

Wednesday, 21 September 2016

UCLA

Transportation Studies Orientation



Why study transportation?

- A different approach at UCLA compared to almost anywhere else
- Explicitly integrated with other parts of the curriculum
 - Community economic development
 - Design & development
 - Environmental analysis and policy
 - Regional and international development
- Students encouraged to “double-major”

Why study transportation?

- Technical, but not technocratic
- A reputation for game-changing research
 - Welfare to work
 - Federal tax code
 - Transit and civil rights
 - Performance-based parking
 - Complete streets/parklets
 - Costs (and benefits) of traffic congestion
 - Transit safety

Why study transportation?

- Currently the largest concentration area
 - With a very large array of course choices
- Demanding courses mean that students are very well prepared for professional practice

What do graduates do?

- Transportation planners at the Los Angeles Metropolitan Transportation Authority develop new, smart “rapid bus” services to speed commuters along congested streets

What do graduates do?

- Transportation policy analysts with the California Department of Transportation overseeing implementation of “smart highway” technologies

What do graduates do?

- Transportation planners with consulting firms developing more holistic, multi-modal measures of street and highway performance

What do graduates do?

- Transportation analysts with a planning advocacy organizations in Washington, DC organize and lobby for improved alternatives to private vehicle travel

What do graduates do?

- Transportation analysts using new computer models to forecast changes in development patterns and travel behavior across travel modes

What do graduates do?

- Transportation planners with the Federal Transit Administration develop programs to encourage pedestrian - and bicycle-friendly developments around major transit stops and stations

What do graduates do?

- Pedestrian and bicycle planners... everywhere it seems

What do graduates do?

- UCLA-trained transportation faculty at Arizona State, Berkeley, Cal Poly, Clemson, Florida State, Maryland, Rutgers, SUNY Buffalo, Texas-Arlington, Texas-Austin, UC Irvine, USC, Virginia, etc. teach courses and conduct research on a wide array of transportation policy and planning topics
- More than any other University

And on and on...

- Autonomous Vehicle Lead, GoogleX
- Chief Financial Officer, LA Metro
- Director of Transportation Planning, Port of Long Beach
- Principal of Integrated Planning, ARUP
- Product Manager, Iteris Corporation
- Vice-President, Houston METRO

Internships and Jobs

- Public transportation organizations
 - LA MTA, Bay Area MTC, FTA, OCTA
- Transportation work in other public organizations
 - US EPA, City of LA, Cal ARB, City of Santa Monica

Internships and Jobs

- Private sector
 - Cambridge Systematics, Fehr & Peers, Parsons Brinkerhoff
- Advocacy organizations
 - TfA, CfCA, EMBARQ, EDF, AAA
- Research organizations
 - RAND, LAO, GAO, UCLA

Related Transportation Fields

- Logistics and Supply Chain Management
 - Business schools, operations research, computer science
- Transportation Engineering
 - Design
 - Operations
- Transportation Geography
 - spatial Analysis
 - GIS

UCLA Transportation Faculty

- Most combine their work in transportation with work in other, related areas of Public Policy and Urban Planning
- All regularly hire students to work on a wide variety of research projects

Luskin Transportation Faculty

- **Evelyn Blumenberg** (Urban Planning): Economic development policy, labor markets, gender studies



- Role of transportation in reducing poverty/facilitating employment
- Transportation needs of the very poor, and policies to address their needs
- Travel patterns and needs of teens, immigrants
- Evacuation of poor during disasters
- Managing the conflicting purposes of sidewalks

Luskin Transportation Faculty

- **Randall Crane** (Urban Planning): Urban economics, housing markets, environmental policy



- The links between land use and travel choices
- Transportation and sprawl development
- Emerging trends in travel demographics
- Urbanization and transportation in the (rapidly) developing world

Luskin Transportation Faculty

- **J.R. DeShazo** (Public Policy): Public decision-making, devolution, non-market valuation and public finance



- Electrification of vehicle fleet
- Incentives to promote use of low-emissions vehicles
- Privatization of public transit services
- Travel patterns of domestic and international tourists
- Public policy responses (including transportation) to climate change
- Analyzing vehicle emissions at a micro-scale

