

CDS DS596 Spring 2025

Final Project

The final project will consist of 15% of the overall grade. Due date is May 5th by 5pm. Submit as pdf by email to Brian (bcleary@bu.edu).

Requirements

The final project will require you to develop a written proposal for a data-driven research project in biology. The final text should be around 1,500 words (in the 1,250 to 1,750 word range) and include any figures you think would be helpful. In terms of polish and style, think of this as something you might submit as a fellowship application (so include citations – not part of the word count – and all that).

Your proposal should begin with a background section that introduces the biological and computational context of the problem, reviews current literature and existing approaches, and motivates the objectives and approach of the proposal.

Proposal topics could include the following:

- Development of a new computational approach
- Application of existing methods to new or under-explored data
- Analysis of multiple methods applied to common benchmark datasets

Example proposal titles:

- “Using vector field models to map scRNA velocity onto spatial transcriptomics”
- “Kernel ridge regression to study ecological interactions”
- “Understanding the limitations of statistical approaches to differential expression analysis”
- “New tools for dimensionality reduction of high-dimensional biological data”

If you are unsure whether your idea for the final project is appropriate, please just ask! (But I strongly encourage you to do so by April 23rd.)