

UC San Diego

JACOBS SCHOOL OF ENGINEERING
Corporate Affiliates Program



Welcome
CAP Executive Board
June 3, 2021

CAP Chairman and Vice Chairman



GB Singh

Director, Package & Systems Engineering
Solar Turbines



John Black

Senior Vice President, New Product Development
Brain Corporation

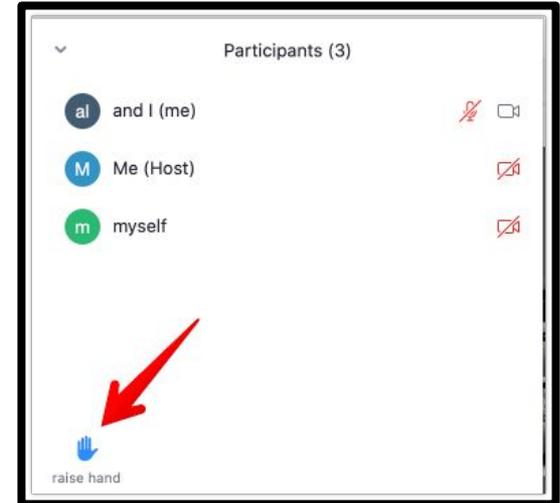
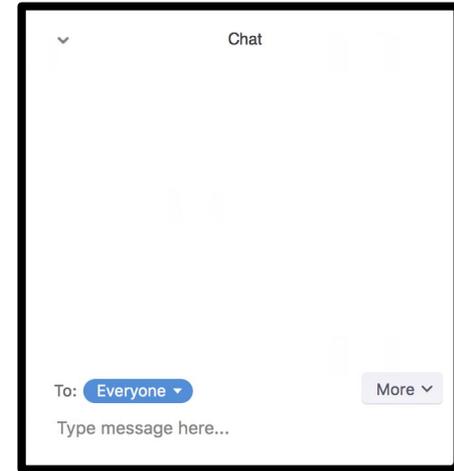
Welcome

UC San Diego

JACOBS SCHOOL OF ENGINEERING
Corporate Affiliates Program

Meeting Protocol

- We will be recording this meeting
- Turn on video when talking
- Mute all, use chat for comments
- Use “raise hand” for discussion



Agenda

4:00-4:15pm CAP Executive Board Chairman Welcome

4:15-4:30pm Dean's Report

4:30-4:45pm Transforming Physical Health and Performance via the Human Digital Twin

Ken Loh, Director, Center for Extreme Events Research

Professor and Vice Chair, Structural Engineering

4:45-5:00pm IDEA Engineering Student Center: The Next Phase

Darren Lipomi, Incoming Faculty Director, IDEA Engineering Student Center

Professor, Nanoengineering

5:00-5:20pm CAP Executive Input

5:20-5:30pm CAP Business

5:30pm Adjournment

Welcome New CAP Partners



M A T E R I O N

Welcome Guests

Dell EMC

ESET North America

Dean's Report

Albert P. Pisano

Dean, Jacobs School of Engineering



Stepping Out and Being Bold

UC San Diego

JACOBS SCHOOL OF ENGINEERING
Corporate Affiliates Program



UC San Diego

JACOBS SCHOOL OF ENGINEERING

#9

BEST ENGINEERING SCHOOL
IN THE NATION

Return to Campus

- June 2021 graduation ceremonies will be held in-person with optional virtual attendance
- Planning for fall 2021 teaching to be primarily in-person with normal classroom occupancy in accordance with public health guidelines
- No documented cases of COVID-19 on campus to date
- UC San Diego has been nationally recognized for COVID-19 response



Franklin Antonio Hall

Thank you
For all of your support!

Opening
Early March 2022
fah.ucsd.edu

Today
More good news!



Franklin Antonio Hall - Announcement

Special Announcement & Recognition - Café Naming has been secured!



Minerva's Café Donor Circle



Martha G. Dennis
Principal
Gordian Knot



Amb. Diana Lady Dougan



Arlene J. Harris
CEO
Dyna LLC



Yvonne Hildebrand
Systems Engineer
Program Manager
Viasat*



Kristi Jaska
Vice President
Global Technology Customer
Experience
Viasat*



Peggy Johnson
Chief Executive Officer
Magic Leap



Vera Kripalani



Anna Scipione



Jan Talbot
Professor
Mechanical & Aerospace
Engineering
Jacobs School of Engineering



Susan Tousi
Sr. Vice President
Product Development
Illumina, Inc.

Increasing Engineering Faculty Diversity



Jacobs School has partnered with U. of Michigan to run NextProf Pathfinder events

1st- and 2nd- year PhD students from across the country converge for short, intensive workshops aimed at keeping the pipeline of students pursuing careers in academia as diverse as possible.

Another move to engage in national projects in engineering education.

National Academy of Inventors

- UC San Diego is the first UC campus to establish a chapter of the National Academy of Inventors (NAI)
- Important move to strengthen innovation on campus in particular for our undergraduates





What Keeps Me Up at Night

Stepping out and being bold.

