Notes from meeting — 2006.05.10
Transcribed and summarized by Simon Rubinstein-Salzedo
(My commentary in *italic*.)

Present at the meeting were Adebisi Agboola, Brendan Barnwell, Daryl Cooper, Jeffrey Danciger, Monica Guzman, Jacob Jaffe, Chris Lefler, Jonathan Lowd, Jon McCammond, James McKernan, Timothy Rodriguez, Simon Rubinstein-Salzedo, and Edward Sichel.

The first topic of discussion was that of the first-year CCS sequence. We generally agreed that the goals of the course should be learning how to write clear and rigorous proofs, solving challenging problems, and understanding mathematics that someone else has written. We feel that for these goals to be achieved, courses should stress precise definitions so that students are able to see how rigorous mathematics is done. Furthermore, an integral portion of the courses should be problem sessions. These sessions will be designed in such a way to teach students how to write formal proofs from informal discussions. We also discussed the possibility of a discussion section in these first-year courses led by an upper class mathematics major. We propose a sequence of group theory, real analysis, and point-set topology for the first year courses.

A side issue that came up in the discussion of proofwriting was that of writing in general. It is a concern that some students come to CCS unable to put together a coherent essay about anything, much less something as difficult as mathematics. Therefore, it was proposed to require a writing course for students in the fall quarter of their first year. *I probably would have resented having to take a writing course my first quarter here. For one thing, I felt confident in my writing ability, and I believe many others also come to CCS already being able to write fairly well. More importantly, perhaps, is that CCS appeals to people who want to be able to focus on their field of interest (in this case mathematics) immediately and not be forced to take required classes that so many other universities force upon their students. Having only ever taken one course with large lectures and small discussion sections, I am probably not qualified to speak for the quality of these classes, but my impression of them is that they tend to be rather weak classes, taught to students at an extremely rudimentary level, and thus such classes are likely to be entirely useless to a nontrivial number of students. Furthermore, they appear antithetical to the ideals of CCS in general.*

Our next topic of discussion was that of advising. Currently, there are lots of students who do not regularly talk to their advisors. Theoretically, such students will be blocked from registration, but for some reason it appears that these students have not been blocked from registration. Of course, such penalties are the business of the CCS administration and not of the mathematics department. However, for a variety of reasons, students appear intimidated by the procedure of advising. A proposal was made for all incoming students to meet with their advisors simultaneously at a predetermined time in the first week of the quarter. Such a meeting would perhaps remove the initial fear of speaking with a professor individually. *Such a concern may appear trivial, but I don't think it is. I understand that professors are available to talk to students during office hours, but I tend to avoid going to office hours, preferring to face whatever difficulties I encounter in my courses on my own. I conjecture that this tendency is shared by many others, and that many students who share this tendency are likely to avoid advising as well.*

We also discussed area requirements. Some of us feel that it is absurd to allow students to graduate with a mathematics degree without a good foundation in basic undergraduate mathematics such as abstract algebra, real analysis, and complex analysis. However, some students seem to prefer to take many "elective" math courses and avoid courses that appear more fundamental, at least to me. Nonetheless, it appears that the opinion of the majority is that there should be no strict area requirements; rather, advisors may refuse to sign advising forms if they feel that the student is not taking important courses. Proposed was a "mid-college review" system, in which a student is evaluated after two years so that the advisor can be certain that the student is making adequate progress.

Another issue raised was that of graduate courses. Most people present at the meeting (myself not included, however) were of the opinion that students should have a firm foundation in undergraduate mathematics before tackling the graduate courses. However, the decision of whether or not to take graduate courses should ultimately be up to the student. *I am fully aware that I was severely underprepared to take graduate courses when I was in my first year. Nonetheless, Charles Ryavec thought that I would be bored in undergraduate courses, so when he encouraged me to take graduate courses, I decided to follow his advice. Of course, I found them very challenging, but I learned far more from being extremely challenged, and frequently lost, in graduate courses than I possibly could have by being in undergraduate courses that would have been on the slow side. Had I started with undergraduate courses, I am certain that*

I would have been a far less competent mathematician than I am now. I certainly wouldn't have chosen to take graduate mathematics courses had no one encouraged me to do so though. Indeed, I wouldn't even have considered the option. Therefore I feel that advisors ought to propose the possibility of taking graduate courses very soon to ambitious students.

Also discussed was the issue of the senior thesis. Some students recommended that there be a requirement for students to take a certain number of graduate courses of to complete a senior thesis, but the proposal was rejected. Rather, advising should point a student towards graduate courses and senior theses. However, senior theses are difficult to set up and must be started very early in the fourth year, if not sooner.

The meeting will reconvene on 2006.05.17 at noon.