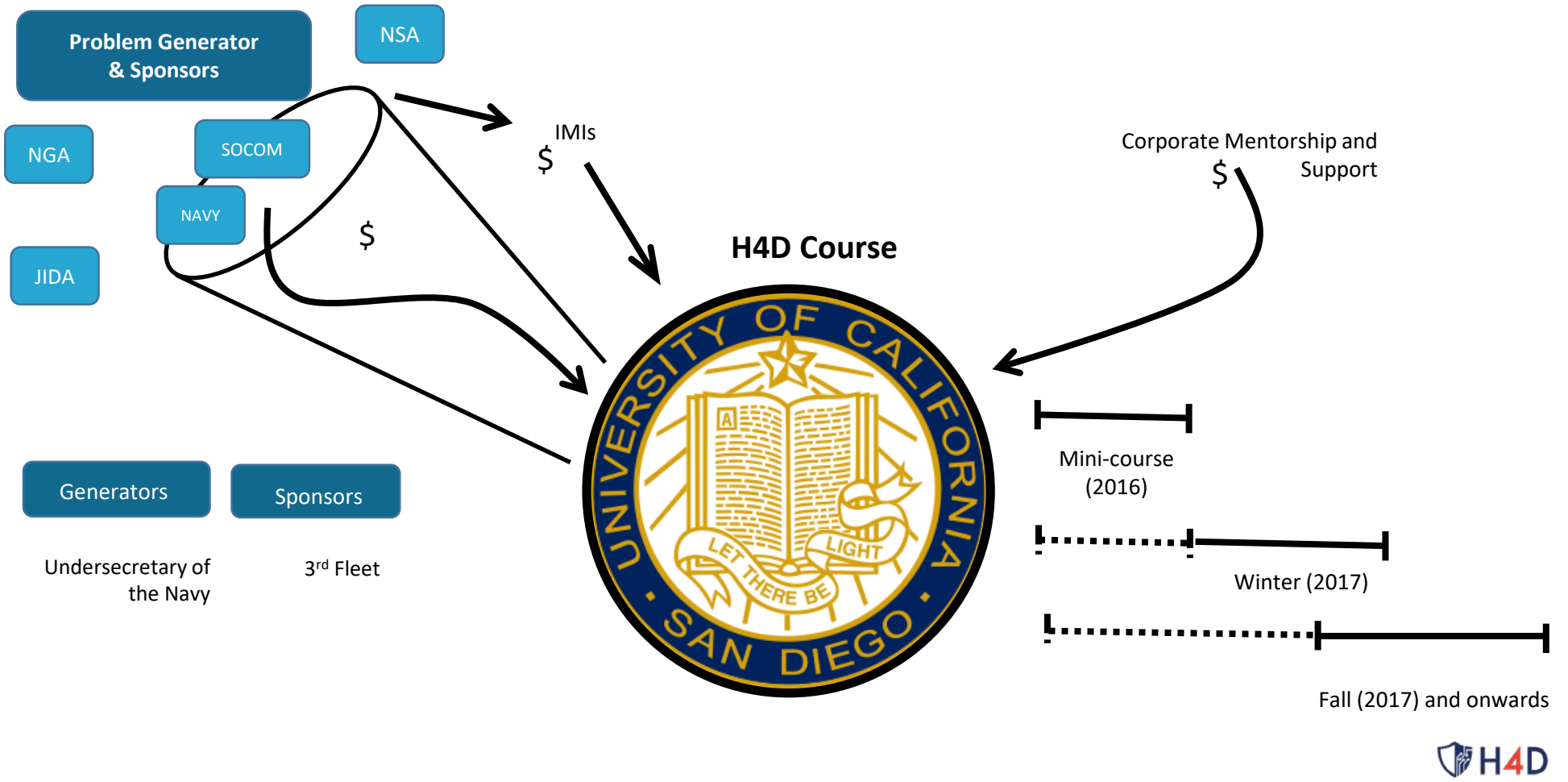


Mission Model Canvas

Partners	Activities	Value Proposition	Buy-in / Support	Beneficiaries
Who are our key partners? Suppliers? What are we getting from them? Giving them?	What key activities do we need to be experts in?	How are we solving each stakeholder's pains/gains? How? What product/service features match their needs?	How does the team get "Buy-In" from all the beneficiaries?	Who are our most important stakeholders? What are their pains/gains? What job do they want us to get done for them?
	Resources What key resources do we need to own or acquire? Financial? Human?		**Deployment** How will we deploy the product to widespread use? What constitutes a successful deployment?	

Costs	Mission Achievement
What is the Mission Budget/Cost?	How will we measure Mission Achievement?

H4D at UCSD



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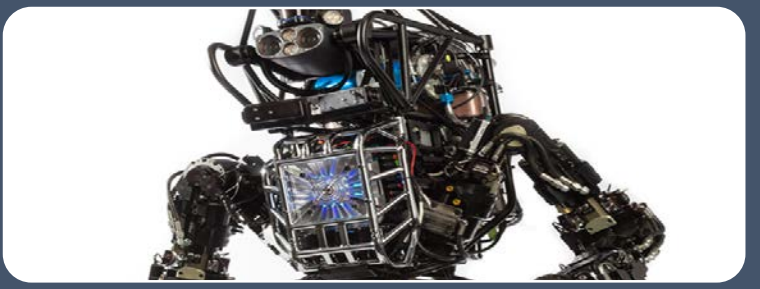
Pilot Problem Sets Driven by Real-World

Defense Against Swarms

Open source robotic components and communication systems are becoming inexpensive and prevalent from commercial sources. Develop proactive and reactive capabilities to protect critical undersea infrastructure from attacks initiated by autonomous robotics swarms.

Robotic Humanitarian Operations



In the event of a large-scale, urban/littoral crisis, rapidly deploy unmanned systems to collect relevant data, identify both friendly forces & protagonists, and use non-lethal force to restore order and prepare traditional forces for follow-on stability operations.

Institute for the Global Entrepreneur

Empowering Engineers to Drive Innovation

A collaboration between the UC San Diego Jacobs School of Engineering and Rady School of Management, dedicated to training global engineering leaders and translating university discoveries to the marketplace.

Sujit Dey
IGE Director
Professor of Electrical and Computer Engineering
Jacobs School of Engineering

Vish Krishnan
IGE Associate Director
Professor of Innovation Technology & Operations
Rady School of Management

INSTITUTE FOR THE GLOBAL ENTREPRENEUR

JACOBS SCHOOL OF ENGINEERING
RADY SCHOOL OF MANAGEMENT

The Institute for the Global Entrepreneur Builds on 16-Year Track Record of Fostering Entrepreneurism and Discovery Translation at UC San Diego

- 100 Teams Trained through NSF I-Corps
- Thousands of students attending graduate courses in leadership and entrepreneurism
- 80 companies launched
- 5 large acquisitions
- 34 active companies
- 500 jobs created
- $220M invested in portfolio companies

INSTITUTE FOR THE GLOBAL ENTREPRENEUR

JACOBS SCHOOL OF ENGINEERING
RADY SCHOOL OF MANAGEMENT

Training influential technology leaders who will drive innovation from concept to commercialization using principles of engineering, business, and practical entrepreneurial thinking

Internal Resources

- Agile Research Centers
- Mentors
- EIRs

Next Generation Technology Leaders

Start-ups with Core Innovation

Education:

Joint Education: Jacobs and Rady
Rady Lab-to-Market
Engineering Leadership, Project Management & Entrerpreneurism Courses
Rady Business and Entreprepreneurism Minors