- Leveraging our rising reputation
- Driving the national agenda on innovation



- **YOU and NAE/NSF said:**
Your vision for Innovation Centers has merit. Keep going!
- **We Did:**
NAE member-led event scheduled! June 24 & 25 2021
Participating in NSF meetings on future of innovation
6G / Future of Wireless
Genome Engineering
- **Next Steps:**
Build teams for Genome Engineering and 6G / Future of Wireless

National Academy of Engineering Innovation Center for Wireless (6G) Event 24 & 25 June 2021

(virtual event)

Event and registration details will be
emailed to all CAP Executive Board Members



NATIONAL ACADEMY
OF ENGINEERING

NAE Innovation Center for Wireless (6G) Event Agenda Sample

Welcome, Opening Remarks and Opening Keynotes 11:30 a.m. – 1:00 p.m. EDT

Session III – Wireless CTO Panel

3:00 p.m. – 4:00 p.m. EDT

Welcome	Dr. Albert P. Pisano, Dean and Walter J. Zable Distinguished Professor, Jacobs School of Engineering, University of California San Diego
Opening Remarks	Dr. Irwin M. Jacobs, Founding Chairman and Chief Executive Officer Emeritus, Qualcomm
Opening Keynotes	Dr. John Anderson, President, National Academy of Engineering Dr. Erwin Gianchandani, Senior Advisor for Translation, Innovation, and Partnerships, Office of the Director, National Science Foundation Dr. Peter Cowhey, Dean, School of Global Policy and Strategy, University of California San Diego Dr. David J. Teece, Thomas W. Tusher Professor in Global Business and Faculty Director, Haas School of Business, University of California Berkeley

Objective: Bring industry thought leaders to discuss “the set of attributes necessary for a successful innovation center” in future wireless	
Moderated by:	Ms. Susan Miller, President and Chief Executive Officer, Alliance for Telecommunications Industry Solutions
	Mr. Erik Ekudden, Senior Vice President, Chief Technology Officer and Head of Group Function Technology, Ericsson
	Dr. Charles Clancy, Senior Vice President, General Manager, MITRE Labs, Chief Futurist
	Dr. John Smee, Vice President, Qualcomm Head of Wireless Research
	Dr. Monisha Ghosh, University of Chicago

Session I – Industry Applications Panel 1:00 p.m. – 2:00 p.m. EDT

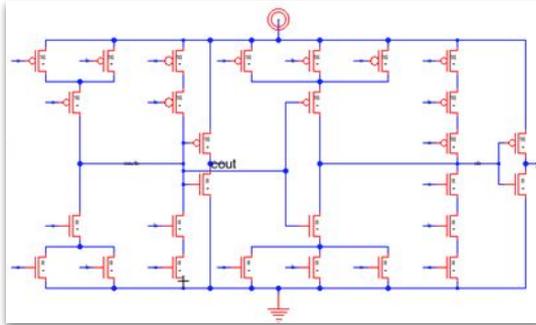
Session V – Multidisciplinary Leader Panel 12 Noon – 1:00 p.m. EDT

Objective: Discuss the applications and use cases enabled by future wireless	
Moderated by:	Mr. Toby E. Redshaw, Chief Executive Officer, Verus Advisory
Health Care	Mr. Donald Jones, IMPACT Co-Founder, Chair, Virtual First Medical Practice Collaborative, Digital Medicine Society (DiMe)
Digital Divide	Mr. Laurent Therivel, President and Chief Executive Officer, US Cellular
Precision Agriculture & Food Supply Chain	Dr. Jahmy Hindman, Chief Technology Officer, Deere & Company
Multi-Sector Open Innovation & Co-Creation	Dr. Mallik Tatipamula, Chief Technology Officer, Ericsson Silicon Valley
Cloud Applications	Dr. Preston F. Marshall, Engineering Director and Principal Wireless Architect, Google

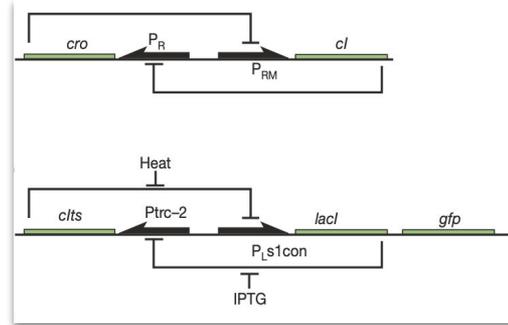
Objective: Thought leaders discuss the set of attributes necessary for a successful innovation center in future wireless	
Moderated by:	Mr. John Donovan, Chair of the US President’s National Security Telecommunications Advisory Council (NSTAC), and Former CEO of AT&T Communications
	Dr. Paul E. Jacobs, Founder, Chairman and Chief Executive Officer, XCOM
	Mr. John Roes, Global Chief Technology Officer, Dell Technologies
	Professor Arogyaswami Paulraj, Emeritus Professor, Stanford University
	Dr. David Tennenhouse, Chief Research Officer, VMware
	Professor Ted Rappaport, The David Lee/Ernst Weber Professor of Electrical Engineering, New York University Tandon School of Engineering, (NYU-Tandon)

