

# UNIVERSITY of HOUSTON | ENGINEERING

Department of Electrical & Computer Engineering

## Annual Capstone Design Conference

April 29, 2016

The Hilton UH Hotel & Conference Center

Houston, Texas

8:30 – 8:55 am	Waldorf Astoria, Ballroom, Lobby
8:55 – 9:00 am	Opening Remarks by Dr. Len Trombetta, Pallacio Del Rio
9:00– 10:00 am	Technical Program – Oral Session A, Pallacio Del Rio
10:00 -10:30 am	Welcoming Remarks, Plaza Room <ul style="list-style-type: none"><li>• Dr. Dmitri Litvinov, Vice Provost/Dean Graduate School</li><li>• Dr. Suresh Khator, Associate Dean, College of Engineering</li><li>• Dr. Badri Roysam, Chairman, ECE Department</li></ul>
10:30 – 10:45 am	Coffee Break, Waldorf Astoria, Ballroom, Lobby
10:45 – 11:30 am	Technical Program – Oral Session B, Pallacio Del Rio
11:30 - 12:30 pm	Lunch, Waldorf Astoria, Ballroom
12:30 – 1:00 pm	Plenary Presentation “ <b>Follow the Nano Brick Road</b> ”, by Professor Teri Odom, Department of Chemistry, Northwestern University;  Waldorf Astoria, Ballroom.
1:00 – 3:00 pm	Technical Program – Poster Session, Shamrock Ballroom
3:00 – 4:00 pm	Technical Program – Oral Session C, Pallacio Del Rio
4:00 – 4:15 pm	Coffee Break, Waldorf Astoria, Ballroom, Lobby
4:15 – 4:55 pm	Technical Program – Oral Session C, Pallacio Del Rio
4:55 – 5:30 pm	Break for Team Preparation
5:30 – 6:00 pm	Elevator Talks by CDC students, Waldorf Astoria, Ballroom

# CDC 2016 Technical Program

April 29, 2016

## Session A: Oral Presentations

Time: 9:00 – 10:00 am, Pallacio Del Rio

Faculty Chairs: Dr. Diana De La Rosa-Pohl and Dr. Hesam Panahi

- 9:00 - 9:20 am     **CUBESAT SOLAR ORIENTATION**  
Julia London, Tiffany Yao, Abby Zinecker
- 9:20 – 9:40 am     **SPARKFUN AUTONOMOUS VEHICLE COMPETITION**  
Brandon Champagne, Don Nguyen, and Aaron Zamora
- 9:40 – 10:00 am   **FALCON V QUADCOPTER INSPECTION SYSTEM**  
Mark Admani, Justin Loveless, Andrew Maicke, Dominic Mak, and Justin McGee
- 10:00 – 10:30 am     **Welcoming Remarks and Addresses in Plaza**
- Dr. Dmitri Litvinov, Vice Provost/Dean Graduate School
  - Dr. Suresh Khator, Associate Dean, College of Engineering  
Dr. Badri Roysam, Chairman, ECE Department
- 10:30 – 10:45 am     Coffee Break, Waldorf Astoria, Ballroom, Lobby

## Session B: Oral Presentations

Time: 10:45 – 11:30 am, Pallacio Del Rio

Faculty Chair: Dr. Diana De La Rosa-Pohl and Dr. Hesam Panahi

- 10:45 – 11:05 am     **OMRON WIRELESS SYSTEM**  
Brendan Murphy, Md Farshid Zaman, Marcos Rodriguez, Nguyen Tran
- 11:05 – 11:30 am     **μVISION**  
Kris Griffith, Chibuisi F. Nnam, Noah W. Shubber, Kevin A. Tazehzadeh
- 11:30 - 12:30 pm     Lunch, Waldorf Astoria, Ballroom
- 12:30 - 1:00 pm     Plenary Presentation “**Follow the Nano Brick Road**” by Professor Teri Odom, Waldorf Astoria, Ballroom

