UCDAVIS
Energy and Efficiency Institute

Special Seminar

Think Globally, Breathe Locally: Sensing Air Pollution for a Planet of Cities

Tuesday - February 5 - 2019
2:00 to 3:00pm
Bainer Hall, Room 2130
University of California, Davis



Joshua Apte

Assistant Professor, University of Texas at Austin

Air pollution is the leading global environmental risk for premature death and a persistent cause of health disparities in US cities. Future choices about energy and transportation will have profound impacts on how the levels and spatial patterns of air pollution evolve. Yet widespread gaps in our current air measurement infrastructure hinder our understanding of what we breathe. Here, I highlight two highly scalable approaches for understanding how urban air pollution varies in space and time, locally and globally. First, using satellite remote sensing observations, I show how fine particle concentrations have evolved year-by-year in every city on the planet over the past two decades, resulting in a striking divergence in air quality among low- and high-income nations. Second, I present a new approach for developing exceptionally high-resolution air quality maps for urban areas using specially instrumented Google Street View cars. With data from the San Francisco Bay Area and beyond, I demonstrate how air pollution varies sharply within our cities and neighborhoods — and the insights these data reveal for designing healthier urban environments.

Bio: Joshua Apte is an Assistant Professor of Environmental Engineering at the University of Texas at Austin. His research group uses field measurements, mathematical models and large datasets to understand the relationships between air pollution emissions, population exposure, environmental justice and human health. Previously, Dr. Apte was the inaugural ITRI-Rosenfeld Postdoctoral Fellow in the Energy Technologies Area at Lawrence Berkeley National Laboratory and a Fulbright-Nehru Fellow at the Indian Institute of Technology, Delhi. He holds a Ph.D. in Energy and Resources from UC Berkeley and earned his Sc.B. from Brown University.

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