

## SCI 199Y: Random Walks and Mathematical Discovery

### MAJOR PAPER ASSIGNMENT

(Due Monday March 31, 4:00 p.m., in my office, Sid Smith 6011.)

You are to write a paper (approximately 20 pages typed double-spaced) on a topic related to some aspect of the course. The paper should show that you have thought carefully about the topic. The paper should be interesting, well organized, and well written.

This Major Paper assignment has a number of similarities to the Minor Paper assignment. Like last time, the topic and style of the paper are reasonably flexible. In particular, you may choose a mathematical or non-mathematical topic. Furthermore, you may draw on your personal experiences, and on readings from the class.

However, unlike the Minor Paper, this time it is not sufficient to draw only on your personal experiences and/or readings from class. This time, you must include some substantial library research in your paper. If you choose a non-mathematical topic, your opinions and assertions should be backed up, as much as possible, by citations of articles, books, World Wide Web sites, or other reference sources (not just the excerpts read in class). If you choose a mathematical topic, you should read and explain some substantive mathematics, not just describe things in vague terms. As this is a longer and more substantial paper than the Minor Paper, it requires a correspondingly higher level of scholarship.

Like last time, you also have the option of doing an “experimental” paper, whereby you get a group of people together and perform some experiment related to a course topic. In this case, your Major Paper should discuss the results in detail, being sure to draw substantive, interesting conclusions which are related to the course topics.

**Notes:** (similar to the Minor Paper)

1. You may discuss the general ideas of your paper with others, and you may have others proofread your work. But the main ideas and writing of the paper should be done entirely by you.
2. Most papers will require library research. I realize this may be a difficult task for some of you, so feel free to ask me for assistance in getting you started.
3. Be sure to include, at the end of your paper, a list of all references (and other sources) which you have used in preparing your paper.
4. In class on **Wednesday March 19**, you should be prepared to present your Major Paper ideas – including reference materials – to other students.
5. As mentioned at the beginning of the year, the Major Paper will count for 40% of your final course grade.