Towards Genome Engineering: Analogy to microelectronics

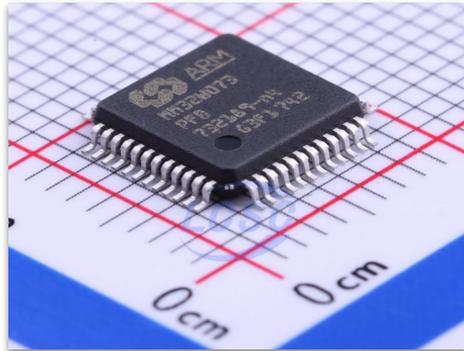
Simple electronic circuit (1960s)



Simple genetic circuit (2002)

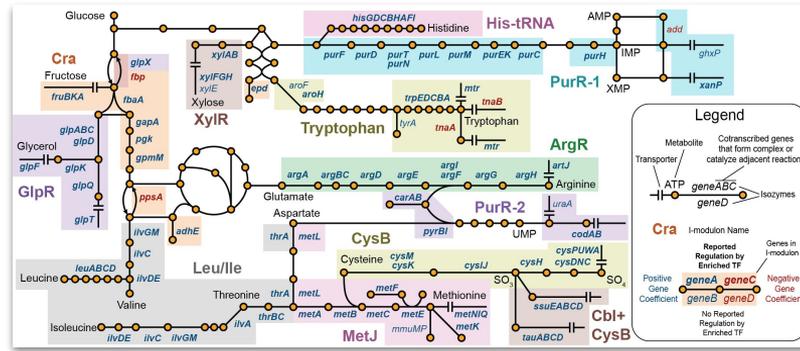


Integrated electronic circuit (1990s)



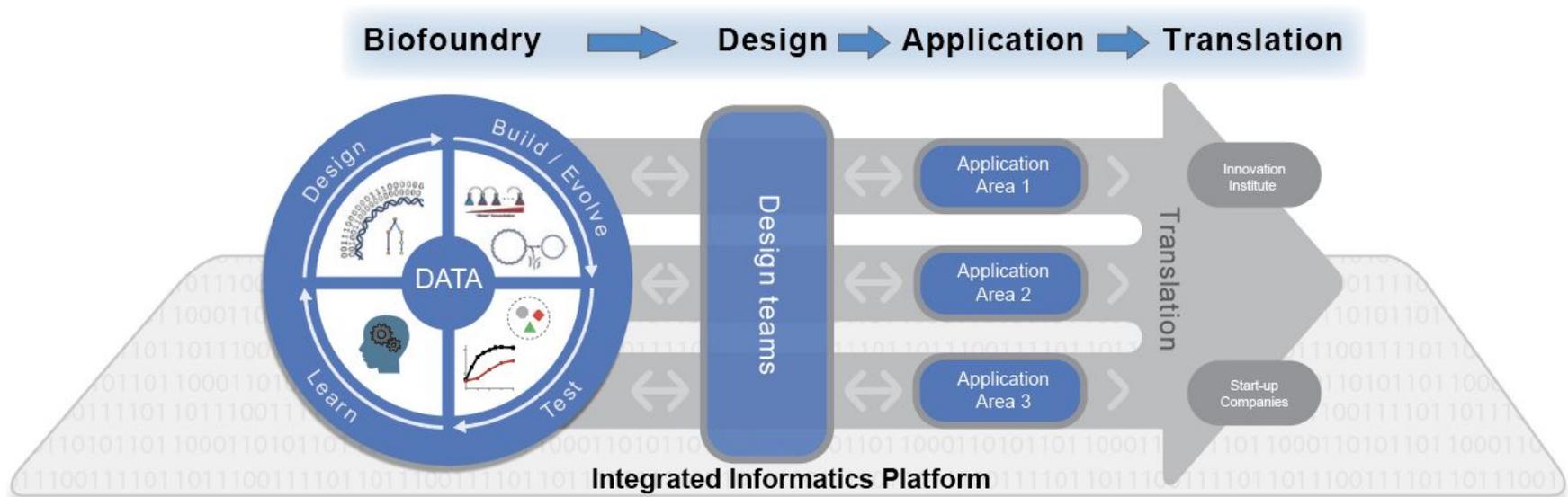
Moore's Law

Multiple metabolic genetic circuits (2019)



UC San Diego is a part of the largest public BioFoundry

Overall structure



Questions, Comments, Input?

