

The Final Project for the class is to write a short paper (two to four pages in Physical Review format) on a subject of your choice, relevant to the topics of this course. It should be formatted as a regular article with title, abstract, and bibliography. The main text should contain introductory and concluding paragraphs (whether or not they appear as subsections is not important). A good project will involve a combination of literature review, discussion/extension of an analytical or computational model, and/or application/analysis of experimental data. The project ideally includes some novel elements (not necessarily substantial) beyond what is available in current literature.

- Students can collaborate in groups provided that the respective contributions of the participants is clearly specified in a footnote. (The length of a research paper may be proportionately longer in such collaborations.) *Use of large language models is not permitted.*
- Examples of projects from previous years are available online in the directory:

<http://web.mit.edu/8.334/www/grades/projects/>.

- Clearly the initial hurdle is coming up with an interesting project that is doable in a short time. You should thus start thinking of potential topics as soon as possible, and submit a short proposal (two paragraphs; half a page) by the **proposal deadline of 4/4/25**.
- The proposal will carry 5% points; the Final project 20% points towards the final course grade.

- It is preferable for you to come up with your idea for a research project. However, a few colleagues below have volunteered to help and advise on specific topics, and I can put you in touch with them by Email.

Andriy Goychuk (agoychuk@mit.edu) [population dynamics, polymers, ...]

Saeed Mahdisoltani (saeedmah@mit.edu) [soft matter, fluctuation theorems, ...]

Daniel Swartz (dswartz@mit.edu) [bacterial growth, ...]

⋮ (more to follow)