Training: NSF I-Corps, Hack4Defense

Accelerators

Global Training

External Resources

- Industry Partners
- Strategic Investment Partners
- Incubators

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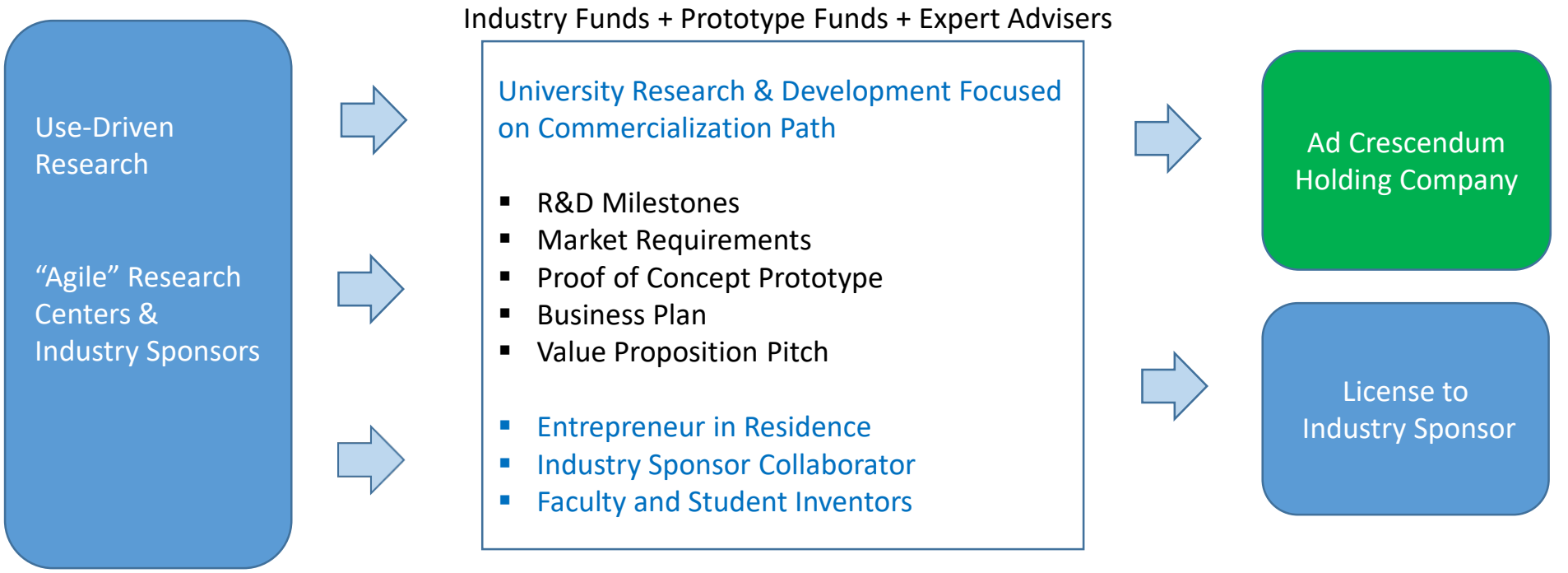
Technology Accelerator

Building a Pipeline of Market-Ready Innovations

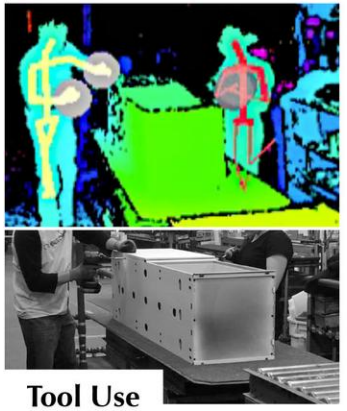


NSF Awards UC San Diego $1Million for Robotics in Manufacturing

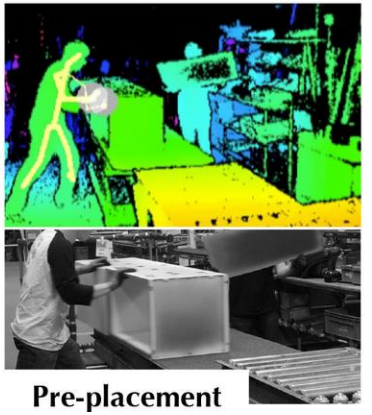
Laurel Riek
Prof. CSE

3-year Contextual Robotics Institute Program

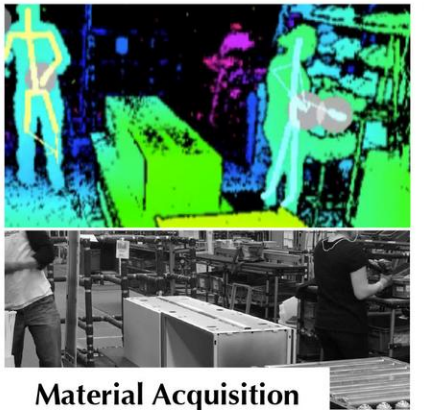
- 'Need-Sensing' materials delivery for increase in productivity
- Support of skilled workers – not replacement
- Est. savings $1.7 Million/Hour



Tool Use



Pre-placement



Material Acquisition

Lifting

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October 28, 2016
Atkinson Hall
8:00AM - 4:30PM

TECH SHOWCASE + NETWORKING

Robotics demos and posters from UC San Diego faculty and students.

REGISTER TODAY

This event will likely sell out.
$100 general

RoboticsForum.UCSD.edu

KEYNOTE SPEAKERS

Henrik Christensen
Director, Contextual Robotics Institute
Computer Science Professor
UC San Diego

Jorge Cortes
Mechanical and Aerospace Engineering Professor
UC San Diego

Frank Dellaert
Technical Project Lead, Facebook
Georgia Tech Professor

James Kuffner
Chief Technology Officer
Toyota Research Institute

Ayse Saygin
Cognitive Science Professor
UC San Diego

Maarten Sierhuis
Director, Nissan Research Center

Raj Talluri
Senior Vice President
Qualcomm

REMARKS

Matt Grob
CTO Qualcomm Technologies

Albert P. Pisano
Dean, Jacobs School of Engineering

Carol Padden
Dean, Social Sciences

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QUALCOMM

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UC San Diego
SOCIAL SCIENCES

QUALCOMM INSTITUTE

jacobsschool.ucsd.edu/contextualrobotics/forum

FACULTY PRESENTATION

Todd L. Hylton

Executive Director, Contextual Robotics Institute

Overview of the Contextual Robotics Institute

UC San Diego: World-Class University

- **We Are:**
  - Student-centered
  - Research-focused
  - Service-oriented
  - Public university

- **One of the top 15 research universities worldwide.**
  - **$150M** in Annual Research Funding Fuel Discoveries

- **#7 Among Public Engineering Schools in the U.S.**
  - U.S. News ranking of Best Global Universities, 2014

- **Largest Engineering School in California**
  - 1,600 Engineers Enter the workforce each year

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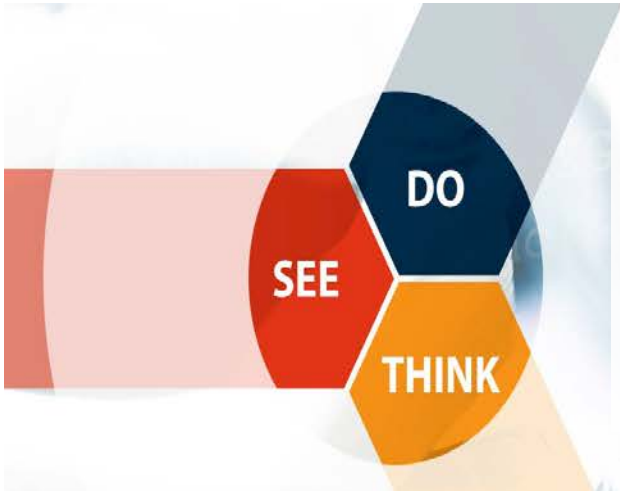
Contextual Robotics Institute Summary



Enabling People with Robotics

Mission: Advance leading edge research in contextual robotic systems and build a talent and innovation pipeline to fuel the emerging robotics industry sector.

