**Instructors**:

Amanda Farah (she/her), 2nd year graduate student, Astrophysics, [afarah@uchicago.edu](mailto:afarah@uchicago.edu)

Haynes Stephens (he/him), 3rd year graduate student, Geophysics, [haynes13@uchicago.edu](mailto:haynes13@uchicago.edu)

Iván Higuera-Mendieta (he/him), pre-doctoral fellow, Economics, [ivanhigueram@uchicago.edu](mailto:ivanhigueram@uchicago.edu)

**Class information:**

8/31 9:30am CT

9/1-9/11 10:30am-12:30pm CT

Zoom link:

* <https://uchicagostudents.zoom.us/j/92736383711?pwd=RlRzSlhscGJjRWZUVWJxTjczQUhwUT09>
* Meeting ID: 927 3638 3711
  + Passcode: 347032

**Teaching Assistants**:

TAs will only respond to questions during office hours, please do not expect replies at other times.

Jordan Kemp, 3rd year grad student, Physics, He series

OH: M/W/F @ 3-4PM

Tu/Th @ 2-3PM

Link: https://uchicagostudents.zoom.us/j/2651658701?pwd=dndzNThraitjZy9xOWFHVkdJK1lEUT09

PWD: 349696

How to contact: [kempj@uchicago.edu](mailto:kempj@uchicago.edu) or Slack DM

Jonathan Colen (pronouns He/Him/His)

OH: 4-5 at the class Zoom link

How to contact: Slack DM

Jim Franke (pronouns: He/Him/His)

How to contact: Slack DM (5-6PM)

Ziwei Wang (pronouns: He/Him/His)

How to contact: Slack DM (5-6PM)

**Slack Information:**

* Link to join the slack is here:
* You will each be assigned to a channel on Slack with at least one TA
* In this slack channel, a new thread will be created by your TA for each check-in. This is where you will answer all in-class questions /paste output to in-class exercises

**Structure:**

* Instructor will go over pre-written code
* We will stop for skill practice and breaks
* Any code not covered should be completed outside of class with help from TAs
* Ask any in-class questions in Slack

**Daily Agenda [updated]**

1. Colab, data and basic plotting
   1. Layout for the course
      1. Syllabus, arch of course
   2. Mechanics of the course
      1. Colab notebooks, Zoom, Zoom Chat, Google Doc for code
   3. Layout of a Colab Notebook
   4. Mounting to the Drive
   5. Code cells
   6. Markdown cells
      1. Creating an outline
   7. Matplotlib, plotting basics
      1. Single plot (x and y)
      2. Scatter plot (x and y)
      3. Histograms
      4. Subplots and axis objects
   8. Pandas intro (with matplotlib libraries)
      1. Building a dataframe
      2. Selecting columns
      3. Loading a dataframe from a csv
      4. Loading from a website?
      5. %load\_ext google.colab.data\_table
2. Pandas
   1. Seaborn for pandas
   2. Melting to long form
   3. Groupby
   4. Mapping functions
3. Advanced Numpy
   1. Indexing: slicing, specifying elements, boolean indexing
   2. Masked arrays
   3. Linear algebra
4. DASK + Xarray
   1. Switching between data arrays and dataframes
5. RCC Pt. I
6. Git and version control
7. Data Viz and geographic coordinates
   1. Seaborn
   2. Plotly express
   3. Xarray
   4. Geoviews
8. RCC Pt. II: Submitting jobs on Midway
9. Regressions + Python and R working together
   1. SciKit learn
   2. Linear regression
   3. Polynomial regression
   4. “Choosing the best regression model”
   5. Combining R and Python in your practices