

# SUMMER RESEARCH OPPORTUNITY



University of Pennsylvania

# SUNFEST



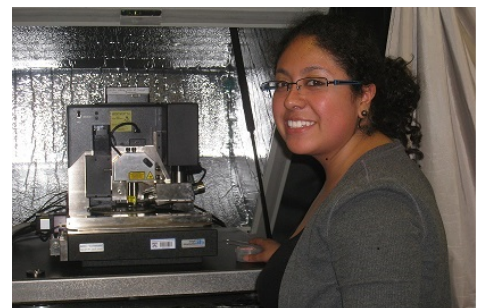
## Summer Undergraduate Fellowships in Sensor Technologies May 29, 2018 – August 4, 2018



The Center for Sensor Technologies is offering Summer Fellowships for Undergraduate Students ending their freshman, sophomore or junior year of college in engineering or science. The fellowships are funded by the National Science Foundation's REU Program. Projects involve:

- Micro and Nano Electromechanical Structures
- Nanotechnology and materials for Sensors
- Robotics and Control oriented projects
- Wireless Sensor Networks
- Sensors for Medical and Biomedical Applications
- Optical and Vision Sensors

1. Summer research experience with a stipend of \$5,250
2. Free Housing & Partial Travel Support
3. Opportunity to work on an interesting interdisciplinary topic
4. Work under the mentorship of a faculty member and a graduate student
5. Learn: How to Give Effective Presentations, How to Write Technical Reports, Applying to Graduate School, and Ethics in Engineering and Science



Application Information is available at: <http://www.seas.upenn.edu/sunfest>



Application Deadline:

February 23, 2018

Applications by women, minority students and students with disabilities are encouraged!

[sunfest@seas.upenn.edu](mailto:sunfest@seas.upenn.edu)



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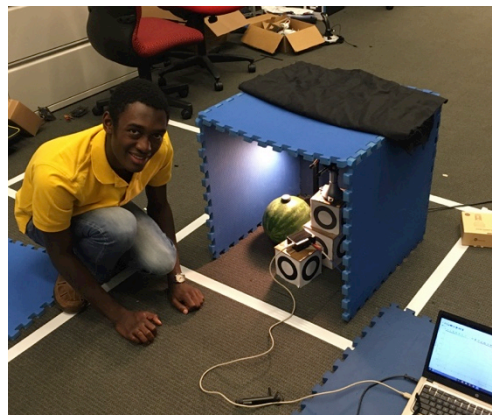


## Program Faculty

- **Haim Bau** (Mechanical Engineering - Microstructures)
- **Kostas Daniilidis** (Computer and Information Science - Tele-immersion, Robotics, Vision)
- **Andre DeHon** (Electrical and Systems Engineering - Physical implementation of computation)
- **Eric Detsi** (Material Science and Engineering – Strain Sensors based on metal muscles)
- **A.T. (Charlie) Johnson** (Physics - Nanostructures)
- **Michelle Johnson** (Medical School and Bioengineering – Prosthetics and Robots)
- **Cherie Kagan** (Electrical and Systems Engineering - Nanostructures and Materials)
- **Dan Koditschek** (Electrical and Systems Engineering - Dynamical Systems, Robotics)
- **Vijay Kumar** (Mechanical Engineering - Robotics)
- **Dan Lee** (Electrical and Systems Engineering - Machine learning, Robotics)
- **Daeyeon Lee** (Chemical and Biomolecular Eng. – Novel chemical and bio-sensors)
- **Jennifer Lukes** (Mechanical Engineering - Thermal, fluid, and mass transport phenomena at the nanoscale)
- **Rahul Mangharam** (Electrical and Systems Engineering - Wireless Sensor Networks, Medical Devices)
- **Jorge J. Santiago-Aviles** (Electrical and Systems Engineering - Materials, ultrasound sensors)
- **Cynthia Song** (Mechanical Engineering – Origami based sensors and actuators)
- **Camillo J. Taylor** (Computer and Information Science - Robotics and Imaging)
- **Jan Van der Spiegel** (Electrical and Systems Engineering –
- **Mark Yim** (Mechanical Engineering - Modular reconfigurable robots and locomotion, PolyBot)

## Sample Projects (more information at: <http://www.seas.upenn.edu/sunfest/sample-projects.php>)

- Self-Cleaning Vapor Sensors Based on Nanoporous TiO<sub>2</sub> Bragg Reflector (Prof. Daeyeon Lee, CBE)
- Touch sensors for brain-machine interface applications (Prof. Timothy Lucas, Neurosurgery; Prof. Jan Van der Spiegel, EE)
- Sensors for Tactile Feedback for Bilateral Activities of Daily Living Exercise Robot (Bi-Adler) - (Prof. Michelle Johnson, Med. Sch. & Bio Eng.)
- Color-changing and Force-recording Mechanochromic Sensor Films from Elasto-plastic Polymer Nanocomposites (Prof. Shu Yang, MSE)
- Attitude sensor for novel flying devices (Prof. Mark Yim, Mech. Eng)
- Understanding and Exploiting Data from Hyperspectral Cameras for Agriculture (Prof. CJ Taylor, CIS)
- An Aerially Deployable Environmental Sensor Probe (Prof. Vijay Kumar, Mech. Eng.)
- On-Chip Introspective Sensing and Adaptation (Prof. Andre DeHon, EE)
- Molecular Diagnostic Sensors of Infectious Diseases at the Point of Care (Haim H. Bau, Mech. Eng)
- Designing Temperature-Responsive Nanomaterials for Sensing Local Environment (Jennifer Lukes, Mech. Eng.)
- Nanocrystal-Based Plasmonic Nanoantenna Arrays as Soil pH Sensors (Prof. Cherie Kagan, EE)
- Biosensors based on 2-D Materials (A.T. Charlie Johnson, Physics & Astronomy, and EE)



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Copy of this flyer is available at: <http://www.seas.upenn.edu/sunfest/flyer.pdf>