- Engineering and Social Sciences
- 42 Faculty Participating
- $10M/year
- Institute Directors hired Summer 2016
- Four Additional Robotics Faculty Hired in 2016
- To Build: Core Labs, Joint Curricula, Integrative Research Projects

- Industry Partners Engaged: Qualcomm, Northrop Grumman, Leidos, IBM, Toyota, WowWee, Intel

- International Forums
  - October 2014
  - October 2015
  - October 2016

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Short Resume

- Contextual Robotics Institute - Executive Director
- Brain Corporation - EVP of Research and Strategy
  - Led contract R&D for commercial and government clients
- DARPA - Program Manager
  - SyNAPSE (neuromorphic computing)
  - Nano Air Vehicle (“hummingbird drone”)
- SAIC – Center Director
  - Nanotechnology and materials team
- 4Wave - Founder and President
  - Specialized thin-film fabrication equipment
- Veeco / CVC / Commonwealth Scientific - R&D management / CTO
  - Process equipment for magnetic / optical / semiconductor devices
- Ph.D. Applied Physics (Stanford), B.S. Physics (MIT)

Contextual Robotics Institute Themes

SENSING + PERCEPTION

- Deep learning and statistical analysis of images and video for object detection, scene understanding and context sensing
- Computational models for recognizing actions and inferring intent and relationships
- Processing of inputs from real-life applications
- Sensing, control and optimization algorithms

COGNITION + COORDINATION

- Distributed decision making and evolution of group behavior despite uncertainty and limited communication
- Embodied Artificial Intelligence
- Synthetic brain architectures
- Methods of coupling high-performance computing and the Internet of Things with local planning and decision making
- Conveying ethical and moral imperatives to robot behavior

MOBILITY + MANIPULATION

- Biologically inspired actuators (limbs) and new materials
- Robust feedback control mechanisms for distributed, noisy, unknown environments
- Models using context to direct safe and appropriate action
- Coordinated fault-tolerant motion of multiple actuators or vehicles despite limited communications and time delays
- Nano- and micro-robotics

Closed-loop, real-world robotic systems.

Jacobs School of Engineering
Robotics Research Areas

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Medical and Flexible Robotics

Medical Robotics
Designing surgical robotic systems for robot-assisted, image-guided surgery

Flexible Robotics
Design and control of snake-like robots for medicine, manufacturing, military

Biomimetic Actuators
Artificial muscles design, modeling and control for active prostheses and orthoses

Dexterous, snake-like robot for navigating within the vessels of the human body for minimally-invasive surgery

Michael Yip
Electrical and Computer Engineering: Advanced Robotics and Controls Lab

Environmental Sensing Swarms

Hundreds of Sensor Balloons

- communicate via cellphones
- release into a developing hurricane; self-distribute; and track the storm over several days while sending data back to forecasting centers

Robotics Controls Challenges

- Balloons steer by using buoyancy control, leveraging winds' strong stratification

Real-time environmental info

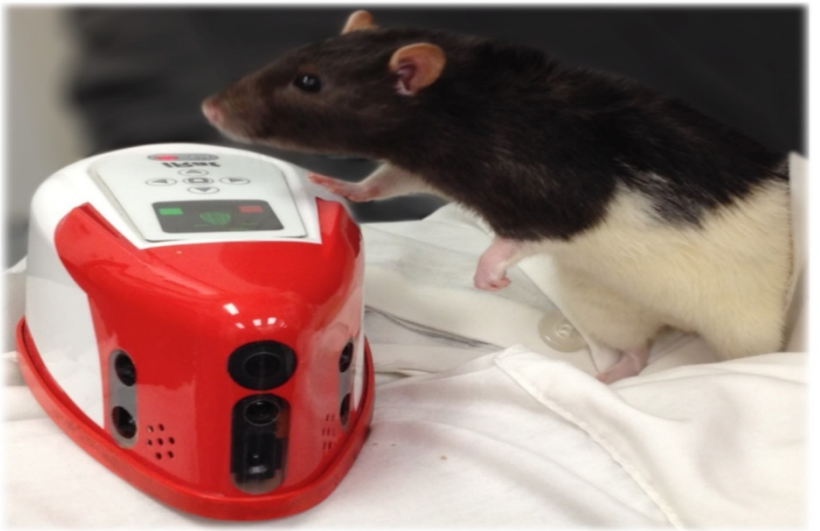
Thomas Bewley
Mechanical & Aerospace Engineering: UCSD Flow Controls Lab

Animal Model for Contextual Robotics

iRat Collaboration
Cognitive scientists + bioengineers

Social neuroscience for robotics

Robot-Mammal Interactions
How does interacting with iRat trigger responses from rats equipped with heart rate, brain function and breathing monitors?



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Andrea Chiba
Cognitive Sciences

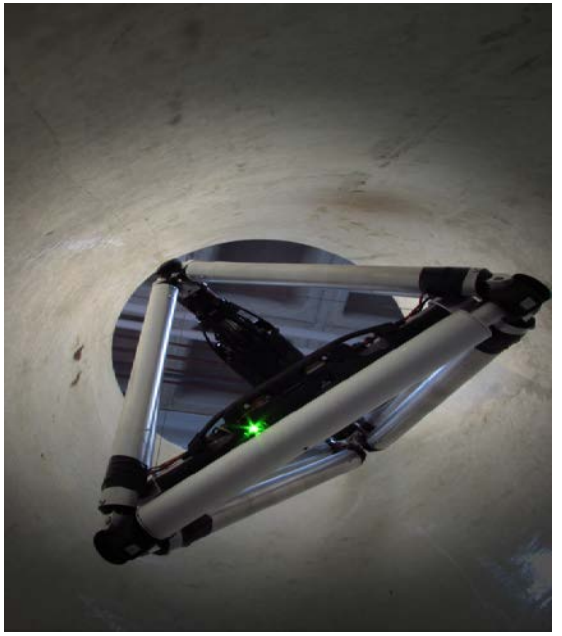
Todd Coleman
Bioengineering

Janet Wiles
U. of Queensland

Tensegrity Duct-Climbing Robot

Student design
Two nested tetrahedra interconnected by actuatable tendons

Batteries, electronics, motors and sensors are embedded within aluminum tubes to shield them from gas or liquid that may be flowing within ducts during the inspection.



DucTT the tensegrity robot

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Jeffrey Friesen (graduate student)
Mechanical and Aerospace Engineering: Tom Bewley's Lab

Real-time Object Recognition

Goal: Real-time classification of 1,000,000 image windows per second

Efficient classifiers that optimize trade-off between object detection accuracy and speed

Applications
Robotics, smart vehicles,
state of the art pedestrian detection

Methods
Cascades of deep learning classifiers learned with boosting

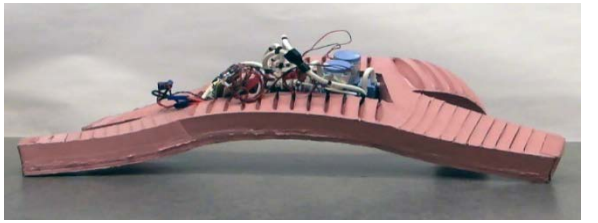
Video: real-time pedestrian detection

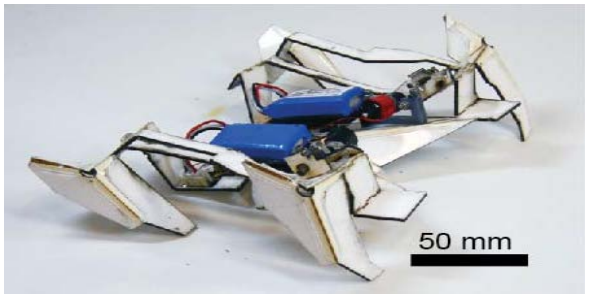
Biologically-inspired Robotics

Autonomous Soft Systems
Functional after getting run over by a truck.