Luskin Transportation Faculty

- **Anastasia Loukaitou-Sideris** (Urban Planning):
Transportation, Land Use, and Urban Design



- Factors influencing development around rail transit stations
- Retrofitting aging streetcar corridors
- Effects of transportation stop, station, and system design on crime and terrorist activity
- Development impacts of high-speed rail
- Gentrification of transit-oriented developments

Luskin School Transportation Faculty

- **Michael Manville** (Urban Planning): Transportation policy, Land use politics, public finance



- Measuring voters' willingness to pay for transportation improvements
- Trends in public transit subsidies and ridership
- Effects of parking pricing on driving and traffic
- Capitalizing transportation improvements into development costs
- land prices
- The rise of shared mobility like Uber and Lyft

Luskin Transportation Faculty

- **Paul Ong** (Asian-American Studies, Social Welfare, Urban Planning): Labor Economics, Poverty Policies, Demography



- Links between metropolitan development patterns, transportation, and employment outcomes
- Transportation and welfare reform
- Racial/ethnic patterns of transportation access (autos/insurance)
- Gentrification of transit-oriented developments

Luskin Transportation Faculty

- **Taner Osman** (Lewis Center and ITS)



- Regional economic development
- Costs (and benefits) of traffic congestion

Luskin School Transportation Faculty

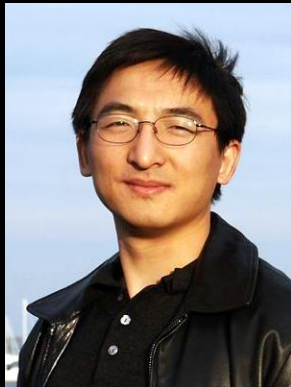
- **Brian D. Taylor** (Urban Planning): Transportation policy and planning



- Influence of fiscal politics on transportation systems and travel
- History and future of highway taxes and finance
- Measuring equity in travel behavior and transportation finance
- Links between transit subsidies and performance
- Demographics patterns of travel
- The role of travel behavior in cognitive mapping of opportunities
- Role of perceptions in shaping travel choices, policy
- Thinking outside of the bus
- Politics of traffic congestion, and its relationship to transit use

Luskin School Transportation Faculty

- **Rui Wang** (Urban Planning): Environmental policy, urban economics, transport/environmental impacts



- Transportation, environmental quality, and growth of Chinese cities
- Role of infrastructure investment in development
- Impacts of economic growth on the environment outside of the U.S.

Visiting Luskin Transportation Faculty

- **Mohja Rhoads** (South Bay Cities Council of Governments): Transportation geography, travel behavior analysis



- **Gaurav Srivastava** (AECOM): Transportation and Land Use: Urban Design Studio



Luskin School Transportation Emeriti Faculty

- **Matthew Drennan** (Public Policy and Urban Planning): Economic analysis and methods
- **Robin Liggett** (Architecture and Urban Planning): Computer-aided design, analytical methods



Luskin School Transportation Emeriti Faculty

- **Donald Shoup** (Urban Planning): Parking policy and planning; urban economics and public finance; sidewalks and ADA access
- **Martin Wachs** (Urban Planning): Transportation policy and planning, aging and travel, planning ethics, transportation finance



Luskin School Transportation Lecturers

- **Madeline Brozen** (Lewis Center/ITS):
Complete streets, GIS applications in planning
- **Herbie Huff** (Urban Planning/Lewis Center):
Bicycle planning, pedestrian safety, GIS applications in planning
- **Ryan Snyder** (Urban Planning):
Bicycle and pedestrian planning consultant, TDM, Complete Streets
- **Norman Wong** (Lewis Center/ITS):
Data management and geographic information systems (GIS) in planning and transportation



Transport faculty outside of Luskin School

- **Eric Avila** (Chicano Studies, History): Cultural studies of transportation in cities
- **William A.V. Clark** (Geography): Travel demographics, suburbanization
- **Sam Coogan** (Electrical Engineering & Computer Science): Traffic modelling; big data
- **Mario Gerla** (Computer Science): Intelligent transportation systems
- **Sam Morrissey** (Civil & Environmental Engineering):
Traffic engineering

