

Transportation Technology and Policy GRADUATE GROUP



<https://its.ucdavis.edu/students/graduate-group-in-transportation-technology-and-policy/>

The Graduate Group in Transportation Technology and Policy (TTP) prepares students to be research, technical, and policy leaders in creating a sustainable transportation future. Its unique interdisciplinary preparation is designed to meet the world's growing need for highly qualified, thoughtful, and dedicated transportation experts. The interdisciplinary approach transcends the boundaries of traditional academic disciplines, and builds skills and understandings across engineering, social and behavioral sciences, ecology, and management.

TTP is hosted by the Institute of Transportation Studies at the University of California, Davis (ITS-Davis), the world's top university for the study of sustainable transportation. ITS-Davis leads the National Center for Sustainable Transportation, a six-university consortium funded by the U.S. Department of Transportation.

Degree Offerings

- M.S. and Ph.D.

Program Highlights

- Internationally recognized, respected program
- Students come from diverse academic backgrounds
- Relevant learning experiences
- Unique, flexible interdisciplinary approach
- Three program tracks:
 - Vehicles and fuels
 - Demand and behavior
 - Infrastructure and operations
- Graduates employed at all levels of government, academia, industry and non-profit organizations

UC Davis Research Programs and Partnerships

- Institute of Transportation Studies
- National Center for Sustainable Transportation
- Plug-in Hybrid & Electric Vehicle Research Center
- Sustainable Transportation Energy Pathways (STEPSP_{Plus})
- China Center for Energy and Transportation
- Energy and Efficiency Institute
- Policy Institute for Energy, Environment, and the Economy
- 3 Revolutions Future Mobility Program
- Pavement Research Center
- Bicycling_{Plus} Research Collaborative

Research Focus Areas

- Environmental Impacts of Transportation
- Travel Demand Modeling
- Land Use and Transportation Interactions
- Adoption of Advanced Vehicle Technologies
- Transportation Systems Analysis and Design
- Sustainable Freight and Logistics
- Transportation Economics
- Transportation Planning and Policy
- Automated, Electric, and Shared Mobility
- Active Transportation and Micro-Mobility

Transportation Technology and Policy

FACULTY

Gwen Arnold

(Environmental Science & Policy)

Energy policy and planning; use and interpretation of scientific knowledge/information in environmental policy decisions and processes

Francis Assadian

(Mechanical and Aerospace Engineering)

Mathematical modeling and simulation of dynamic systems-bond graph approach; vehicle dynamics; global chassis control systems; alternative powertrain; energy optimization; automatic and robust control

David Bunch

(Graduate School of Management)

Consumer choice behavior; choice modeling; new product development and introduction; travel behavior; vehicle choice and alternative fuel vehicles

James Bushnell

(Economics)

Industrial organization and regulation; energy economics and policy; environmental economics; game theoretic optimization models

Giovanni Circella

(Institute of Transportation Studies)

Travel behavior, attitudes and lifestyles; travel demand forecasting; discrete choice modeling; emerging trends in shared mobility services, connected and autonomous vehicles

Paul Erickson

(Mechanical and Aerospace Engineering)

Electric and hybrid drive vehicles; fuel cell vehicles and power systems; hydrogen production and utilization; internal combustion engines; solar energy utilization

Yueyue Fan

(Civil and Environmental Engineering)

Network optimization and control; stochastic system modeling and analysis; risk management of transportation networks; applied mathematics/computation on transportation systems

Beth Ferguson

(Design)

Bike share; autonomous EV share systems; solar charging; public transit; sustainable urban design; ecological materials; social entrepreneurship

Susan Handy

(Environmental Science & Policy)

Relationships between transportation and land use; the impact of land use on travel behavior; factors influencing bicycling as a mode of travel; reducing automobile dependence

John T. Harvey

(Civil and Environmental Engineering)

Pavement materials, design, analysis, rehabilitation, construction, management, and quality; pavement environmental life cycle assessment

Rebecca Hernandez

(Land, Air and Water Resources)

Energy geography; energy knowledge systems; land use, land sparing, and energy infrastructure planning; food-energy-water nexus; sustainable solar energy.