Self-assembly by Folding
Design and control of snake-like robots for medicine, manufacturing, military

Rigid Core to Soft Exterior
Human friendly
3D-printed body





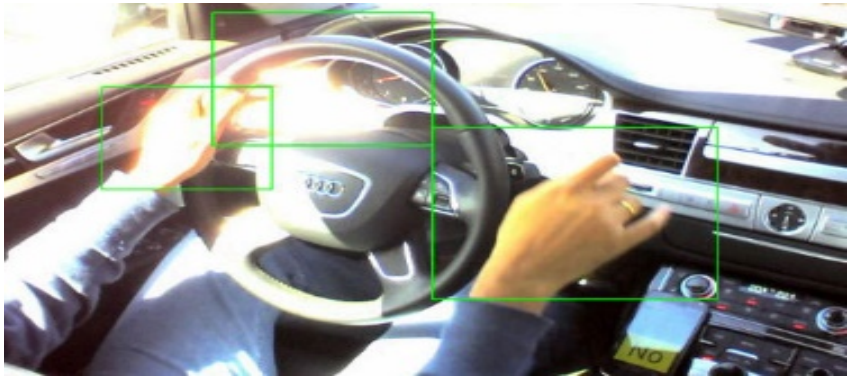
Humanizing Robotic Vehicles

Understand Driver Intention

Algorithms and sensorized vehicles make it possible for an onboard computer to figure out whether the motorist intends to make a left turn, change lanes, etc. — even before the driver starts to do it

In 2017 Vehicles

Intelligent assistance features built in Trivedi lab are planned for rollout in the Audi A8 in 2017



Variations in light make detecting hand movements of a car driver difficult

Human-Swarm Interactions

Humans to Specify Swarm Behaviors for:

- Creating safety perimeters
- Urban search
- Traffic re-routing
- Egress paths for victims
- Situational awareness

UC San Diego Robotics Related Start-ups

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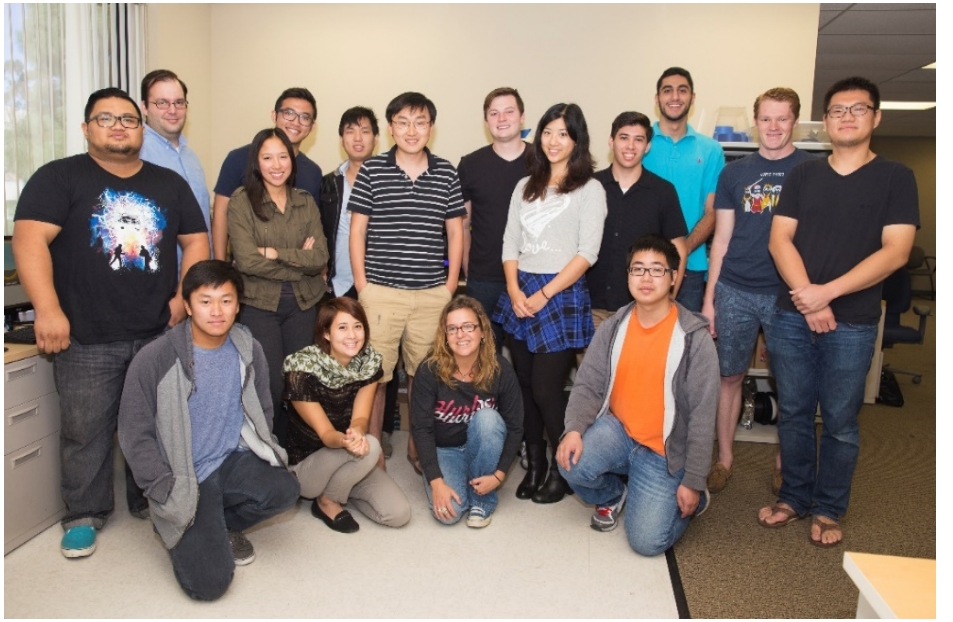
Cognionics

Mobile, real-time, non-invasive human bioelectric sensing



UC San Diego startup: Bioengineering + Electrical Engineering + Cognitive Science

Emotient

Emotient is a leader in emotion detection and sentiment analysis based on facial expressions.

Startup from UC San Diego's Machine Perception Lab

Marian Bartlett (alumna/Prof)
Ian R. Fasel (alumnus)
Javier R. Movellan (researcher)
Gwen Littlewort (researcher)
Jacob Whitehill (alumnus)

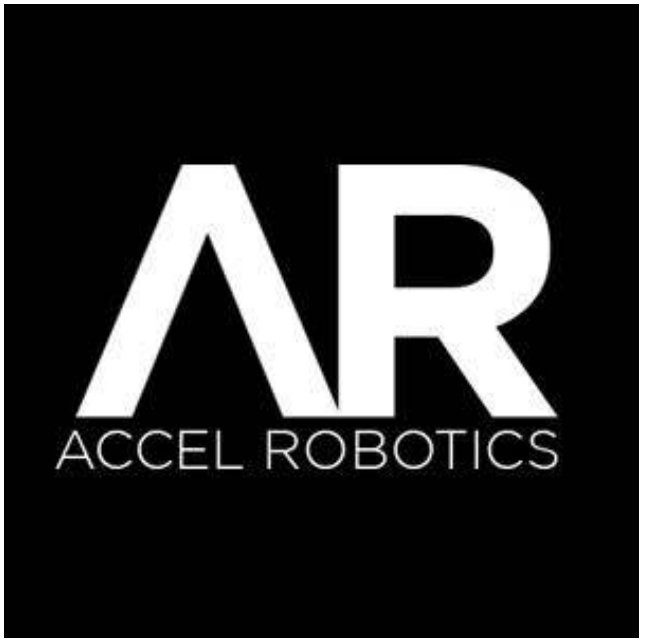
Image credit: Emotient

Accel Robotics

Co-founded by:

Marius Buibas | CEO, Software
Engineer and Neuroscientist, PhD
Brain Corp, HP,
UC San Diego bioengineering PhD

Nick Morozovsky I CTO, Hardware
Robotics Engineer, PhD
WowWee, HP,
UC SD mechanical engineering PhD



Developing a robot photographer

WowWee + UC San Diego

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EcoATM

UC San Diego startup

- The only automated kiosk that collects unwanted or used cell phones, tablets and MP3 players for instant cash

RoboLink

UC San Diego robotics education startup

Develops/provides robotic kits and instruction to students in grades 4-12

UC San Diego Contextual Robotics Institute Forum

October 28, 2016

Speakers

Henrik Christensen
Director, Contextual Robotics Institute
UC San Diego

Jorge Cortes
Professor, MAE,
UC San Diego

Meet world leaders developing ubiquitous consumer robotics for the benefit of society.

Connect with San Diego's robotics community.

Explore the technology showcase.

Frank Dellaert
Technical Project Lead, Facebook
Professor, Georgia Tech

James Kuffner
Chief Technology Officer
Toyota Research Institute

Remarks

Ayse Saygin
Professor, Cognitive Science
UC San Diego

Matt Grob VP and CTO
Qualcomm Technologies, Inc.

Carol Padden
Dean, Social Sciences
UC San Diego

Maarten Sierhuis
Director, Nissan Research Center

Raj Talluri
Senior Vice President
Qualcomm

Albert P. Pisano
Dean, Jacobs School of Engineering
UC San Diego

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Conclusion

We are building a world class robotics hub in San Diego

- World class university
- Outside world recognizes our effort
- San Diego has all the components to host the ecosystem
- The innovation is happening here
- New start-ups happening all the time
- Local major industry supports the hub

The future looks bright!