Transport faculty outside of Luskin School

- **Walter Okitsu** (Civil & Environmental Engineering):
Transportation and traffic engineering
- **Susanne Paulson** (Atmospheric & Oceanic Sciences):
Mobile source air pollution monitoring
- **Izhak Rubin** (Electrical Engineering and Computer Science): Traffic optimization and modelling
- **Arthur Winer** (Environmental Health Sciences):
Environmental impacts of transportation systems

Graduate Degree Programs

- Three in this building

Transportation Degree Programs

- **Master of Urban and Regional in Urban Planning (MURP) – Transportation Policy and Planning**

Transportation Degree Programs

- **Master of Public Policy (MPP) –
Transportation Policy and Planning**

Transportation Degree Programs

- **Doctor of Philosophy in Urban Planning (PhD) – Transportation Policy and Planning**

What will you learn?



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What will you learn?

- We endeavor to train reflective practitioners
 - People who know the nuts and bolts of transportation policy and planning
 - But who also think critically and ask big questions (“why?” and not just “how?”)
 - We challenge conventional wisdom to avoid weak “echo chamber” thinking
 - Content is historical, technical, political, causal, and challenging

Graduate transportation policy and planning courses

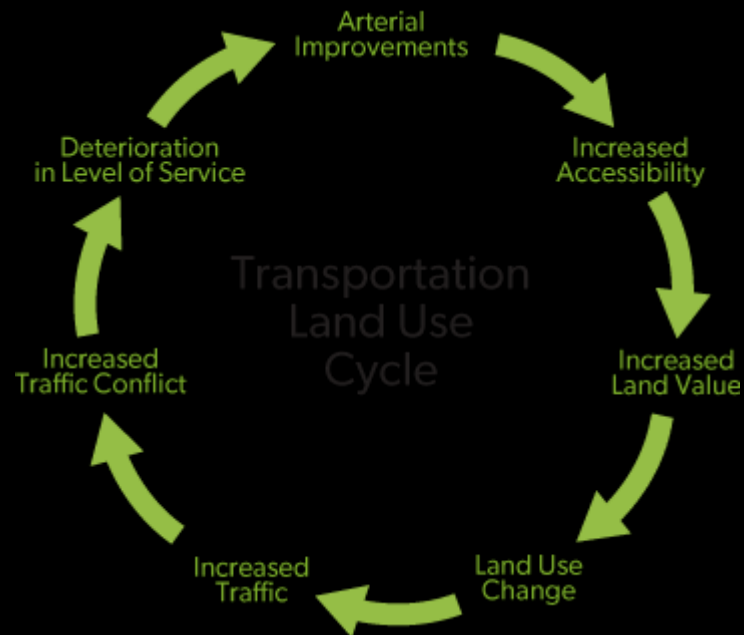
- A dozen or more graduate transportation courses offered each year
 - 13 courses last and this year
- Almost certainly the most offered at any public policy or urban planning program anywhere

Graduate transportation policy and planning courses

Offered in three course groups:

1. **Transportation and Land Use Courses**
2. **Transportation Methods and Applications Courses**
3. **Transportation Policy Courses**

