Literature Search

Goal: For now our goal is that you find the topic and specific model for your main project. (Only later your goal will also be to become an expert, i.e. to know related previous work.) Find a model which is simple enough, yet has some rules to be programmed. Look for sources (papers/books) and check whether they are well written. Can you follow their description of the "rules of the game". For example for a traffic flow model on lattice: Which lattice, how do velocities and positions get updated at each time step?

Outline:

Go to our PHYS 338 webpage
`http://www.eg.bucknell.edu/~kvollmay/phys338_s2023/`
and scroll down to "Guidelines For Main Project" and "Literature Search Tools". I will guide you through the provided links and you will get to practice them with topics which sparked your interest.

1. Links on PHYS 338 webpage

I will give you a quick guide through the links of the PHYS 338 webpage.

Guidelines For Main Project:

- Previous simulation projects: These are the posters for the symposia, so talk titles of main projects students chose in previous years. You may use these posters to see examples for a wide range of topics.

- Traffic Flow Paper: We will use this paper for our last in-class topic. It is a great example for a well written paper with also many references for other models.(more details in later classes of our courses)

- Computational Physics Section of AJP (eidtors Gould & Tobochnik). This selection of papers is intended for undergraduate and graduate students to provide an introduction is a variety of topic in computational physics.

Literature Search Tools:

- Web of Science and Google Scholar are for finding papers. This is your main tool kit.

- Library & IT is the top page, from which you can get to all other pages. Here you find also `Interlibrary Loan` (ILL) which you need for getting papers or books, to which Bucknell does not have access to.

- Databases includes Web of Science and other Databases for humanities and social science papers. Use this link when you try to use Web of Science from outside of Bucknell.

- Book: BU Library Catalog (World Cat). This is for finding books at Bucknell and also at other libraries.

- The physics resources are for some specific journals which you most likely will need and also the preprint server arXiv.

2. Web of Science

Click on the Web of Science link. (In case you are using Web of Science while not being directly on the Bucknell internet, you can get into Web of Science by using the Databases link and then Web of Science, which will ask you for your Bucknell login information.) Below a list I will guide you through:

- Start with the default search

- Add Another Row ; Topic or other setting

- Search by topic (e.g. Ising Model or any other topic)

- refine search (e.g. ising ferromagnet and simulation)

- click on title → Cited References (Past)

- Citations (Future) (more recent papers have fewer citations)

- View Related Records

- Get paper via `Free Full Text at Publisher`
  or via `Links` and try offered Full Text Links
  or if none of above gets you full text, then use `Links` and then choose `GET IT` this gets you to the Inter Library Loan (ILL) page already with filled out entries (and finish with submitting request) You will get an email (a day or several days later) with a link and description how to get the article. (To see example: add to the ising ferromagnet and simulation search also `Yuksel` as author and click on the result Journal of Magnetism and Magnetic Materials, volume 513, 167249 (2020))

- take notes in extra file to keep the information about good papers and also which keywords worked and which not

- search by author if you found well written papers by specific author

- search by year if you look for specific paper or if you e.g. want to search for more recent papers only.

Google Scholar

Click on the Google Scholar. (probably works from any computer)

- type in keyword (e.g. Ising model)

- to get more advanced search: Click on the top left main menue symbol (three horizontal lines) and choose "Advanced search"

- Click on title → abstract; pdf-file

- Related articles

- click on "Cited by" (Future)

- to get bibtex-citation: click on " symbol (Cite) and then on BibTeX

- to get to past click on title and then on "References"

WorldCat

- advanced search: you find electronic books, and also books in Bucknell's library (to test search for title: Computer Simulation and author: Gould and author: Tobochnik if you scroll down that shows an earlier version of our textbook.)