SYLLABUS FOR FRESHMAN SEMINAR ON ALTERNATING SIGN MATRICES

- **Lectures**: Mondays 3-5:30pm, Science Center 507. My plan is for class to last roughly two hours, but we'll have a short (5 or 10-minute) break part way through since it can be difficult to focus on math for such a long period of time! When I've taught this seminar in the past, some of my students suggested that we spend a few minutes at the end of class discussing "metamathematical topics," such as summer opportunities, questions about academia, etc. I'm happy to do that as well if you are interested.
- **Professor**: Lauren Williams
  - **Course webpage**: http://www.math.harvard.edu/~ williams/ASM-Spring22.html
  - **Office**: Science Center 510
  - **Email**: williams@math.harvard.edu
  - **Office Hours**: to be determined.
- **Course Description**: We will survey the story of the alternating sign matrix conjecture – how it was discovered and how it was proved.
- **Prerequisites**: A familiarity with proofs will be very useful. Some background in linear algebra would also be helpful, though is not required.
- **Textbooks**: The book "The story of the alternating sign matrix conjecture" by David Bressoud. This will be supplemented by papers.
- **Problem sets**: There will be (fairly short) problem sets every week.
- **Final paper**: This will be a 5-10 page exposition of a topic related to the class; you are strongly recommended to write the paper in Latex. I will provide a list of suggestions for topics. The paper is due at 12pm on Wednesday May 4 – please plan in advance, I generally do not give extensions!
- **Collaboration policy**: Collaboration on the final paper is not permitted. Collaboration on homework *is* permitted, but you must write up your solutions independently: you cannot just copy someone else's work. If you work with other people, you must mention on your problem sets who you worked with. *Uploading course materials, problem sets, or solutions to a third-party website or soliciting solutions on the internet (stack exchange, etc) is strictly prohibited.*
- **Final presentation**: Students will give short (15-minute) presentations on the last two days of class, April 18 and April 25.
- **Grading**: Based on the homework, final paper, and presentation.
- **Schedule**: The course will meet every Monday (with the exception of President's Day and spring break), starting January 24, with the last day of class on April 25.
- **Other**: I would like this class to be as interactive as possible. So:
  - Interrupt me in class if there is something you don't understand.
  - Provide feedback if the lectures are too fast or slow, confusing, etc.

– Come to office hours.