



2020 RESEARCH PROFESSIONAL ORIENTATION (VIRTUAL)

Session I: July 20–31

Hosted by the Becker Friedman Institute for Research Economics (BFI) & the Energy Policy Institute at the University of Chicago (EPIC)

BF **PREP**
Predoctoral Research
in Economics Program
AT THE BECKER FRIEDMAN INSTITUTE

 **EPIC**
ENERGY POLICY INSTITUTE
AT THE UNIVERSITY OF CHICAGO



Monday, July 20

9:00 – 11:00 AM

Intro to STATA

Instructors: Alice, Lina, Andrew

Summary: This workshop will review some common Stata commands that you will likely encounter repeatedly during your work, as well as mistakes to avoid. We will learn the basics of Stata programming: loops and macros, manipulating strings, commenting and structuring .do files, knowing your data: tab, sum, assert, missing values, tempfiles, preserving and restoring your data, and working with dates in Stata. We will also overview five critical commands for data manipulation: merge, joinby, append, reshape, and collapse. We will end the session with a brief overview of Stata commands to manipulate hierarchical or panel data.

Tuesday, July 21

9:00 – 11:00 AM

Intro to R

Instructor: Lixi Wang

TA: Lina

Summary: R is an open-source language that can provide more flexibility than Stata. We'll begin by going through the basics of data structures, manipulation, analysis, and visualization in R. We'll focus on the tidyverse, a collection of R packages designed for data science, such as dplyr and ggplot2.

5:00 – 6:00 PM

TA Session (Intro to STATA)

Wednesday, July 22

9:00 – 11:00 AM

Intro to Python

Instructors: Ian, Ivan

Summary: We will discuss the basics of Python programming and some data science libraries (i.e. Numpy and Pandas) that are useful for data analysis and modeling.

5:00 – 6:00 PM

TA Session (Intro to R)

Thursday, July 23

9:00 – 11:00 AM

Geospatial R
Instructors: Santiago, Chin, Sushant

Summary: We will take a quick look into R's library of tools for working with spatial data. In this session, we will talk about how R understands Vector and Raster data, how to use its tools to manage them and some alternatives to make breathtaking maps.

5:00 – 6:00 PM

TA Session (Intro to Python)

Friday, July 24

9:00 – 11:00 AM

Geospatial Python
Instructors: Ian, Ivan

Summary: Summary: Let's dive into the world of spatial data in Python. We will discuss some basics of geospatial data formats and we will use Geopandas (close to the R sf library) with some real life examples.

12:00 – 2:00 PM

BeautifulSoup and Selenium (Python)
Instructors: Atom, Andrew

Summary: In this session we will cover the essentials of web-scraping using Python. You will learn how to retrieve data from APIs, and how to parse HTML and XML data using BS4 and Selenium. We will discuss some advance features when things aren't meant to be scrapped using Selenium.

Monday, July 27

8:00 – 10:00 AM	Command line tools and environment management. Instructors: Iván, Ian
	<p>Summary: In this session you will learn how to harness the power of the terminal and how to set up a functional and replicable programming environment. You will learn how to move around the terminal and basic flow control tools in bash. We will also discuss common environment utilities for Python: conda, virtualenv, and a small intro to Docker.</p>

5:00 – 6:00 PM	TA Session: Geospatial Python, Geospatial R, BeautifulSoup and Selenium (Python)
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Tuesday, July 28

9:00 – 11:00 AM	Version Control Instructors: Ivan, Zaya
	<p>Summary: What the heck happened with my code? It was working yesterday! -- is a common scenario for a lot of us. Here we will discuss what is version control, how to share code with others, and discuss one of the main tools for version control, Git and Github. (Please open a Github account here before the session starts).</p>

Wednesday, July 29

9:00 – 11:00 AM	Session on using a server, ssh, using a password Instructors: Lixi, Atom, Sushant
	<p>Summary: A brief and shallow guide on how to run jobs on servers like Midway</p>

Thursday, July 30

9:00 – 11:00 AM

Breakfast with Alumni

Friday, July 31

9:00 – 11:00 AM

Econometrics
Instructor: Fiona Burlig

Summary: We will provide an overview of the fundamental problem of causal inference and introduce a variety of empirical techniques for estimating causal effects

