Use the hand-out of January 26 ("On Preparing A Manuscript for Publication") and the following description of a scientific paper as guideline for the two papers of your main project. In the first paper you will write the "introduction" and the "model"/"methods" sections. In the second and final paper you will write the complete paper (revisit the sections of the first paper for changes.) Use a more formal writing style than you will use in your oral presentation.

**Audience:** Your audience will be juniors and seniors who most likely do not have your background. Include therefore all information which is necessary to understand your project.

**Examples:**


**Contents:**

- Title
- Author(s), Address
- Abstract: An abstract is a summary of what you did and your results. The abstract is for a reader who might not have time to read the rest of your paper or who decides depending on your abstract if she or he reads the whole paper. The abstract should be understandable without the rest of the paper and should contain: the system you study, the model, the method and the results.
- Text: The following text should be understandable by itself. Reference any information which you used from other sources or which includes details not necessary for the reader’s understanding.
  - Introduction/Background\(^1\):
    This section might give some historical background and/or necessary background information. You might talk about other models than the one you use. The Introduction also serves as a motivation for why your project is of specific interest and importance. The main purpose of the introduction is to put your project into context and to give a general description of your project. You might end your introduction with an outline of the rest of the paper.

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\(^1\)Sometimes this is split into two sections
- **Model:**
  In this section you describe your model exactly. This includes for example the dimension of your system, whether you use a lattice and all applied rules (as e.g. the steps in the Nagel-Schreckenberg traffic flow model). In principle, after reading your description any reader should be able to write the program with exactly the same model as yours.

- **Theory:**
  You may not need this section. This is a section one uses if there are analytical calculations possible. For theoreticians this is the main section.

- **Simulation:**\(^2\)
  This section includes the method you use\(^3\) and details of your simulation which are necessary for the reader who wants to reproduce exactly the same data as yours. This includes for example the initial configuration, the length of the simulation run, size of the lattice, etc..

- **Results:**
  This section describes the results of your project. It can include tables, formulae and figures. Tables and figures should have captions and formulae should be numbered.

- **Conclusions/Discussion:**
  In this section you draw conclusions of your results and you might include what one could do in future work.

- **References:**
  This is the bibliography of all references to which you refer in the text.

\(^2\)This section is often combined with the section “Model.”

\(^3\)Brian in your case you describe the Molecular Dynamics method in general and the specific algorithm you will use. Christie in your case you describe the Monte Carlo method, in specific the Metropolis algorithm.