Thank you!

Todd L. Hylton
Executive Director, Contextual Robotics Institute
Professor of Practice, Electrical and Computer Engineering
thylton@ucsd.edu

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FACULTY PRESENTATION

Truong Nguyen

Chairman and Professor of Electrical & Computer Engineering

Bringing the “E” back to Electrical & Computer Engineering

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Electrical and Computer Engineering

ELECTRICAL AND COMPUTER ENGINEERING UC SAN DIEGO 1965-2015

E?

Excitement? **Energy?**

Bringing the Engineering back to ECE

Engineering is the application of mathematics, empirical evidence and scientific, economic, social, and practical knowledge in order to invent, innovate, design, build, maintain, research, and improve structures, machines, tools, systems, components, materials, processes and organizations.

Why?

Hands-on curriculum improves engineering student retention

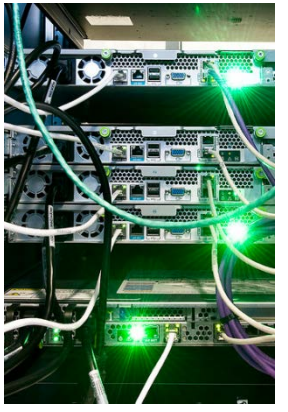
Teamwork & communication skill are important in industry

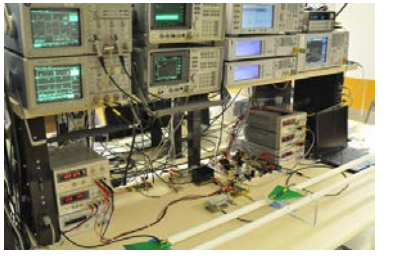
ECE Statistics 2016-17

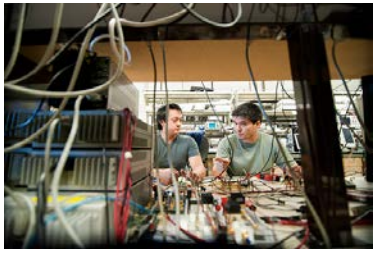
- **Faculty:** 53
- **Funding:** annual research expenditures: $28M
- **Graduate enrollment:** 650 (390 MS + 260 PhD, largest graduate program at UC San Diego)
- **Undergraduate enrollment:** 1290

- **Ranking:**
  - U.S. News and World Report: 15
  - Academic Ranking of World Universities: 10

Core ECE Areas and Programs







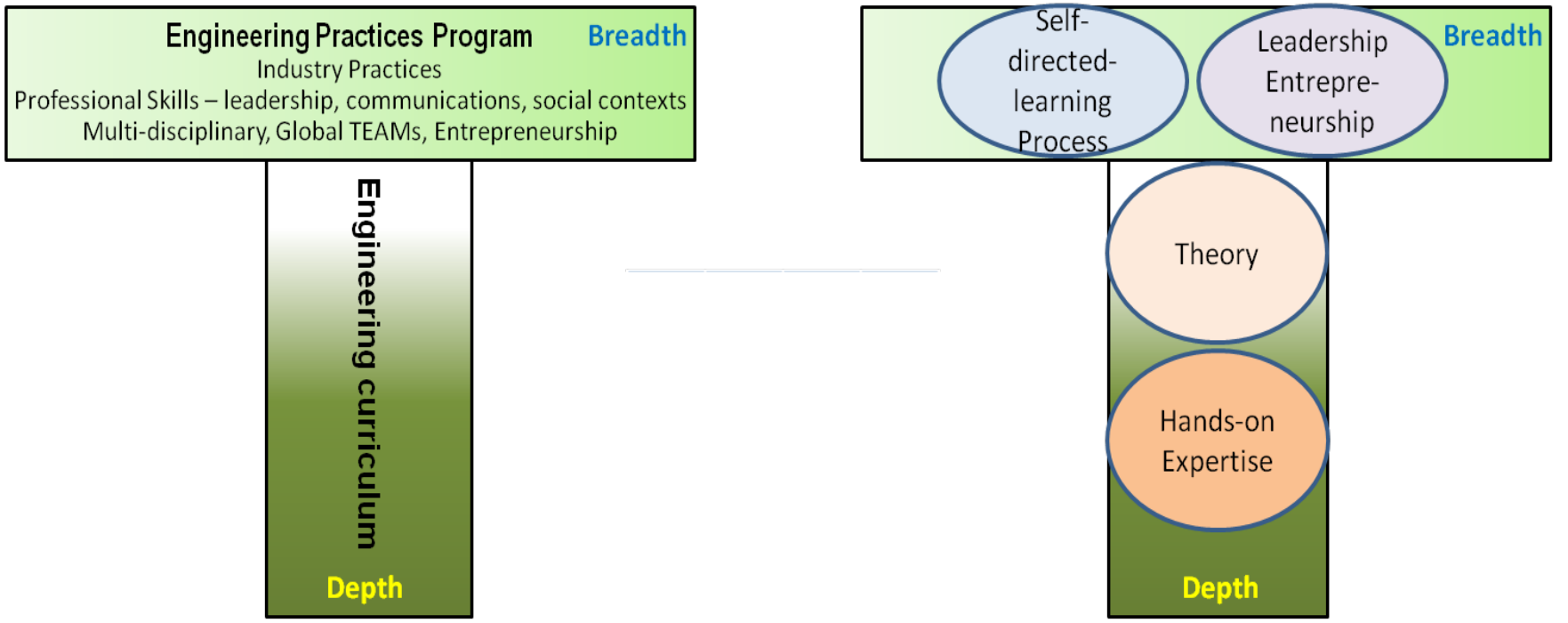
Core Areas:

- Communication Theory and Systems (CTS)
- Computer Engineering (CE)
- Electronic Devices and Materials (EDM)
- Electronic Circuits and Systems (ECS)
- Photonics (PHO)
- Intelligent Systems/Robotics/Control (ISRC)
- Signal and Image Processing (SIP)

New Graduate Programs:

- Nanoscale Devices and Systems
- Medical Devices and Systems

“Complete” Engineer @ UCSD



If you can dream it, you can build it

How?

T A E Jany 3 1888

Things doing and to be done.

Cotton Picker
New Standard Phonograph
Hand turning phonograph.
New Slow Speed cheap Dynamo.
New Expansion Pyromagnetic Dynamo.
Deaf Apparatus
Electrical Piano
Long distance standard Telephone transmitter which employs devices of recording phonogr
Telephone Coil of Fe 6 yds in Paraffine or other insulator
Platina Point Trans using new phono Recorder devices
Grid Battery for Telephones
" " " " Long distance
" " " " Phonoplex
" " " " Jump telegraph
" " " " Volt meter,
Improved Magnetic Bridge for practical work
Motograph Mirror
" Relay
" Telephone practical.
Artificial Cable
Phono motor to work on 100 volt ckts
Duplicating Phono Cylinders
Deposit in Vacuo on Lace, gold & silver
also on Cotton Woolen Chemical compound of lustrous
surface to imitate silk - also reg plating system
Vacuum Ore milling Longe Machine,
Magnetite Seperator Longe "
Locking Material for Iron sand.