Transportation and Land Use Courses



Transportation and Land Use Courses

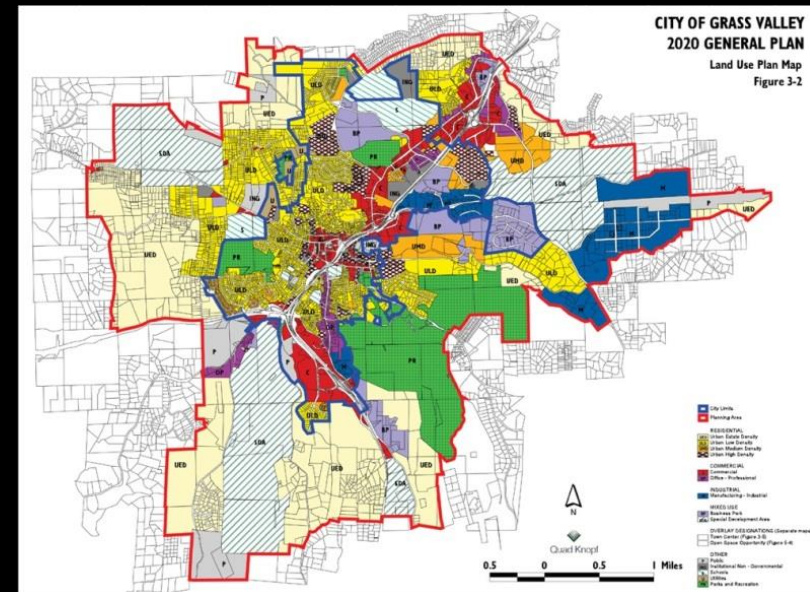
- **Transportation and Land Use: Urban Form**

- PP 220/UP 250

Historical evolution of urban form and transportation systems, intra-metropolitan location theory, recent trends in urban form, spatial mismatch hypothesis, jobs/housing balance, transportation in central and polycentric cities, transportation and new urbanism, and normative debates over “good” urban form.

- **Manville**, winter 2017

- *Offered* 2017-18



Transportation and Land Use Courses

- **Transportation and Land Use: Parking**

- **UP 251**

This course examines the often overlooked role of parking and parking policy in shaping both travel and development decisions. Students will focus on the analytical tools behind local land use and transportation decision-making by working on local real-world planning issues.

- **Shoup, winter 2017**

- *Probably will be offered 2017-18*



Transportation and Land Use Courses

- **Transportation and Land Use: Urban Design Studio**

- **UP 252**

This studio (a) examines and critically analyzes transportation-oriented urban design projects for their effectiveness through case studies, presentations, and discussions in order to draw useful lessons, and (b) develop a land use plan, a development program, an urban design strategy, and a development proforma for a project in the Los Angeles metropolitan region.

- **Srivastava, spring 2017**

- *Offered 2017-18*



Transportation Methods and Applications Courses



Transportation Methods and Applications Courses

- **Introduction to Transportation Engineering**

- **C&EE 180**

General characteristics of transportation systems, including streets and highways, rail, transit, air, and water. Capacity considerations including time-space diagrams and queuing. Components of transportation system design, including horizontal and vertical alignment, cross sections, earthwork, drainage, and pavements.

- **Staff**, spring 2017

- *Offered in 2017-18*



Transportation Methods and Applications Courses

- **Transportation Systems Analysis**

- **C&EE 181**

- Applications of traffic flow theories; data collection and analyses; intersection capacity analyses; simulation models; traffic signal design; signal timing design, implementation, and performance evaluation; Intelligent Transportation Systems concept, architecture, and integration.

- **Staff, fall 2016**

- *Offered in 2017-18*



Transportation Methods and Applications Courses

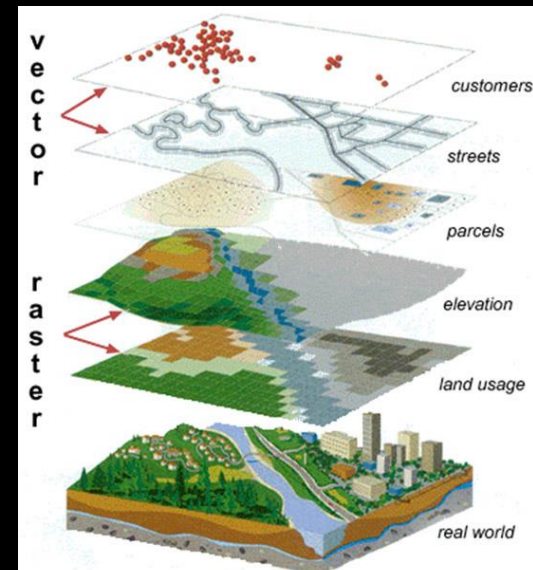
- **Advanced Geographic Information Systems**

- **PP 224B/UP 206B**

Principles and skills of geographic analysis and modeling; managing, processing, and interpreting spatial data. Especially useful for students interested in environmental, demographic, suitability, and transportation-related research. Scripts (Avenue), modeling (Spatial Analyst), network analysis, and transportation modeling (TransCAD).

