



## **PPHA 41021 / PBPL 28925: Health Impacts of Transportation Policies**

(also ENST/HLTH/ARCH 28925)

[Note: This is a tentative syllabus based on last year's course]

### **Instructor:**

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**Background and Goals:** Transportation systems affect human health through complex pathways. Governments invest in transport infrastructure because it encourages economic growth and mobility of people and goods, which have direct and indirect benefits to health. Yet, an excessive reliance on motorized modes of transport harms population health, the environment and social wellbeing. The impact on population health is substantial: Globally, road traffic crashes kill over 1.3 million annually. Air pollution, to which transport is an important contributor, kills another 3.2 million people. Motorized modes of transport are also an important contributor to sedentary lifestyles. Physical inactivity is estimated to cause 3.2 million deaths every year, globally. This course introduces students to the pathways through which transport systems, especially road transport systems, affect population health, environment and wellbeing. The course has a strong focus on road safety, which is the most important health impact. The goal of this course is to prepare students in designing transportation systems and policies that are safe, sustainable and equitable. About half the sessions will involve guest lectures, typically practitioners with experience and expertise in transportation policy.

At the conclusion of this course, students will be able to

- Evaluate the pathways through which transport systems impact human health around the world
- Describe the population health burden due to traffic crashes, vehicular air pollution, and physical inactivity
- Discuss the evolution of transportation safety policies over the last century
- Describe the most important road safety interventions

**Prerequisites:** None

### **How this class will work:**

- Lectures will be in-person on Mondays, 4:30 pm-7:20 pm
- Required and suggested readings are on the course website and should be read before the class period.
- Students are expected to actively participate in class, actively participate in weekly online discussion forums, and do a homework assignment and group project.
- Attendance policy: Students are expected to attend every class. If circumstances arise that prohibit a student from attending class, they should email the instructors in advance. Missing class without the consent of the instructor will result in a grade penalty.



### **Student assignments, grading policies and procedures:**

- Online Discussion Forum Participation (40%): Every week, a journal article will be posted on the course website along with a question for discussion. Students are expected to write a short preliminary response to the question(s) posed followed by group discussion. Students will not be able to see the responses of other students until they have posted their own responses.
- Active Participation in the Classroom (20%): In addition to regular lectures, the class will have several guest lectures. Students are expected to actively participate with questions and comments.
- Homework Assignment (10%): One homework assignment that aims to help with your class projects
- Project (30%): Students will work in teams to develop a project that describes the potential health impacts of a recent/forthcoming policy or change.

### **Instructor Office Hours**

Students should email instructors and request an appointment.

**Teaching Assistant:** TBD

### **General Resources Available to Students**

Include any texts and links as desired:

- [Harris Academic Support Programs and Handbook](#)
- [Student Wellness](#)
- [UChicagoGRAD](#)

### **Harris School and University of Chicago Policies**

Include any text and links as desired to highlight or emphasize issues related to academic integrity, disability accommodations, diversity and inclusion, and video and audio recordings.

- [Harris School Policies](#)
- [University General Policies](#)
- [University Academic Policies](#)
- Policy on audio and video [recordings](#)

## **Lecture Schedule**

[Note: lecture dates shown are not current]

### **OVERVIEW: Why do we build transport systems? What are the negative externalities?**

March 30: Lecture: Introduction to course

REQUIRED READINGS/ACTIVITIES

- [World Bank 2014 Transport for Health Report](#)

SUGGESTED READINGS/ACTIVITIES

- [Litman 2013 Transportation and Public Health](#)

April 1, Lecture: Pathways through which transport systems impact health

REQUIRED READINGS/ACTIVITIES

- [Kjellstrom 2003 Comparative risk assessment of transport policies](#)
- [Cole 2019 - Health Impact Assessment of Transportation Project](#)



SUGGESTED READINGS/ACTIVITIES

- [Pathways to a healthy Decatur - HIA](#)

**HISTORIC CONTEXT: Evolution of transport safety paradigms**

April 6: Lecture: History of road safety in OECD countries - 1

REQUIRED READINGS/ACTIVITIES

- [Bhalla 2018 Effect of traffic safety interventions globally](#)
- [Bhalla 2007 A risk-based method for modeling traffic fatalities](#)

