



USC University of
Southern California

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Ming Hsieh Department
of Electrical Engineering

Munushian Visiting Seminar Series

Paul McEuen

John A. Newman Professor of Physical Science, Cornell University

Director, Kavli Institute at Cornell for Nanoscale Science

Cell-sized Sensors and Robots

Friday, February 15, 2019

11:00 - 12:30 pm, EEB 132

Refreshments will be served

Abstract: Fifty years ago, the Nobel Prize-winning physicist Richard Feynman claimed that a revolution was underway where information, computers, and machines would be shrunk to incredibly small dimensions. History has proven him mostly right: integrated circuits and Moore's law have given us cell phones, the internet, and artificial intelligence. But the third leg of Feynman's dream, the miniaturization of machines, is only just getting underway. Can we create functional, intelligent machines at the scale that biology does? The size of, say, a single-celled organism like a Paramecium? And if so, how? In this talk, I'll take a look at some of the approaches being explored, focusing on a Cornell effort to combine microelectronics, optics, paper arts, and 2D materials to create a new generation of cell-sized smart, active sensors and microbots that are powered and communicate by light.



Bio: Paul McEuen is the John A. Newman Professor of Physical Science at Cornell University and Director of the Kavli Institute at Cornell for Nanoscale Science. His research explores the electronic, optical, and mechanical properties of nanoscale materials; he is currently excited about using these materials to construct functional micron-scale machines. He is also a novelist, and his scientific thriller *SPIRAL* won the debut novel of the year from the International Thriller Writers Association. He is a fellow of the American Physical Society, the National Academy of Sciences, and the American Academy of Arts and Sciences.