

UNIVERSITY of HOUSTON | ENGINEERING

Department of Electrical & Computer Engineering

Annual Capstone Design Conference

May 1, 2015

The Hilton UH Hotel & Conference Center

Houston, Texas

8:30 – 8:55 am	Registration, Conrad Ballroom, Room S202, Lobby
8:55 – 9:00 am	Opening Remarks by Dr. Len Trombetta, Flamingo Room 275
9:00– 10:00 am	Technical Program – Oral Session A, Flamingo Room 275
10:00 -10:30 am	Welcoming Remarks <ul style="list-style-type: none">• Dr. Joe Tedesco, Dean, College of Engineering• Dr. Suresh Khator, Associate Dean, College of Engineering• Dr. Badri Roysam, Chairman, ECE Department
10:30 – 10:45 am	Coffee Break, Conrad Ballroom, S202, Lobby
10:45 – 11:30 am	Technical Program – Oral Session B, Flamingo Room 275
11:30 - 12:30 pm	Lunch, Conrad Ballroom, S202
12:30 – 1:00 pm	Plenary Presentation by Kenny Mercado, Sr. Vice President of Electric Operations Center Point Energy “ <i>Find your zest: making “room” for career, family, community and self</i> ”, Conrad Ballroom, S202.
1:00 – 3:00 pm	Technical Program – Poster Session, Shamrock Ballroom, Room 261
2:30 – 3:00 pm	National Instruments Presentation, Igor Alvarado, Flamingo, Room 275
3:00 – 4:00 pm	Technical Program – Oral Session C, Flamingo Room 275
4:00 – 4:15 pm	Coffee Break, Conrad Ballroom, Room S202, Lobby
4:15 – 4:55 pm	Technical Program – Oral Session C, Flamingo Room 275
4:55 – 5:30 pm	Break for Team Preparation
5:30 – 6:00 pm	Elevator Talks by CDC students, Conrad Ballroom, Room S202

CDC 2015 Technical Program

May 1, 2015

Session A: Oral Presentations

Time: 9:00 – 10:00 am

Faculty Chair: Dr. John Glover

- 9:00 - 9:20 am **VISUAL DATA CAPTURE AND GROUND SUPPORT COMMUNICATION SYSTEMS FOR AGGIESAT4 SATELLITE**
James Annis, Brian McNeil, Tori Speer-Manson, and Sean Strickland
- 9:20 – 9:40 am **WIRELESS CHARGING FOR EXTENDING MISSION OF DRONES**
Fabiana Cirino, Sho Misawa, and Artemio Villarreal
- 9:40 – 10:00 am **AUTONOMOUS QUAD COPTER NAVIGATION AND DOCKING SYSTEM**
Justin Brandon, Zachary May, Scott Garrison, and Jamal El Alaoui
- 10:00 – 10:30 am **Welcoming Remarks and Addresses in Plaza Room 247**
- Dr. Joe Tedesco, Dean, College of Engineering
 - Dr. Suresh Khator, Associate Dean, College of Engineering
 - Dr. Badri Roysam, Chairman, ECE Department
- 10:30 – 10:45 am Coffee Break, Conrad Ballroom, S202, Lobby

Session B: Oral Presentations

Time: 10:45 – 11:30 am

Faculty Chair: Dr. John Glover

- 10:45 – 11:05 am **3D BOP SURFACE SCANNING SYSTEM**
Kevin Cantor, German Benitez, Jason Le Gaspi, and Khaldon Batnij
- 11:05 – 11:30 am **AUTOMATION OF CHEMICAL COMPATIBILITY TESTING**
Sriram Goparaju, Brian Lee, Shehnil Ali, Alvaro Ordonez, Jereomy Lopez, Alamdar Syed
- 11:30 - 12:30 pm Lunch, Conrad Ballroom, S202
- 12:30 - 1:00 pm Plenary Presentation by Kenny Mercado, Sr. Vice President of Electric Operations Center Point Energy “*Find your zest: making “room” for career, family, community and self*”, Conrad Ballroom, S202.