April 8, Lecture: History of road safety in OECD countries - 2

REQUIRED READINGS/ACTIVITIES

- [ONeill 2018 Preventing motor vehicle crashes 1910-1970](#)
- [ONeill 2018 Preventing motor vehicle crashes 1970-Today](#)

SUGGESTED READINGS/ACTIVITIES

- [Stevenson 2018 Global road safety and future directions](#)

**ROAD SAFETY - Institutions**

April 13, Lecture: Safe System Approach: Institutions in Developing Countries

REQUIRED READINGS/ACTIVITIES

- [Bhalla 2019 - Building Road Safety Institutions in Low- and Middle-Income Countries](#)

SUGGESTED READINGS/ACTIVITIES

- [World Bank 2009 Country guidelines for the conduct of road safety management capacity reviews](#)
- [Bliss 2012 Meeting the management challenges of the Decade of Action for Road Safety](#)

April 15, Lecture: Road Safety at the World Bank (Guest Lecture)

[Guest: TBD, World Bank]

REQUIRED READINGS/ACTIVITIES

1. What is the World Bank? <https://www.investopedia.com/articles/world-bank-definition/>
2. World Bank Transport Sector Overview: <https://www.worldbank.org/en/topic/transport/overview#2>
3. and 4. Stockholm Declaration for 2020 Global Ministerial Meeting AND United States Position paper on the Stockholm Declaration: both important for class exercise. Two papers are found at: <https://www.roadsafetysweden.com/about-the-conference/stockholm-declaration/>

**ROAD SAFETY: Preventing crashes and managing crash energy**

April 20, Lecture: Overview of interventions: Haddon's matrix

REQUIRED READINGS/ACTIVITIES

- [Runyan 1998 Using the Haddon matrix introducing the third dimension](#)
- [Haddon 1972 A logical framework for categorizing highway safety phenomena and activity](#)

April 22, Lecture: Public health and the built environment (Guest Lecture)

[Guest: TBD, Active Transport Alliance, Chicago, IL]

REQUIRED READINGS/ACTIVITIES

- NPR story that aired on Morning Edition today (April 7, 2021) – 7-minute listen "A Brief History of How Racism Shaped Interstate Highways" <https://www.npr.org/2021/04/07/984784455/a-brief-history-of-how-racism-shaped-interstate-highways>
- NPR segment that aired July 5, 2020 – 4-minute listen: "The Wrong Complexion For Protection' How Race Shaped America's Roadways and Cities" <https://www.npr.org/2020/07/05/887386869/how-transportation-racism-shaped-america>

SUGGESTED READINGS/ACTIVITIES



- From WNYC's Transportation Nation: "Back of the Bus: Mass transit, race and inequality" – audio documentary (54 mins) <https://project.wnyc.org/backofthebus/>

### **ROAD SAFETY INTERVENTIONS - enforcement and behavior change**

April 27, Lecture: Overview of behavior change and enforcement. Case study: automated enforcement

#### REQUIRED READINGS/ACTIVITIES

- [Hoye 2014 Speed cameras](#)
- [Carnis 2009 Automated speed enforcement - what the French experience can teach us](#)

#### SUGGESTED READINGS/ACTIVITIES

- [Morain 2015 Automated Speed Enforcement Systems: Closing the policy implementation gap](#)

April 29, Lecture: Managing safety using telematics in overseas vehicle fleets (Guest Lecture)

[Guest: Greg Wolfe, Senior Industrial Hygienist, US Department of State]

#### REQUIRED READINGS/ACTIVITIES

- **Chapter 3** of the WHO's *Global status report on road safety 2018*, available here: <https://www.who.int/publications/i/item/9789241565684>

### **ROAD SAFETY INTERVENTIONS - forgiving roads & Injury costing**

May 4, Lecture: Injury Costing and Forgiving roads in low- and middle- income countries

#### REQUIRED READINGS/ACTIVITIES

- [Bishai 2012 Injury Costing Frameworks](#)
- [Turner 2013 Safe System Infrastructure in LMICs Infrastructure in LMICs](#)
- Watch the short movie, Boobytrap: [Boobytrap!](#)

#### OPTIONAL READINGS/ACTIVITIES

- [AASHTO 2010 Introduction to the Highway Safety Manual](#)
- [Hauer 2019: Engineering Judgment and Road Safety](#)
- [Elvik 2017: Can evolutionary theory explain development of safety of roads](#)