Bringing the E back to ECE

Envision – JSOE
Maker Space

Freshmen & Sophomore
Project Course

ECE 5 (Making, Breaking and Hacking Stuff)
ECE 16 (Rapid Hardware & Software Design)
ECE 115 (Fast Prototyping)

ECE
Maker Space

Junior & Senior
Project Course

ECE 191 (Senior Capstone)
ECE196 (Project-in-a-Box)
Two IoT Systems Courses

UC San Diego
Electrical and Computer Engineering
JACOBS SCHOOL OF ENGINEERING

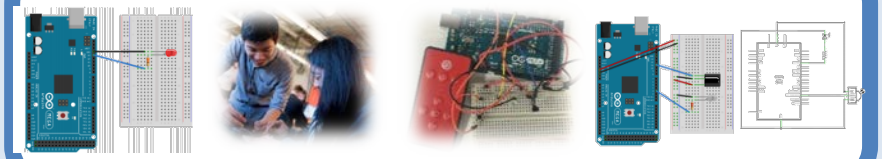
ECE 5 - Introduction to ECE for Freshmen
"Making, Breaking and Hacking Stuff"

Motivation | Analog Circuits | MATLAB | Control | Soldering | Function Generators | Op-Amps | Sensors | Arduino Microcontrollers | C Programming | Signal Processing | Oscilloscopes | Motors | 3D Printing | Confidence

Lab 1: Communication

Objective: Communicate using light by programming microcontrollers with sensors and LEDs

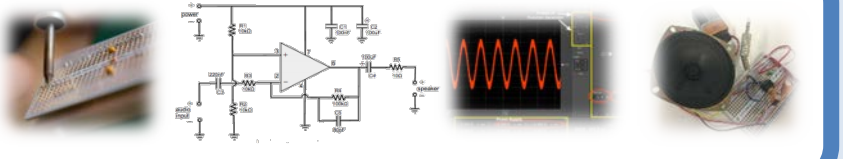
Skills Acquired: C programming, building circuits from diagrams, LEDs, infrared, Arduino microcontrollers



Lab 2: Analog Circuits

Objective: Create an audio amplifier with analog circuits understanding Time vs Frequency domains

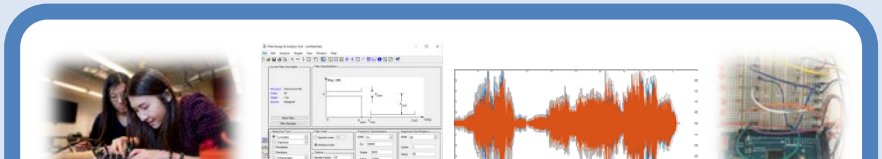
Skills Acquired: Soldering, power sources, function generators, oscilloscopes, RC circuits with op-amps



Lab 3: Digital Signal Processing

Objective: Digitally sample and filter audio signals extending signal processing techniques w/ computers

Skills Acquired: Matlab programming and tools, Fourier transforms, analog to digital conversion



Lab 4: Systems and Control

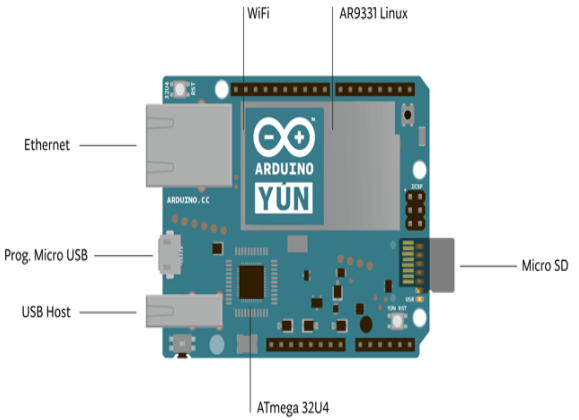
Objective: Build a line following robot using Arduino microcontrollers to implement PID control

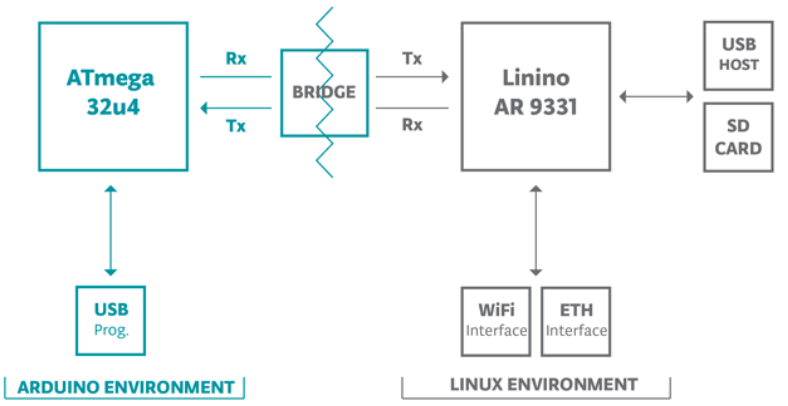
Skills Acquired: Basic control theory, motor drivers, more C programming & soldering, sensors, DC motors

ECE 5 – Winter 2016

ECE 16: Rapid Hardware & Software Design

- **Introduce students to embedded systems concepts with the structured "hands-on" development**
- **Concepts: Real-time, sampling, communication, basic signal processing**
- **Technical skills: Microcontroller programming (apply C from ECE15), Python programming**
- **3 individual labs building up to group "project"/competition**





Real-time
Arduino Sketches
(C based language)

High-level OS Operations
(File System, WiFi)
Python based API

ECE 16: Rapid Hardware & Software Design

Final Competition

- EMG based controller
  -> Head-to-head video/robotic game competition
- Individual labs build up the software infrastructure of the controller
- Teams will combine code and customize individual controllers

$50/muscle

ECE 115: Fast Prototyping

This **hands-on design** course teaches students, via a **course-long project (Pinball Machine)**, how to prototype a mechatronic as quickly as possible, covering the following practical topics:

- cheap/accessible materials, adhesives, fasteners, and supplier
- fast prototyping techniques (laser cutting / 3D printing)
- sensor and actuator design using base components
- fast assembly and system integration shortcuts.

With no templates or designs given, the students learn fundamental prototyping skills enabling them to realize cheap, robust, and well-designed mechatronic systems in through rapid-fire prototyping iterations.

Equipment:
Mechanical: laser cutter, 3D printer(s), power tools *Electrical:* function generators, oscilloscopes, multimeters, soldering stations

"This class was a blessing. I learned so much. It was fun, super hands on, and the best part is that I have learned so much that it makes me feel confident as an engineer."