- **Brozen/Wong**, spring 2017

- *Offered 2017-18*



Transportation Methods and Applications Courses

- **Travel Behavior Analysis**

- **PP 221/UP 253**

Descriptions of travel patterns in metropolitan areas, recent trends and projections into the future, overview of travel forecasting methods, trip generation, trip distribution, mode split traffic assignment, critique of traditional travel forecasting methods and new approaches to travel behavior analysis.

- **Rhoades, spring 2017**

- *Not offered in 2017-18*



Transportation Methods and Applications Courses

- **Bicycle and Pedestrian Planning**

- **UP 254**

A hands-on course on bike and pedestrian planning applications course taught by an experienced planning practitioner. The course teaches about the theories behind promoting walking and cycling, the research on the most effective approaches, and student fieldwork to learn the nuts and bolts of the field.

- **Snyder, winter 2017**

- *Offered in 2017-18*



Transportation Methods and Applications Courses

- **Transportation Policy and Planning**

- **PP 244/UP 255**

Examination of how planners analyze, manage, and operate transportation systems. Measuring system performance, intelligent transportation systems, transportation system demand management, parking management, freight movement and facilities, public transit evaluation and management, paratransit, bicycle and pedestrian planning, transportation for elderly and disabled.

- **Not offered 2016-2017**

- *Offered fall of 2017*



Transportation Policy Courses



Transportation Policy Courses

- **Special Topics in Transportation Policy and Planning:
Planning and the Rise of Shared Mobility**

- **UP 249**

This special topics seminar will examine the rise of shared mobility services and consider what roles planners and planning might play in guiding (or discouraging) their development in the years ahead. Such planning is today alarmingly rare. Given this, a central goal of this course will be to consider the tools and information needed to understand and plan intelligently for shared mobility in the years ahead so that its promise is harnessed and perils avoided.

- **Manville/Taylor, fall 2016**

- *Not offered 2017-18*



Transportation Policy Courses

- **Special Topics in Transportation Policy and Planning:
Transportation Megaprojects**

- **UP 249**

Transportation infrastructure includes some projects of enormous scale that have some huge challenges in common – enormous costs and complex benefits, maintaining political and public commitment over several decades, forecasting patronage and cost, managing risks. In this class we will examine the problems and challenges associated with megaprojects relying on theoretical works related to governance, policy, and decision making and a rich literature provided by many case studies of megaprojects. How can societies plan and manage complex projects of enormous scale and scope and great uncertainty?

- **Wachs, spring 2017**

- *Not offered 2017-18*

Transportation Policy Courses

- **Transportation Policy and Planning**

- **PP 244/UP 255**

Examination of how planners analyze, manage, and operate transportation systems. Measuring system performance, intelligent transportation systems, transportation system demand management, parking management, freight movement and facilities, public transit evaluation and management, paratransit, bicycle and pedestrian planning, transportation for elderly and disabled.

- **Not offered 2016-2017**

- *Offered fall of 2017*



Transportation Policy Courses

- **Transportation Economics, Finance, and Policy**
 - PP 222/UP 256

Overview of transportation finance and economics; concepts of efficiency and equity in transportation finance; historical evolution of highway and transit finance; current issues in highway finance; private participation in road finance, toll roads, road costs and cost allocation, truck charges, congestion pricing; current issues in transit finance; transit fare and subsidy policies, contracting and privatization of transit services.

- **Osman**, winter 2017
- *Probably offered 2017-18*



Transportation Policy Courses

- **Transportation and Economic Outcomes**

- **UP 257**

This course examines the role of urban transportation in shaping the location decisions of firms and workers, and the links between them. A particular focus of the course is on the role of transportation and transportation policy in poverty, employment, and community economic development.