Faculty Presentation

Ken Loh

Director, Center for Extreme Events Research (CEER)
Professor & Vice Chair, Structural Engineering

kenloh@eng.ucsd.edu



Transforming Physical Health and Performance
via the Human Digital Twin

UC San Diego

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Faculty Presentation

Darren Lipomi

Incoming Faculty Director, IDEA Engineering Student Center
Professor, NanoEngineering



IDEA Engineering Student Center: The Next Phase

UC San Diego

JACOBS SCHOOL OF ENGINEERING
Corporate Affiliates Program

IDEA Engineering Student Center: The Next Phase

Prof. Darren J. Lipomi

Department of NanoEngineering
Chemical Engineering & Materials Science Programs
Incoming Faculty Director, IDEA Center

<https://jacobsschool.ucsd.edu/idea>

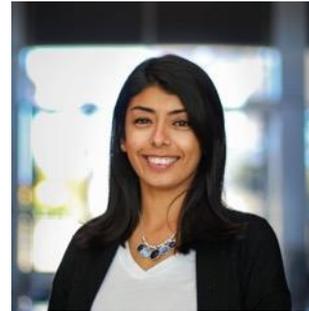
- The IDEA Engineering Student Center is the nexus of the student experience at the Jacobs School of Engineering
- We serve all engineering students, but offer targeted programs for students from underrepresented, low-income, and disadvantaged groups
- Retention and success of our students rests on four pillars:
 1. **Academic support:** Helping students before they are in trouble academically and providing an environment that supports students during academically tough times
 2. **Leadership opportunities:** Helping students see what it takes to be an engineering student and feel as if they have control over their engineering experience by providing leadership opportunities that allow them to shape their engineering experience
 3. **Maintaining interest:** Exposing students to various disciplines and opportunities and help them see the connection between engineering courses and engineering in real-world applications
 4. **Building community:** Helping students believe they are more than a number and that the Jacobs School cares about their success and achievement as individuals