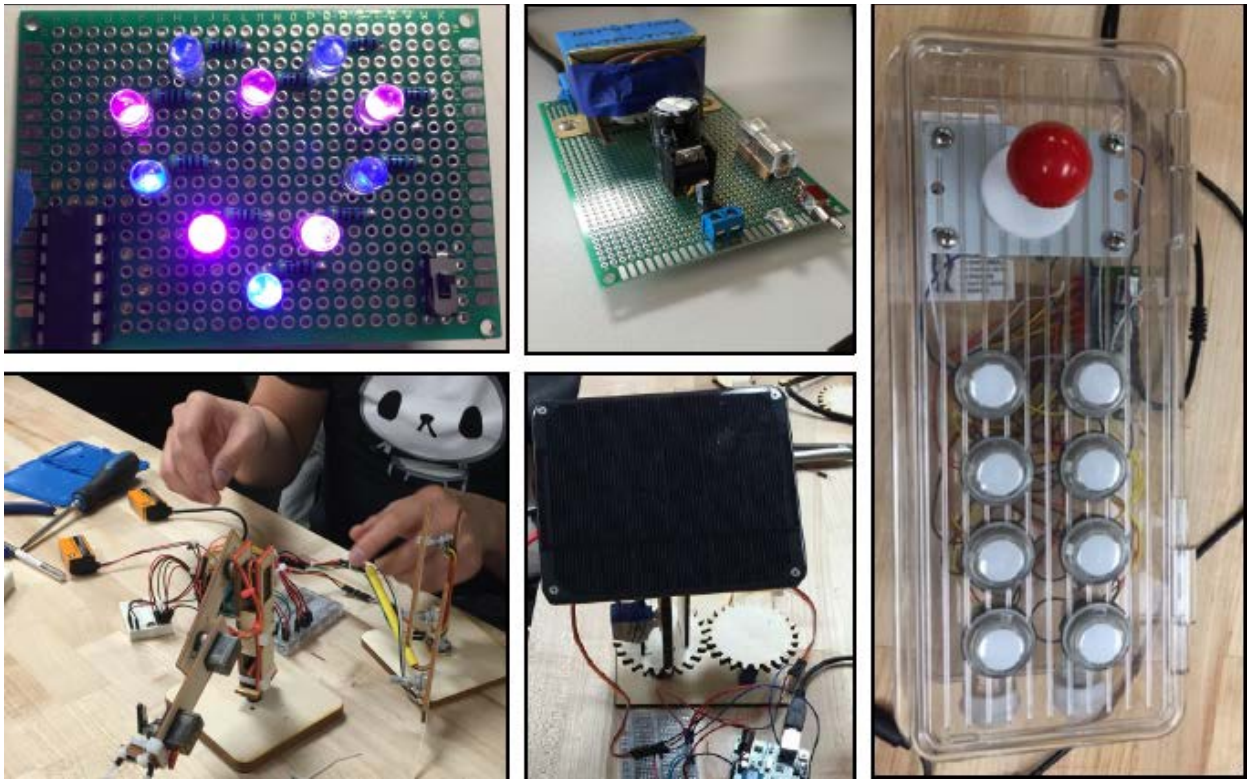
ECE115 students in ECE Makerspace

Alumni Day 2016 Demo

ECE 196: Project-in-a-Box

Goals:

- A class designed for hands-on engineering experience and team building
- With beginner, intermediate and advanced levels, PIB serves students with different hands-on experience
- A wide range of projects train students in diverse areas: ECE, CSE and MAE
- Extend to **other departments in JSOE, Community Colleges and High Schools**
- Open source via a website. Build maker community



Tour of PIB, ECE5 at ECE Makerspace, after meeting

ECE 180: Special Topic Courses on IoT Systems

Observations:

- ECE students have strengths in building devices and prototypes (due to labs, maker spaces, etc.)
- In contrast, they lack systems, IoT, and general software understanding

Vision:

- A two-course sequence that covers the full stack of development
  - Hardware, sensors, cloud, algorithms, APIs, and necessary communication between these modules
- A hands-on project covering the span of the courses
  - Students will build and use a “smart plug” with various sensors and develop software for communication, analytics, and presentation for a complete development experience

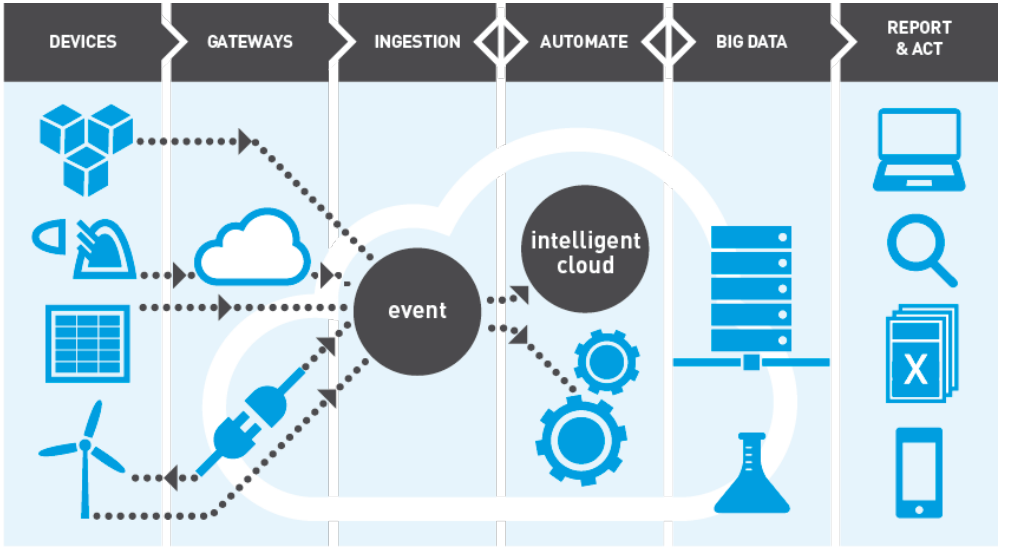


Image from www.codit.eu

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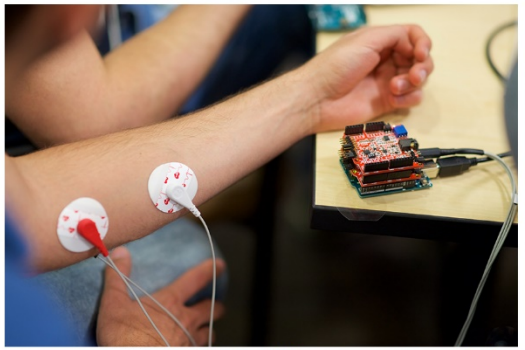


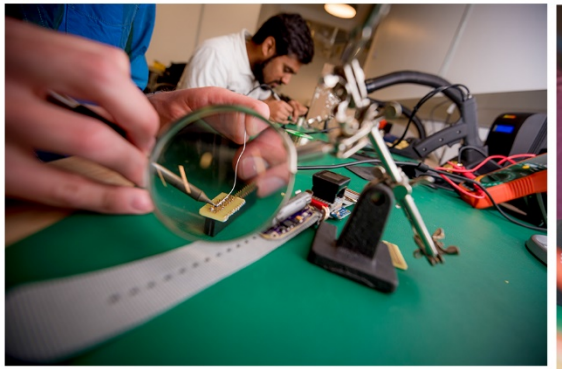
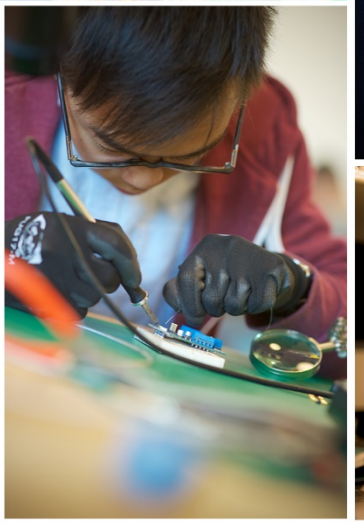
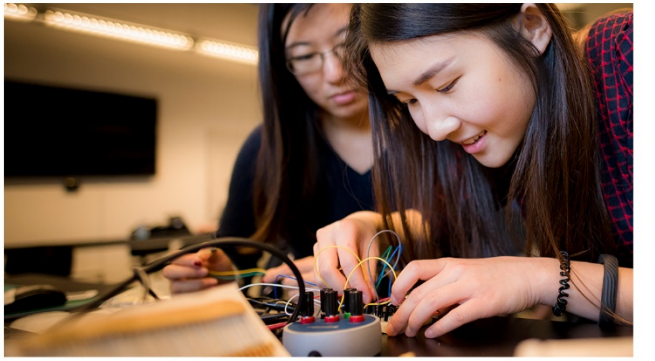
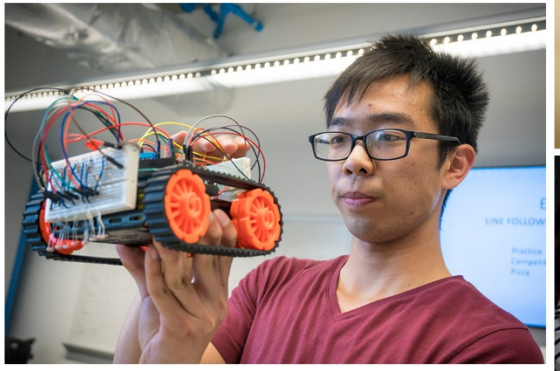