- **Blumenberg, fall 2016**

- *Not offered 2017-18*



Transportation Policy Courses

- **Transportation and Environmental Issues**

- **PP 223/UP 258**

Regulatory structure linking transportation, air quality, and energy issues, chemistry of air pollution, overview of transportation-related approaches to air quality enhancement; new car tailpipe standards; vehicle inspection and maintenance issues; transportation demand management and transportation control measures; alternative fuels and electric vehicles; corporate average fuel economy and global warming issues; growth of automobile worldwide fleet; the automobile in the sustainability debate.

- **Manville/Wachs, fall 2016**

- *Offered 2017-18*



Transportation Policy Courses

- **Comparative International Transportation Workshop**

- UP 259

This course compares and contrasts transportation policy and planning issues in Los Angeles and another world city. Students spend one week in a city like Berlin, Bombay, or London meeting with planning officials, urban and transportation scholars, and activists to learn first-hand about the transportation issues facing people in these cities. The course focuses on access – to employment, housing, culture, etc. – and the role of transportation policy and planning plays in facilitating access.

- *Offered occasionally*



Transportation Area of Concentration Requirements

- **MPP Students:** Consult with the Public Policy Student Affairs Officer
- **PhD Students:** Consult with your adviser

MURP Transportation Area of Concentration Requirements

1 from each course group (3 total)

A. Transportation and Land Use Courses

B. Transportation Methods and Applications Courses

C. Transportation Policy Courses

+ 2 from any course group

= 5 courses

MURP Transportation Area of Concentration Requirements (1 from each course group (3 total) + 2 from any course group = 5 courses)

- **Course Group 1: Transportation and Land Use Courses**
 - Transportation and Land Use: Urban Form (urbanization course)
 - Transportation and Land Use: Parking
 - Transportation and Land Use: Urban Design Studio

MURP Transportation Area of Concentration Requirements (1 from each course group (3 total) + 2 from any course group = 5 courses)

- **Course Group 1: Transportation and Land Use Courses**
 - Transportation and Land Use: Urban Form (urbanization course)
 - Transportation and Land Use: Parking
 - Transportation and Land Use: Urban Design Studio

- **Course Group 2: Transportation Methods and Applications Courses**
 - Introduction to Transportation Engineering (C&EE course)
 - Transportation Systems Analysis (C&EE course)
 - Advanced Geographic Information Systems
 - Travel Behavior Analysis
 - Bicycle and Pedestrian Planning
 - Transportation Policy and Planning

MURP Transportation Area of Concentration Requirements (1 from each course group (3 total) + 2 from any course group = 5 courses)

- **Course Group 1: Transportation and Land Use Courses**
 - Transportation and Land Use: Urban Form (urbanization course)
 - Transportation and Land Use: Parking
 - Transportation and Land Use: Urban Design Studio
- **Course Group 2: Transportation Methods and Applications Courses**
 - Introduction to Transportation Engineering (C&EE course)
 - Transportation Systems Analysis (C&EE course)
 - Advanced Geographic Information Systems
 - Travel Behavior Analysis
 - Bicycle and Pedestrian Planning
 - Transportation Policy and Planning
- **Course Group 3: Transportation Policy Courses**
 - Transportation Policy and Planning
 - Transportation Economics, Finance, and Policy
 - Transportation and Economic Outcomes
 - Transportation and Environmental Issues
 - Comparative International Transportation Workshop
 - Special Topics in Transportation Policy and Planning

We have lots more than classes

- Fall
 - Arrowhead land use-transport-environment symposium
 - Shared mobility lecture series
 - Transportation and environmental issues lecture series
- Winter
 - TRB conference
 - UC student conference
- Spring
 - Martin Wachs Distinguished Lecture in Transportation
 - Downtown transportation/land use event
 - Transporters party

Professional Associations

- Student affiliate of the Transportation Research Board of the National Academies of Science, Engineering, and Medicine (TRB)
- Student membership in the Transportation Division of the American Planning Association (APA)
- Student membership in the Institute of Transportation Engineers (ITE)
- Student affiliate in the Women's Transportation Seminar

Don't forget to sign-up...

its-students-ucla@googlegroups.com

Questions?

Transportation Studies at UCLA: *An Overview*

Thank you