Gennie Miranda
Director of Operations



Lisa Trahan
Director of Strategy & Assessment



Alejandra Arguellas
Program Coordinator



Ruben Rodriguez
Program Coordinator



Jessica Baldis
Student Success Coordinator



Sinai Cota
Sloan Scholars Prgm Asst



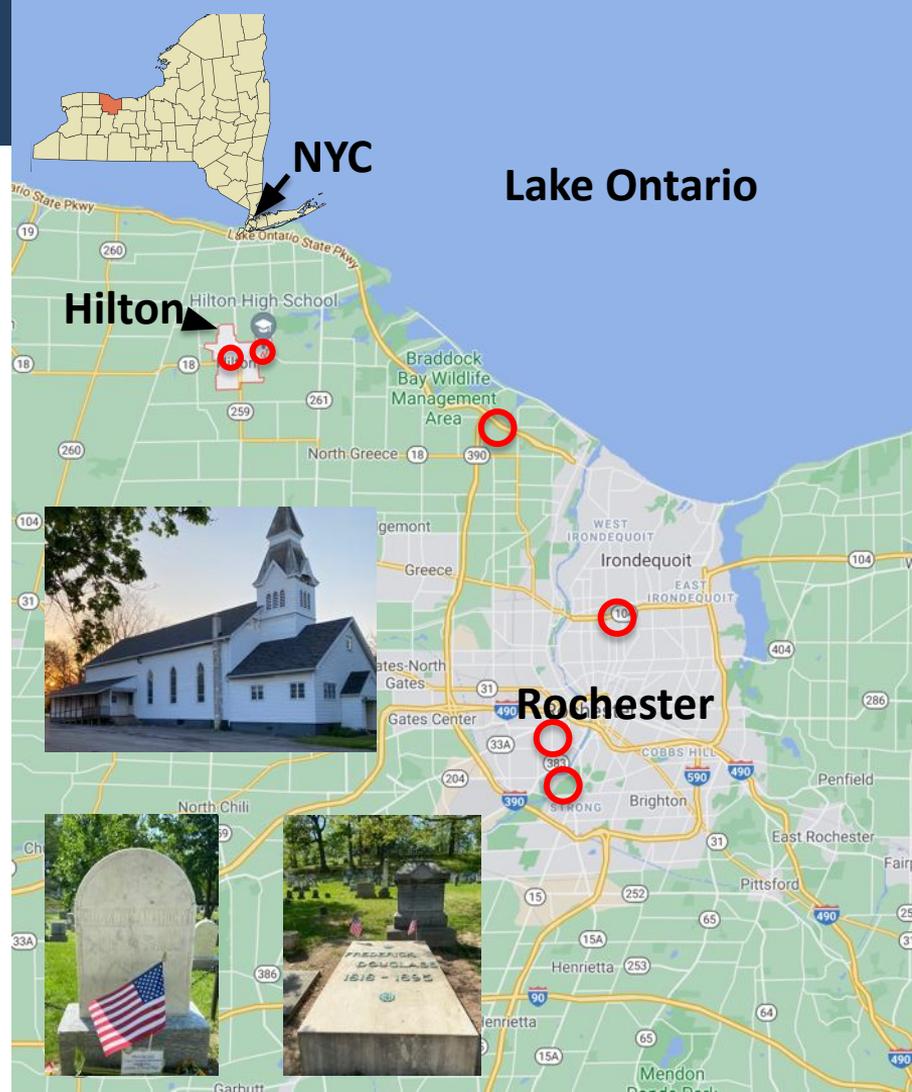
Sara Eckardt
IDEA Center Coordinator



- **Professor Olivia Graeve**
 - Faculty Director, IDEA Center, 2015-2021
- **Steadfast advocate for students & the IDEA Center**
 - Oversaw staff increase from 4 to 7
 - Increased attention to outcomes & assessment
- **Oversaw creation & growth of new programs**
 - IDEA Scholars (URM) cohort grew to 450; better outcomes than control
 - Study Center □ Engineering Learning Communities
 - 5-day Summer PrEP □ 5-week Summer Engineering Institute
 - Creation of 3 new experiential & professional courses (ENG 10, 15, 20)
 - Addition of 3 new diversity organizations
 - Launched the Guided Engineering Apprenticeships in Research (GEAR) program
- **Impact: >4,500 direct student-engagements through 20+ programs**
 - Additional >1,000 students through diversity organization events, Triton Day, Welcome Week
 - e-Newsletter reaches all ~9,000 engineering students
 - Administers >\$150,000 in scholarships, project matching funds, & travel opportunities
- **Role model & mentor**
 - Presidential Award for Excellence in Science, Mathematics, & Engineering Mentoring

Biosketch

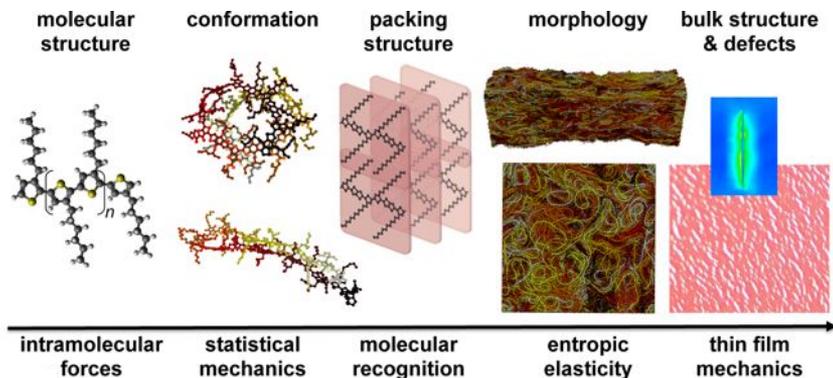
- **Dad**
 - Born 1931
 - Tailor
 - No college
- **Mom**
 - Born 1944
 - BA, RIT '66
 - MLS, U Buffalo '2012
 - Acting town librarian until retirement / COVID
- **Undergraduate: Boston University (2005)**
 - Chemistry, Beckman Scholar
 - Physics minor
- **PhD: Harvard University (2010)**
 - Chemistry, ACS Organic Fellow
 - Nanofabrication engineering
- **Postdoc: Stanford University (2012)**
 - Chemical Engineering, CIA fellowship
 - Mini-MBA from Stanford GSB