Session C: POSTER PRESENTATIONS

Time: 1:00 – 3:00 pm

Location: Shamrock Ballroom, Room 261

National Instruments Presentation

Time: 2:30 – 3:00 pm

Place: Flamingo, Room 275

“A Platform-based Measurement & Control Systems Design Guide for Electrical & Computer Engineers” by Igor Alvarado, Academic Business Development Manager & Field Engineer, National Instruments Corp

Session D: Oral Presentations

Time: 3:00 – 4:00 pm

Faculty Chair: Dr. Len Trombetta

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| 3:00 - 3:20 pm | IEEE REGION V ROBOT I
Christopher Ahn , An Nguyen , Hector Reyna , And Daniel Romero |
| 3:20 – 3:40 pm | OKLAHOMA STATE UNIVERSITY MERCURY ROBOTICS COMPETITION
Steven Do, Aman Fatma, and Erick Saucedo |
| 3:40 – 4:00 pm | IEEE 2015 REGION 5 ROBOTICS COMPETITION
Victor Brzeski, Fergyl Estioco, Ernest Patenia, and Samuel Stephen |
| 4:00 – 4:15 pm | Coffee Break, Conrad Ballroom, S202, Lobby |

Session E: Oral Presentation

Time: 4:15 – 4:55 pm

Faculty Chair: Dr. Len Trombetta

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| 4:15 – 4:35 pm | “ROBOCHARGE” – UNMANNED WIRELESS CHARGING VEHICLE
Meagan Shores, Robert Boswell, Kevin Adams, and Rabal Sheikh |
| 4:35 – 4:55 pm | SPARKFUN AUTONOMOUS VEHICLE COMPETITION
Jorge Rivera, Alexander Bello, Gilberto Martinez, and Jorge Revuelta |
| 4:55 – 5:30 pm | Break for Team Preparation |
| 5:30 – 6:00 pm | Elevator Talks by CDC Students hosted by Dr. Len Trombetta, Conrad Ballroom, Room S202 |
| 6:00 – 6:60 pm | Awards Ceremony , Conrad Ballroom, Room S202 |

Plenary Presentation by
Kenny Mercado
Sr. Vice President of Electric Operations
CenterPoint Energy

Find your zest: making “room” for career, family, community and self

We each have our own reason for becoming an engineer*:

- “I was enamored with the solar collectors my dad built in our front yard in the 1980s to help heat our house.” -- Heidi
- “Engineering to me is problem solving and teamwork.” -- Sara
- “To be a good engineer is to know how to do things -- Simon
- “I was determined to show that women can be great engineers.” -- Iris

We can fulfill ourselves and meet society’s needs as engineers, but there is more to life than work. My minister used to say, “What words do you want on your tombstone or your obituary?”

If you put everything into your work, then your résumé will be your tombstone.

So what I’ve tried to do is put as much of my *zest* – that which measures one’s whole substance of life –into my family, to my work, and to my community, while still making room for myself.

What is your passion? Find and follow your zest. Work hard, but balance your life. Do well and do good. Do good for your family. Do good for your company. Do good for your profession. Do good for the community. Do good for society. Make room for yourself, but remember you are part of something larger. Your life is yours to build, so create rooms to be a home for your zest.

* Leidos Engineering’s “Engineering Week” profiles

Kenny Mercado



I am a fourth-generation Houstonian. My mother - a loan officer - and my father, who worked for the railroad, built our house. By the time I was in high school, I knew I wanted to be an engineer.

I got both a Bachelor of Science degree in electrical engineering and a Master of Science degree in industrial engineering (at night while working for Houston Lighting & Power) from the University of Houston. I also received an Executive MBA degree from Mays Business School at Texas A&M University.

Starting at HL&P – the predecessor to CenterPoint Energy’s Houston Electric utility – in 1985, I’ve been blessed with many opportunities in my career in engineering and electric operations management. I was responsible for CenterPoint Energy’s electric distribution, substation and transmission operations when Hurricane Ike hit in 2008. It was my privilege to lead a team, which has brought our electric grid into the digital age through a multiyear deployment of a smart grid system, including the installation of smart meters and intelligent grid technology. I am now senior vice president of CenterPoint Energy’s electric utility business, with financial and operational responsibility for delivering power to more than 2.2 million homes and businesses in the 5,000 square-mile Houston metropolitan area.

I am a licensed professional engineer registered in the state of Texas and serve on the boards of the March of Dimes in Houston, the University of Houston Honors College and Engineering Leadership Program, Southeastern Electric Exchange and the Texas Center for Commercialization of Electric Technologies.

My wife Jill and I are proud and busy coaches of three great kids.