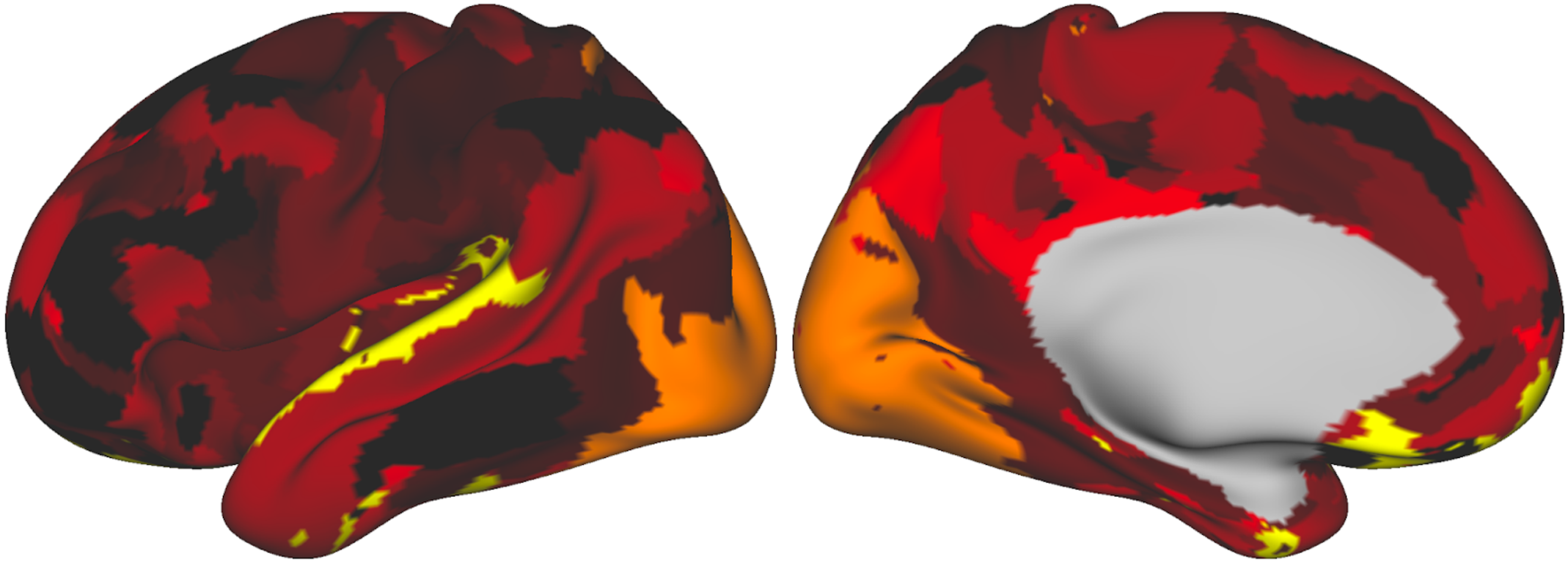
Section One

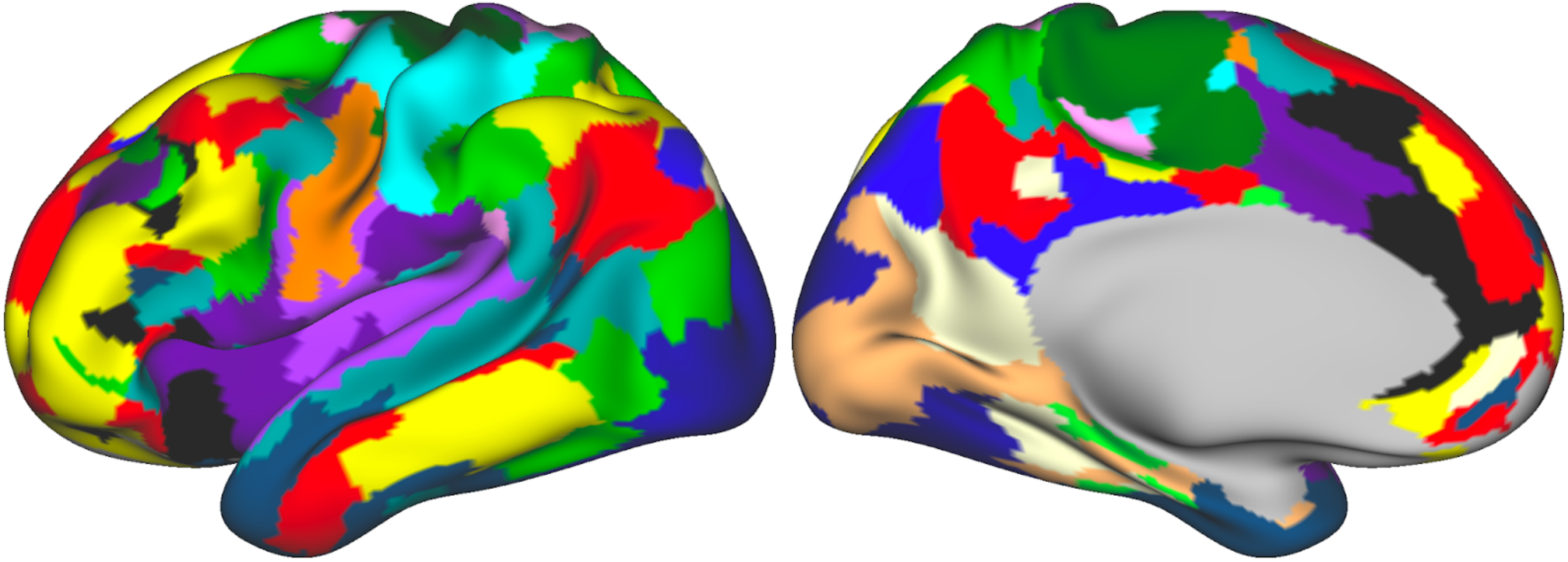
Class COGS 9

Teaching Assistant: Matthew Feigelis

Welcome to COGS9!

- Matthew Feigelis // email: mfeigeli@ucsd.edu
- **OH**: Wed 12:30pm - 2:30pm at SSRB 239 (next door to CSB)
- 4th year PhD student in Cog Sci
- My research interests: neural mechanisms underlying development and neuropsychiatric disorders
- Develop data science, neuroinformatics, and machine learning methods in Python





Machine learning: Prediction and interpretability

- Can we predict whether someone has a neuropsychiatric pathology based off brain data?
- What features drive the models predictive ability/accuracy?

Community detection / Network neuroscience

- Does activity across the brain intrinsically organize into networks / communities?
- Can we relate variability in these networks to variability symptoms and clinical attributes?
- Can we identify subtypes of what is commonly just a single diagnosis?

COGS9 Background

- Overview approaches to answering specific data science questions

- Some topics that will be covered:
  - Data wrangling
  - Approaches to data analysis
  - Data visualization and communication
  - Data science ethics

- Survey course!
  - **You won't** dig into specific topics with large programming assignments
  - **You will** broadly discuss a variety of data science topics, giving you a flavor of the field

Discussion Section

- Walks throughs, Q/A, and advice on the reading assignments and the data science assignments

- A space to collaborate and discuss **group projects**

Group Project

- Today in discussion section: Start thinking about group projects and looking for groups (4-5 members)

- Project overview: https://cogs9.github.io/ucsd-cogs9/final-group-project/

- You'll have to pick a **Research question** you are interested and write up how you would try to test your **hypotheses**, and address any **ethical concerns**

Attendance

- We’ll count off numbers for everyone.
- Enter your number and todays word into the attendance form

- **Todays word:** Yoda
- **Form**: https://forms.gle/tx9GcpANHEMwj8Jv7

Meet each other! (till 3:30pm)

Form small groups of **3-5 people** around you, and do the following:

1. Share your **name, year, major,** and **favorite meal** in San Diego

2. Then, search for common interests that might be the beginning of a data science question for a group project

3. Look over project examples together

https://cogs9.github.io/ucsd-cogs9/final-group-project/

Topic list

- UCSD
- Sports
- Politics
- Food
- Music
- Pop culture
- Fashion
- Animals