Intro to ECO 3253

Economics of Public and Social Issues

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ECO3253, UTSA

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What is this course about?

This course

Welcome to **ECO 3253**!

Big picture:

- How to use data to understand and solve current and important economic problems!
- Get a sense of research frontier in applied economics and social science (equality of opportunity and mobility, education, innovation and entrepreneurship, health care, climate change, and crime, etc)
- How will we get there? By doing 3 things:
  1. covering the topics with a focus towards using data that can help answer these questions
  2. understanding the intuition for how to use data to answer these questions (basics of statistical analysis)
  3. using computational tools to help us with the statistical analysis (basics of R)

About me

Let me briefly tell you about me:

- Colombian
- PhD in Economics at Duke University in North Carolina
- Masters in Economics at Université Catholique de Louvain in Belgium
- Undergraduate in (you guessed it!) Economics at Universidad Nacional de Colombia.
- Applied (micro)economist:
  - 'micro': focus on specific markets (housing and media)
  - 'applied': I use data all the time

Website

We will have a cool website with the materials covered in class:

https://jrm87.github.io/ECO3253_repo/

Info on blackboard. Write it down. Keep in in mind!

Topics to be covered - 1

Lectures based on the course by Prof. Raj Chetty.

R: Chetty	Opportunity Atlas Course
	

Topics to be covered - 2

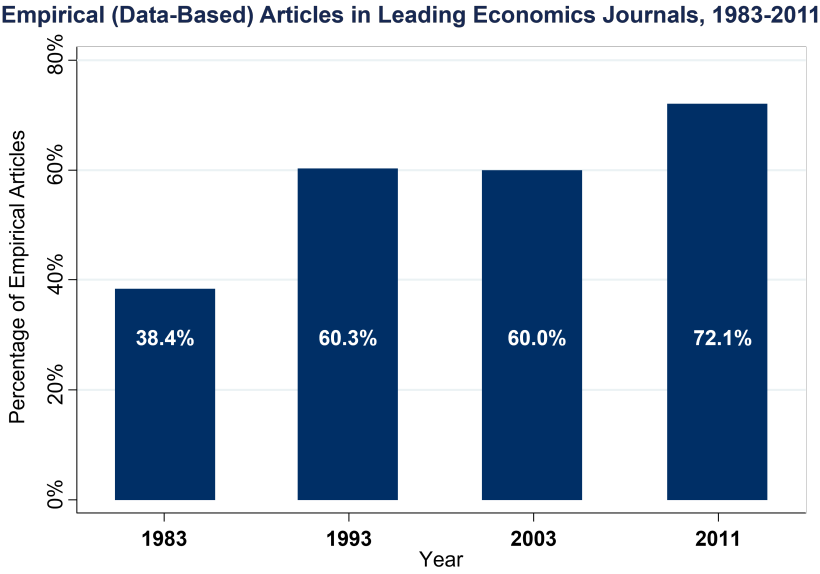
The plan for what we will covered in the semester includes:

- Geography of Upward Mobility in America
- Causal Effects of Neighborhoods and Characteristics of High-Mobility Areas
- Historical and International Evidence on the Drivers of Inequality and Mobility
- Upward Mobility, Innovation, and Growth
- Higher Education and Upward Mobility
- Primary education
- Teachers and Charter Schools
- Racial Disparities in Economic Opportunity
- Improving judicial decisions
- Immigration
- Political Economy
- Income taxation
- Savings and wealth
- Housing markets and COVID
- Intro to air and water pollution, and externalities

Data-driven course

- Data driven, not just theoretical
- We will work with real world data, and we will try to make sense of it.
- Economics is much more empirical now than a few years ago

Number of data-driven articles in leading journals



What do we need to understand data?

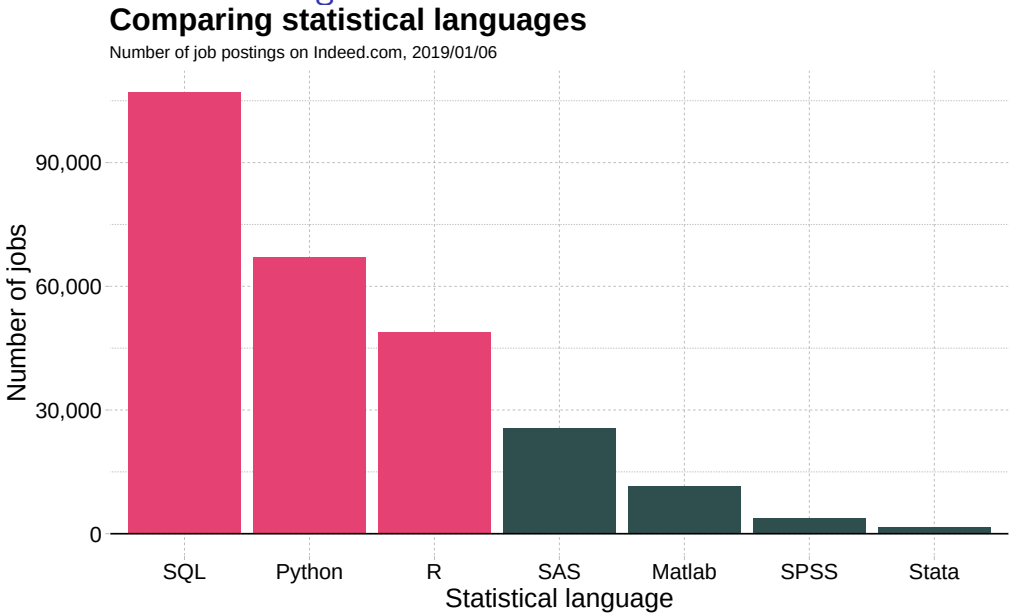
How can we know if going to school increases wages? Or if economic mobility is low or high?

- Framework (basic stats and intuition)
  - I will provide all the basic intuition for the empirical methods. These include:
    - Descriptive Data Analysis: correlation, regression
    - Experiments: randomization, non-compliance
    - Quasi-Experiments: regression discontinuity, difference-in-differences
    - Machine Learning: prediction, overfitting, cross-validation
- A powerful (and very cool) calculator:
  - **R** as our statistical software
  - Will follow parts of the book ModernDive
  - I will guide you through it - does not matter if you have no experience with 'programming'

Ok, but why R?

- **R** is free and open source!
- **R** has a vibrant online community!
- **R** is very flexible and powerful — adaptable to nearly any task (*e.g.*, correlations, econometrics, spatial data analysis, machine learning, web scraping, data cleaning, website building, teaching.)
- Employers like **R** over alternatives

Added benefits of learning R



R and RStudio

- We will talk more about R and RStudio next Monday.
- I will reach out with very simple instructions sometime this week.
- You will not have to install **anything** in your computer.
  - Will use cloud services. More on that later.

Economic Concepts

Back to the content! We will cover and use several economic concepts you probably learned before. We will see them in practice:

1. Effects of price incentives
2. Supply and demand
3. Competitive equilibrium
4. Adverse selection
5. Behavioral economics vs. rational models

Grades

Activity	Perc. Weight
Projects	40%
Midterm	25%
Final	25%
Lecture Attendance	5%
Class and lab participation	5%
Total	100%

Projects

- A big part of the course
- **4 projects** through the semester
- These are more involved than most homeworks you have probably worked on
- Hands-on experience working with real data on real problems.
- To be submitted on Blackboard.
- Start early!
- Many new elements. You need time to try, fail, experiment. They are not hard, but require that you give yourself time!
  Do not work on these projects just the day before!