May 6, Lecture: Forgiving roads: designing infrastructure for safety (Guest Lecture)

[Guest: TBD, Highway and Traffic Safety, Jacobs Engineering Group]

#### REQUIRED READINGS/ACTIVITIES

Familiarize yourselves with the contents of the following websites:

- [Strategic Highway Safety Planning](#)
- [Toward Zero Deaths](#)
- [AASHTO Highway Safety Manual](#)

### **ROAD SAFETY INTERVENTIONS - forgiving cars**

May 11, Lecture: Biomechanics of injuries & vehicle design

#### REQUIRED READINGS/ACTIVITIES

- [Crandall 2011 Human Surrogates for Injury Biomechanics Research](#)
- [O'Neill 2009 Preventing Passenger Vehicle Occupant Injuries by Vehicle Design—A Historical Perspective from IIHS](#)

#### SUGGESTED READINGS/ACTIVITIES

- [Glassbrenner 2012 An Analysis of Recent Improvements to Vehicle Safety](#)
- [Effect of improving vehicle safety design on deaths in Latin America](#)

May 13, Lecture: Vision Zero in Chicago (Guest Lecture)

[Guest: Jamie Osborne, Coordinating Planner, Department of Planning and Development, City of Chicago]

#### REQUIRED READINGS/ACTIVITIES



**THE UNIVERSITY OF CHICAGO**  
**HARRIS SCHOOL**  
**OF PUBLIC POLICY**

1307 E. 60<sup>th</sup> Street  
The Keller Center  
Chicago IL 60637  
[harris.uchicago.edu](http://harris.uchicago.edu)

- Read: [The Untokening 1.0 "Principles of Mobility Justice"](#)
- Read: Lewis Mumford ["The Highway and the City"](#)
- Watch: [Tamika Butler "Building equitable, inclusive ecosystems"](#)

OPTIONAL READINGS/ACTIVITIES

- Watch: Enrique Penalosa "Why buses represent democracy in Action" | [Ted Talk](#)

**URBAN SPRAWL, AIR POLLUTION & PHYSICAL ACTIVITY**

May 18, Lecture: Urban Sprawl and its health impacts

REQUIRED READINGS/ACTIVITIES

- [van Schalkwyk 2018 Current issues in the impacts of transport on health](#)

SUGGESTED READINGS/ACTIVITIES

- [Woodcock 2009 Public health benefits of strategies to reduce greenhouse-gas emissions urban land transport](#)
- [Ewing 2009 Built Environment and Traffic Safety](#)

May 20, Lecture: Disaster, Advocacy, and Policy Change (Guest Lecture)

[Guest: Dr. Bella Dinh-Zarr, former Vice Chairman, National Transportation Safety Board]

REQUIRED READINGS/ACTIVITIES

- READ: <https://www.governing.com/community/we-know-how-to-prevent-traffic-deaths-our-goal-should-be-zero>
- READ: <https://www.deseret.com/2017/3/22/20608802/my-view-utah-roads-will-be-safer-with-05-percent-bac-law>
- WATCH (1-minute NTSB Mission video): <https://www.youtube.com/watch?v=9jOkxe8jCW8>
- REVIEW: <https://visionzeronetwork.org/about/what-is-vision-zero/>

OPTIONAL READINGS:

- READ (just "Report Highlights"): <https://www.nationalacademies.org/our-work/accelerating-progress-to-reduce-alcohol-impaired-driving-fatalities>
- READ (just Abstract): <https://www.thecommunityguide.org/sites/default/files/publications/mvoi-AJPM-evrev-seat-belts.pdf>
- WATCH (6-minute NTSB 50th Anniversary overview video): [https://youtu.be/ux\\_tijG15kw](https://youtu.be/ux_tijG15kw)
- READ (Statement supporting road safety in the UN Sustainable Development Goals): <https://sdgs.un.org/statements/fia-foundation-12126>

**COURSE WRAP UP & STUDENT PRESENTATIONS**

May 25, Lecture: What have we learnt

REQUIRED READINGS/ACTIVITIES

- Review all class materials

May 27, NO CLASS

Students should finish working on the discussions associated with the projects due at the end of the day.