Miguel A. Jaller

(Civil and Environmental Engineering)

Industrial and transportation engineering; sustainable transportation systems; humanitarian logistics; supply chain management; operations research

Bryan Jenkins

(Biological and Agricultural Engineering)

Energy systems in agriculture; biomass fuel production; thermal conversion and environmental impacts; combustion and gasification of biomass fuels; properties of fuels; system models

Alan Jenn

(Institute of Transportation Studies)

Alternative fuel vehicle adoption; transitions to sustainable energy systems; quantitative policy analysis; big data statistical analysis

Alissa Kendall

(Civil and Environmental Engineering)

Life cycle modeling; energy systems; construction materials, and buildings, with the goal of developing sustainable systems

Xinfan Lin

(Mechanical and Aerospace Engineering)

Battery system modeling, diagnostics, and controls; electric vehicles and automotive systems; vehicle-to-grid

Frank J. Loge

(Civil and Environmental Engineering)

Water-energy nexus; water and energy efficiency in urban and agriculture systems; sustainable building design; data analytics

Mark Lubell

(Environmental Science & Policy)

Human behavior; role of governance institutions in solving collective action problems and facilitating cooperation

Alan Meier

(Environmental Science & Policy)

How people and equipment use energy; opportunities to reduce energy consumption

Sabbie Miller

(Civil and Environmental Engineering)

Life cycle assessment; alternative materials development; sustainability and structural design

Erich Muehlegger

(Economics)

Industrial organization; public finance; economic regulation; environmental policy

Debbie Niemeier

(Civil and Environmental Engineering)

Air quality; climate change; energy – land use; infrastructure funding policy

Kevin Novan

(Agricultural and Resource Economics)

Energy and environmental economics; electricity sector policy design and implementation; renewables; social costs and benefits; residential energy efficiency investments

Jae Wan Park

(Mechanical and Aerospace Engineering)

Proton exchange membrane (PEM) fuel cells performance and stability; lithium ion battery thermal management; second life EV batteries; hybrid vehicle power train design, simulation

Dave Rapson

(Economics)

Energy and environmental economics; industrial organization; applied econometrics

Simon Sadler

(Design)

Urbanism; design; bicycles and cars

Tyler Scott

(Environmental Science & Policy)

Regulation and policymaking; utility and infrastructure governance; food-energy-water nexus; collaborative governance

Jeff Sherman

(Psychology)

Cognitive processes underlying social psychology and behavior; stereotypes and prejudice and how they affect perceptions and memories; how biases are efficient or even automatic

Fraser Shilling

(Road Ecology Center)

Transportation ecology; interactions of transportation systems with ecosystems and human communities;

Daniel Sperling

(Civil and Environmental Engineering, Environmental Science & Policy)

Transportation, energy, and climate policy; "3 Revolutions" of automated, shared, and electric vehicles

Gil Tal

(Institute of Transportation Studies)

Travel behavior; alternative fuel vehicles; travel demand modeling; transportation planning; environmental policy; non-motorized transportation; data in transportation planning process

Stephen Wheeler

(Landscape Architecture + Environmental Design)

Climate change planning for mitigation and adaptation; evolution of built landscapes in metropolitan regions; theory and practice of sustainable development

H. Michael Zhang

(Civil and Environmental Engineering)

Transportation systems management; traffic operations; traffic flow modeling; air pollution

Contact Information

Admission: <https://its.ucdavis.edu/students/graduate-group-in-transportation-technology-and-policy/>

Priority Deadline: January 15 • **General Deadline:** April 1 • **Space Available Deadline:** June 1

Graduate Group Coordinator:

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