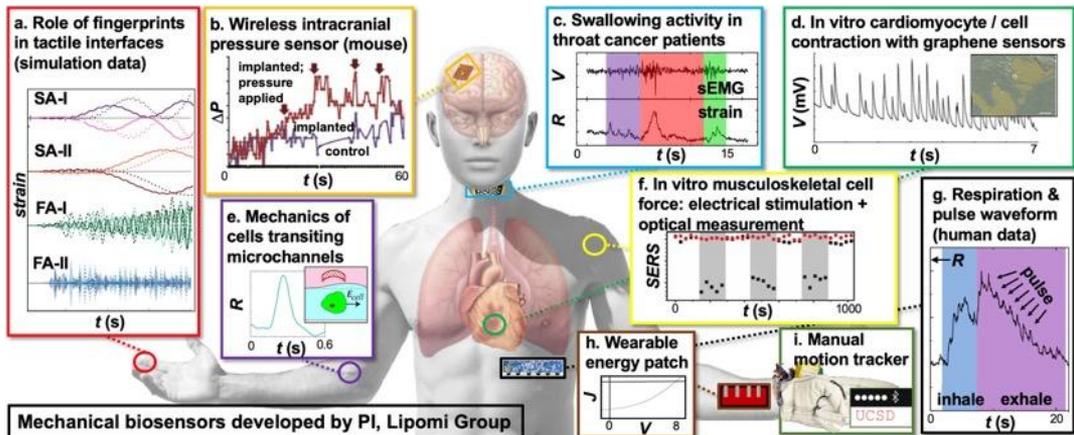
Lipomi Research Group at UC San Diego

Mechanical Phenomena in Organic & Nanostructured Electronic Thin Films

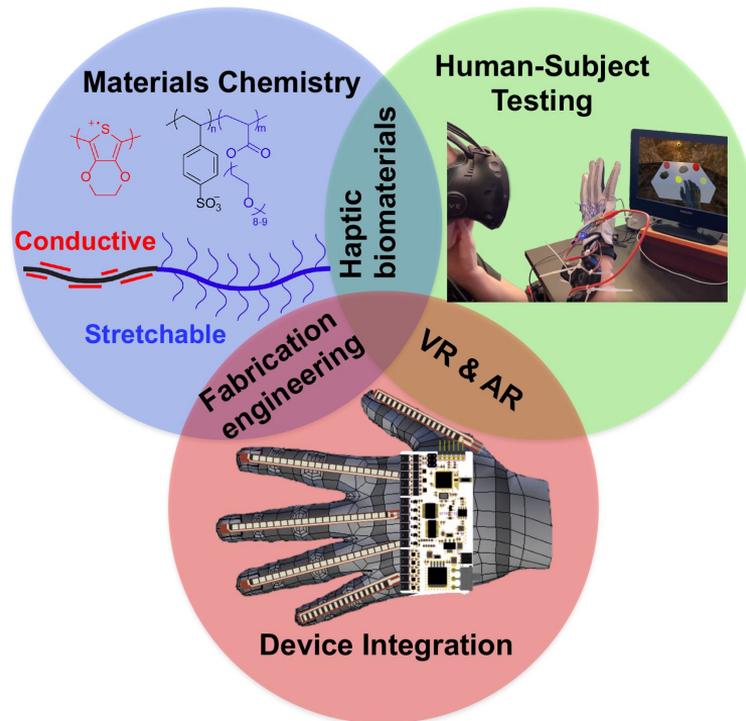
Mechanical Properties of Electronic Polymers



Mechanical Biosensors



Haptic Biomaterials



- **PhD (former):** Adam Printz (postdoc Stanford; now faculty, U of A, ChE), Aliaksandr Zaretski (Founder & CTO, GrollTex), Suchol Savagatrup (postdoc MIT; now faculty, U of A, ChE), Brandon Marin (Intel), Timothy O'Connor (ASML, then Founder, HyperSpace Lighting), Sam Root (postdoc, Harvard), Daniel Rodriguez (ASML), Cody Carpenter (MBA, Wharton), Julian Ramirez (Omniome)
- **Postdocs (former):** Daniel Burke (Tesla), Laure Kayser (faculty, U Delaware, MSE), Charles Dhong (faculty, U Delaware, MSE)
- **PhD (current):** Laura Becerra, Guillermo Esparza, Andrew Kleinschmidt, Mickey Finn, Rory Runser, Beril Polat, Alex Chen, Samuel Edmunds, Tarek Rafeedi, Steven Schara
- **Postdocs (current):** Rachel Blau, Allison Lim
- **13 NSF GRFP Awardees (PhD inst.):** Suchol Savagatrup (UCSD), Aliaksandr Zaretski (UCSD), Daniel Rodriguez (UCSD), Julian Ramirez (UCSD), Laura Becerra (UCSD), Rory Runser (UCSD), Liban Jibril (Northwestern), Eduardo Valle (Stanford), Anne Cardenas (Berkeley), Armando Urbina (USC), Celine Liong (Stanford), Kartik Choudhary (Stanford), Marigold Malinao (Stanford)
- **NIH Diversity Fellow –** Brandon Marin (Intel)
- **McNair Fellows:** Eduardo Valle, Liban Jibril, Kyle Skelil (U Penn)
- **Other noted undergraduates (of ~60 total):** Eden Aklile (Northwestern), Kristan Hilby (MIT), Mohammad Alkhadra (MIT), Derick Ober (UCSB), Hamish Carr-Delgado (Stanford), Casey Kong (General Atomics), Colin Keef (Northrup Grumman)