## **Session C: POSTER PRESENTATIONS**

**Time: 1:00 – 3:00 pm**

**Location: Shamrock Ballroom**

## **Session D: Oral Presentations**

**Time: 3:00 – 4:00 pm, Pallacio Del Rio**

**Faculty Chair: Dr. Len Trombetta**

- 3:00 – 3:20 pm**      **IEEE REGION V ROBOTICS COMPETITION, TEAM1**  
Kain Domínguez, Michael Le, Trung Ngo, and Phat Tan Nguyen
- 3:20 – 3:40 pm**      **MERCURY ASSISTED ROBOT**  
Thien Doan, Cherub Harder, Farhad Nikouei, and Collin Voorhies
- 3:40 – 4:00 pm**      **IEEE REGION 5 ROBOTICS COMPETITION, TEAM2**  
James Boswell, Dusty Oday, and Michael Whatley
- 4:00 – 4:15 pm**      Coffee Break, Waldorf Astoria, Ballroom, Lobby

## **Session E: Oral Presentation**

**Time: 4:15 – 4:55 pm, Pallacio Del Rio**

**Faculty Chair: Dr. Len Trombetta**

- 4:15 – 4:45 pm**      **BRAIN HEALTH MONITORING KIT**  
Bradley H. Bounds, Jorge Jimenez, and Benjamin Madison
- 4:45 – 5:30 pm**      Break for Team Preparation
- 5:30 – 6:00 pm**      **Elevator Talks by CDC Students** hosted by Dr. Len Trombetta,  
Waldorf Astoria, Ballroom
- 6:00 – 6:60 pm**      **Awards Ceremony**, Waldorf Astoria, Ballroom

## Plenary Presentation “Follow the Nano Brick Road” by



Professor **TERI ODOM**  
Department of Chemistry,  
Northwestern University  
Evanston, Illinois

### ABSTRACT:

The seed ideas for manipulating matter at the nanoscale were planted in Richard Feynman’s famous speech in 1959: There’s Plenty of Room at the Bottom. Nearly 40 years after this prophetic talk, the establishment of nanoscience as a major field of research was well on its way, with major breakthroughs in synthesizing nanomaterials, characterizing their physical properties, and integrating them into devices. This talk will describe my journey into and my contributions to nanoscience. I will discuss how a confluence of resources, environment, and mentoring gave my research lab a jump-start into this exciting field as well as how collaborations and opportunities provide the fuel to continue building our yellow brick road out of nano-gold and structured nanoscale materials.

### BIOGRAPHY:

Teri W. Odom is Charles E. and Emma H. Morrison Professor of Chemistry and Professor of Materials Science and Engineering at Northwestern University. She is an expert in designing structured nanoscale materials that exhibit extraordinary size and shape-dependent optical properties. Odom has pioneered a suite of multi-scale nanofabrication tools that has resulted in flat optics that can manipulate light at the nanoscale and beat the diffraction limit, plasmon-based nanoscale lasers that exhibit tunable color, and hierarchical substrates that show controlled wetting and super-hydrophobicity. She has also invented a class of biological nanoconstructs that are facilitating unique insight into nanoparticle-cell interactions and that show superior imaging and therapeutic properties because of their gold nanostar shape.

Professor Odom has received numerous honors and awards, including being named a Fellow of the Royal Society of Chemistry; the Carol Tyler Award from the International Precious Metals Institute; a Blavatnik Young Scientist Finalist; a Radcliffe Institute for Advanced Study Fellowship at Harvard University; the ACS Akron Section Award; an NIH Director's Pioneer Award from the National Institutes of Health; the Materials Research Society Outstanding Young Investigator Award; the National Fresenius Award from Phi Lambda Upsilon and the ACS; the Rohm and Haas New Faculty Award; an Alfred P. Sloan Research Fellowship; a DuPont Young Investigator Grant; a National Science Foundation CAREER Award; the ExxonMobil Solid State Chemistry Faculty Fellowship; and a David and Lucile Packard Fellowship in Science and Engineering. Odom was the first Chair of the Noble Metal Nanoparticles Gordon Research Conference, whose inaugural meeting was in 2010. In addition, Odom was an Associate Editor for RSC's flagship journal Chemical Science (2009-2013) and is on the Editorial Advisory Boards of ACS Nano, Chemical Physics Letters, Materials Horizons, Annual Reviews of Physical Chemistry, and Nano Letters. She serves as founding Executive Editor of the new journal ACS Photonics (2013 - ). Executive Editor of the new journal ACS Photonics (2013 - ).