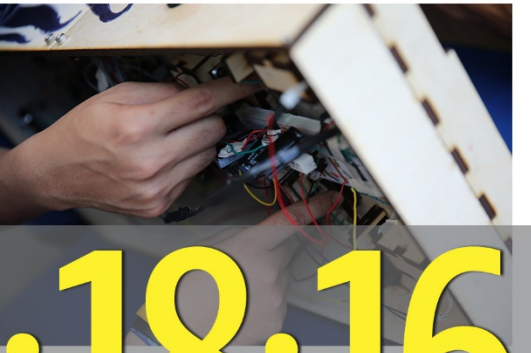

FOUNDERS DAY CELEBRATION | JACOBS HALL

12-3 PM Companies & Students: Meet & Greet
4-7 PM ECE Hands-On Curriculum Showcase
ECE MakerSpace Tour

save the date! **11·18·16**


internship
internships
experience
students
professional
industry
Career
help
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Internships
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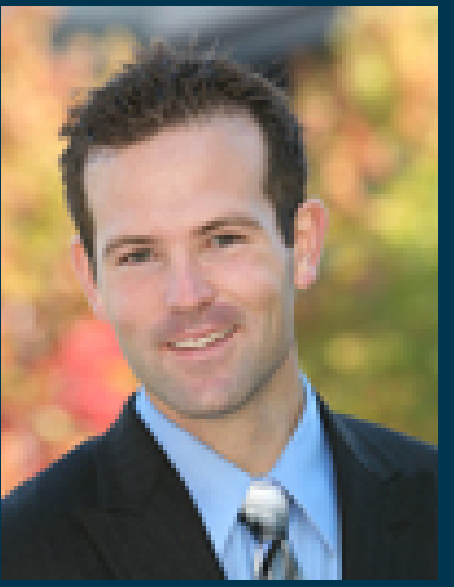
CAP BUSINESS



Cody Noghera

Director, Corporate Affiliates Program, Jacobs School of Engineering

CAP Business Update

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Corporate Affiliates Program

Thank You Solar Turbines

For two decades Solar Turbines has generously sponsored the CAP Spirit of Solar Cruise providing a unique start to each year for all our valued CAP members. Thank you Solar Turbines.

Faculty Hires in 2016

Robotics Cluster

HENRIK CHRISTENSEN

Professor, CSE
Director, Contextual Robotics Institute

Distinguished Professor, Georgia Tech

TODD HYLTON

Prof. of Practice, ECE
Machine learning and natural intelligence

NIKOLAY ATANSOV

Asst. Prof., ECE
Robotics-control and sensing

Post-Doc, Penn

NICK GRAVISH

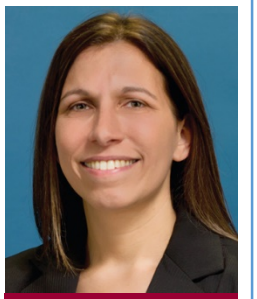
Asst. Prof., MAE
Micro Robotics

Post-Doc, Harvard

NDAPA NAKASHOLE

Asst. Prof., CSE
Machine Learning

Post-Doc, CMU



LAUREL RIEK

Asst. Prof., CSE
Robotics perception, and human-machine interaction

Luce Asst. Prof., Notre Dame

ZHENG CHEN

Asst. Prof., NANO
Sustainable Materials

Post-Doc, Stanford

VERONICA ELIASSON

Asst. Prof., SE
Experimental Mechanics

Assoc. Prof, USC

MELISSA GYMREK

Asst. Prof., CSE
Bioinformatics

Mass General and Broad Institute

ARUN KUMAR

Asst. Prof., CSE
Machine Learning

Wisconsin-Madison, Ph.D.

PIYA PAL

Asst. Prof., ECE
Big Data Analysis

Asst. Prof., Maryland

JOE GIBBS POLOTZ

Teaching Prof., CSE
Computer Science Education

Exec. VP, Brain Corp.

AARON SCHULMAN

Asst. Prof., CSE
Energy Efficiency of Mobile Systems

Post-Doc, Stanford

UC San Diego Rankings

#1 Public university in the nation by Washington Monthly based on social mobility, research and civic engagement

#1 Nationally for women graduates in STEM, according to a study by BestColleges.com—UC San Diego's proportion of STEM female graduates is three times the national average

#2 graduation success by the Washington, D.C.-based Third Way group

#14 Best university in the world by 2016 Academic Ranking of World Universities

29 Campus undergraduate and graduate programs and disciplines hold top ten rankings nationally and globally.

$1.012B in Research funding secured during fiscal year 2014-15. One of the nation's 10 largest centers for science, engineering and medicine. $1 billion four times in the past six years

Jacobs School is **10th in the nation and 23rd in the world** in Engineering / Technology and Computer Sciences by 2016 Academic Rankings of World Universities

Engineering Leadership, Talent, and Technology

1,800 Engineers enter the Workforce every year

9,000+ Engineering Students Enrolled for Fall 2016

$160M+ in Annual Research Funding Fuels Discoveries

30-50 Inventions

Licensed by Spin-Outs or Corporate Partners per Year

UC San Diego
JACOBS SCHOOL OF ENGINEERING
Corporate Affiliates Program

Jacobs School Demographics*

Undergraduate - New Freshmen & Transfers

	FA15 Third Week Enrollment	FA16 As of 09/01/16	
Undergraduate			
New Freshmen			
Female	29%	**32%**	↑
URM	15%	**19%**	↑
Transfers			
Female	22%	**18%**	↓
URM	15%	**12%**	↓

Graduate - New Freshmen & Transfers

	FA15 Third Week Enrollment	FA16 As of 09/01/16	
Graduate			
Masters			
Female	23%	**23%**	→
PhD			
Female	23%	**25%**	↑

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Corporate Affiliates Program

*as of 09/01/2016

An annual engineering Dinner & Professional Development Fair coordinated by students from NSBE, SHPE, SWE, and the IDEA Student Center

- Registration is still open
- Supports year-long community engagement, outreach, and programmatic efforts for NSBE, SHPE and SWE
- http://jacobsschool.ucsd.edu/events/pei/

PLATINUM

TRITECH SOFTWARE SYSTEMS

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salesforce

IBM

VISA

SILVER

box

GREENLEE COMMUNICATIONS

CISCO

QUALCOMM

Genentech

UnionBank

Team Internship Program Impact

2,254 INTERNS

192 COMPANIES

694 PROJECTS

1,081,920 HOURS

$21,638,400 ECONOMIC IMPACT

TEAM INTERNSHIP PROGRAM

Real Challenges. Real Engineers.

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Corporate Affiliates Program

Triton Engineering Student Council presents

New Date, Same Place

January 19th, 2017

UC San Diego Price Center

http://tesc.ucsd.edu/decaf/

Registration opens September 30

Dates to Remember

October 13 - 14, 2016	Center for Networked Systems Research Review
October 28, 2016	Third Annual Institute for Contextual Robotics Forum
November 3, 2016	Jacobs School New Faculty Welcome Reception
November 7, 2016	Professional Evening with Industry w/NSBE/SHPE/SWE
November 9, 2016	Center for Wearable Sensors Summit
November 11, 2016	Center for Wireless Communications Research Review
November 18, 2016	ECE Founders Day
January 19, 2017	Disciplines of Engineering Career Fair (DeCAF)
February 2, 2017	Dean's CAP Executive Board Meeting
April 20, 2017	Jacobs School Research Expo
May 18-19 2017	Center for Visual Computing Summit


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Jacobs School of Engineering
We're looking for a BIG idea...
One that will dramatically transform industry collaboration. What's yours?
Please Join Us for the Tour