Graduate Students



Guillermo Esparza



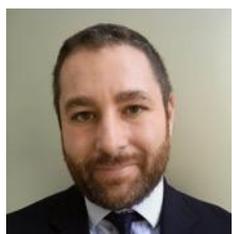
Steven Schara



Alex Chen



Rory Runser



Mickey Finn



Beril Polat



Tarek Rafeedi



Laura Becerra



**Andrew
Kleinschmidt**

Postdocs



Rachel Blau



Allison Lim

Undergraduates



Kartik Choudhary



Marigold Malinao



Juliana Foley



**Hamish
Carr-Delgad**



Kyle Skelil 31

Recent honors & milestones

- 2019: PECASE (White House) award
- 2021: 100th paper & 10,000th citation

- **IDEA Center Faculty Advisory Committee (2012-2016)** – Quarterly meetings, provided input from the faculty perspective
 - **Mentor (2012-present):** IDEA Scholars, McNair Scholars, Overnight Stay, Breakfast with the Dean...
 - **Coordinator: Grad & Postdoc Scholarly Talk Series (2016-2018)** – Coordinated 36 talks over 2 years with speakers from academia, industry, and law
 - **Public speaker:** Delivered ~25 talks including 18 Grad & Postdoc talks
 - **Campus Diversity Champion Award (2017)**
- **NanoEngineering Diversity Officer (2012-2016)** – Served on Diversity/Excellence hiring committee, provided voice in graduate admissions
- **Graduate Affairs (+Admissions) Committee Chair (2016-2019)** – Encouraged equitable admissions practices; advocated for URM students in distribution/nomination for fellowships
- **Jacobs School Strategic Planning Subcommittee on Diversity & Climate (2019)**
- **Committee on Extended Studies & Public Service (2019-present)** – Liaison between the main campus and UCSD Extension, which is a locus of outreach & workforce development activity
- **Faculty Director, IDEA Center (starting 7/1/21)** – Maintain the programmatic strength established by Olivia

YouTube and Molecular Podcasting



Darren Lipomi

8.81K subscribers



My experience as a volunteer in a COVID-19 vaccine...

441 views • 3 months ago

Materials Science in Haptics: Panel discussion part 1 of 2...

331 views • 3 months ago

Victoria Fu: Nanoengineer, Chemical Engineer,...

701 views • 3 months ago



Chemjobber: chemical job market, effects of COVID,...

402 views • 4 months ago



Tyler Cowen and I discuss innovation, art, music, touch,...

2K views • 4 months ago



Jillian Buriak: Journal editing, publishing, impact factor,...

675 views • 5 months ago



Marwa ElDiwiny: Creating an international community in...

260 views • 5 months ago



Brian Keating: The guts of science podcasting & gettin'...

188 views • 5 months ago



Laure Kayser: Being a new PI, an outsider, creating an...

419 views • 5 months ago



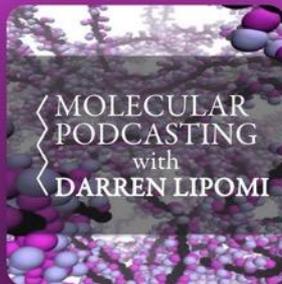
Mental health, anxiety & impostor syndrome as a...



Graham Szazama: Getting a job & professing at a...



Making the most of remote learning during the COVID-1...



PODCAST

Molecular Podcasting with Darren Lipomi

Darren Lipomi



CBET-19297

48

- Channel: 160 videos
- Podcast: 50 episodes
- Almost **10,000 subscribers**
- Nearly **1,000,000 views/listens**
- Audience: 32% is US
- Reach: next 20 countries include India, South Africa, Malaysia, Indonesia, Philippines, Pakistan, Brazil, Saudi Arabia, Nigeria.
- #3 podcast in chemical engineering (Feedspot.com)



#40 – Why I started Molecular Podcasting, its effects on science podcasters

This is the full-length interview I did for an article in Chemistry World
Apr 3 · 22 min



#39 – JAWS: Providing a platform for the researchers who

In this episode, I sat down with Prof. Daniela (Dani) Arias-Rotondo, D (absent: Dr. Monica Gill) on their creation, JAWS: Just Another [Chem]



#38 – Ask a professor anything: Virtual coffee hour with st

Nanoengineering students peppered me with questions of all types, it is. Identities of the questioners have been redacted. We covered t



#37 – Brandon Marin (II): What do Chemical Engineers do in semiconductor R&D

In his second appearance on the podcast, Brandon Marin (BS, Chem Engineering & Nanoengineering, UCSD) describes his role as an R&D



#36 – Alex Zaretski: co-founder & CTO of GrollTex on star real-life tricolorer

Aliaksandr (Alex) Zaretski, PhD (UC San Diego, Nanoengineering, '16 Inc., a leading supplier of graphene and other nanomaterials to the R

- **Be a resource to the IDEA Center and its stakeholders**
 - Support existing programs, and to let the professionals on the staff flourish
- **Promote compassion & rigor in student experience**
 - Encourage trust & openness in meetings
 - Provide guidance toward execution of Strategic Plan
- **Serve as a public face to the center and promotion of its programs and successes**
 - Make talks and appearances at IDEA-sponsored events
 - Establish a social media presence
 - Produce IDEA-branded recorded talks/conversations
- **Fundraise by way of grants and philanthropy; work with development & corporate partners**
- **Serve as a liaison to ENG faculty to recruit them as mentors/speakers for programs**
 - Advocate for the IDEA Center to the Dean's office and campus
- **Assist in coordination of ENG 10, 15, & 20**
- **Evaluate scope and logic of new opportunities: "quality control" valve**
 - Cast a "tie-breaking" vote at meetings, as opposed to principally executive function

- **Mission**
 - Continue to be the locus of the student experience at the Jacobs School of Engineering
 - Provide special forms of support for students from historically disadvantaged groups
- **Values**
 - Teach teamwork and culture of mentorship
 - Cultivate socially conscious engineers who value diversity
 - Strengthen connections with partners and stakeholders
- **Scope**
 - Inventory activities of IDEA Center & Departments to ensure complementarity vs. duplication
 - Evaluate where it makes sense to participate in engineering-focused outreach
 - Increase programmatic content and resources for graduate students
 - Work with young faculty to develop strategies for generating an inclusive climate in the classroom
 - Retain focus of staff on *student interaction*
- **Logic & sustainability**
 - To be the premier center for the engineering student experience in the US, and a model for nascent centers of inclusion
 - Exit surveys: “Involvement in IDEA Center programs significantly enhanced my experience at UC San Diego” □ **Strongly Agree!!**
 - Students should want to come here *because* of the IDEA Center
 - Form super enthusiastic alumni network willing to serve as mentors, speakers, advisors, & sponsors

- **How to engage with us**
 - Participate in events held by diversity organizations



- Nominate individuals to serve on panel discussions, recruiting events, GRAD talks, WISE talks, and podcast interviews
- **Join our Industry Advisory Board!**
 - Nominate individuals at your organizations
 - Quarterly meetings
 - Many spots are turning over now; please send interest to Darren Lipomi dlipomi@ucsd.edu
- **Internships**
- **Direct sponsorship of student projects**
 - Matching funds
 - Sponsorship of IDEA Scholars, SEI, & student support

Discussion with CAP Executive Board

- How can the next phase of the IDEA Engineering Student Center bring the most positive impact to your company?
- How can we equip our students to be diversity agents in your company?
- What programs are working to address equity that you've found to be most effective?

CAP Business

Wil Dyer

Director, Corporate Affiliates Program



CAP Updates

UC San Diego

JACOBS SCHOOL OF ENGINEERING
Corporate Affiliates Program

Jacobs School Corporate Affiliates Program



Meet our new Team Members



Alice Grgas
Associate Director,
Talent Programs
Corporate Affiliates Program
agrgas@eng.ucsd.edu

- Leads all CAP Talent Programming
- Develops recruiting strategies with CAP Partners
- Manages Team Internship (TIP) & Cooperative Education (Co-op) Programs
- Advertises jobs/internships, screens resumes, targets specific student populations



Alina Mullen
Executive Assistant
Corporate Affiliates Program &
Agile Research Centers
capassistant@eng.ucsd.edu

- Executive level administrative assistance
- Supports Corporate Affiliates Program & Agile Research Centers of Excellence teams
- Coordinates meetings, programs and events
- Assists with fiscal and reporting responsibilities

Start planning your 2021-2022 Recruitment

Schedule your recruitment strategy meetings with the CAP Team! Attract top talent for:

- Team Internship Program (TIP)
- Cooperative Education (Co-op) Program
- Individual internships
- Full-time/part-time

Contact Alice Grgas at agrgas@eng.ucsd.edu



2021 Virtual Research Expo a Success!



Best in Show

David Paz-Ruiz & Hengyuan Zhang,
Computer Science & Engineering Ph.D students
“Improved maps for self-driving vehicles”



Thank you to our Distinguished CAP Executive Judges
and CAP Partner Networking Hour Participants!



Franklin Antonio Hall

VIRTUAL TOUR SERIES | JUNE 22, 2021



Henrik Christensen
Director, Contextual Robotics Institute
Professor, Computer Science & Engineering

The Future of Robotics

June 22, 2021

5:00-5:45 pm

[Zoom Webinar Link](#)



Michael Yip
Director, Medical Robotics Laboratory
Professor, Electrical & Computer Engineering 43

Masters of Advanced Studies (MAS) Applications Open for Fall 2021

Three engineering masters degree programs for working professionals

Architecture-based Enterprise Systems Engineering - address the challenges and issues that arise when an enterprise is attempting to develop and evolve their Enterprise Knowledge System (EKS)

Data Science & Engineering - combine the skills of software programmer, database manager, and statistician to create mathematical models of the data, identify trends/deviations, then present them in effective visual ways that can be understood by others

Wireless Embedded Systems - cross-disciplinary education paradigm, designed to provide high-level training in systems, software, hardware and communication theory



Apply by July 7!

Contact: Phil McMullen
pmcmullen@eng.ucsd.edu
jacobsschool.ucsd.edu/mas

UC San Diego

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All Upcoming Events

June 22, 2021	Franklin Antonio Hall Virtual Tour Series: Future of Robotics
June 24-25, 2021	National Academy of Engineering Innovation Center for Wireless (6G) Event
July (TBD), 2021	Franklin Antonio Hall Virtual Tour Series: Topic TBD
August 17, 2021	Franklin Antonio Hall Virtual Tour Series: Future of Energy
September 21, 2021	Franklin Antonio Hall Virtual Tour Series: The Brain as an Engineered System
September 26-29, 2021	Mechanistic Machine Learning and Digital Twins Conference
October 7, 2021	Fall CAP Executive Board Meeting
October 19, 2021	Franklin Antonio Hall Virtual Tour Series: Convergent Systems Engineering

All events virtual until further notice

UC San Diego

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Thank you!
Next CAP Executive Board Meeting:
October 7, 2021