CCGB Meeting Agenda, January 30, 2009

1. Approval of minutes
2. Undergraduate announcements
3. Comments on TAM impact on College Curriculum issues (Gries, Ruina)
4. Follow-up on issues related to class size and teaching by non-faculty (Fisher; we will be asking each major whether any undergrad courses are taught by grad students).
5. Possible motion from Minors Committee on changes to the CS minor (Cisne)
6. Possible motion from the Engineering Courses Committee on approving ECE 3100 as an engineering distribution course (Bland)

CCGB Minutes, December 12, 2008

Ex-Officio: K. Dimiduk, B. East, F. Shumway
Other: B. Howland, M. Hutson, M. Louge, C. Pakkala

Approval of Minutes: The minutes of the 12/5/08 CCGB Meeting were approved as written.

Undergraduate Announcements: There were no undergraduate announcements.

Further Discussion of the Independent Major: D. Gries distributed a handout that listed the basic requirements of the Independent Major along with data of how many students are in the major, what their Primary Areas are, what their Secondary Areas are, how many students are expected to graduate from the I.M. each year, and what their beginning vs. ending GPAs have been. The number of students with a Primary Area of ORE is much higher than others, and that number is growing. The numbers will go up as students affiliate with the Independent Major. The problem is with students who use the I.M. as a safety net. A problem is that students in the I.M. with ORE as their Primary Area still enroll in ORE courses, dragging down the level of these courses.

R. Bland stated that there are 3 categories of students in the I.M.: (1) Those who are wonderful and creative and for whom this major was intended. (2) Those students who affiliate with a major but during their last semester got a D in a course in which they needed C- or better. They don’t want to stay another semester and re-take the class, so they entered the I.M. (3) This third category is the largest and contains those who not only didn’t meet the affiliation requirements for the major but failed to meet them in several categories. The students then ask to be in the I.M. but continue to take the same ORE courses, which already have high enrollments. It seems to make no sense to have affiliation requirements if students continue to do the same program under the I.M.

L. Pollack asked if students in the I.M. can still take all the courses within a major. D. Gries replied that students need only 32 credits in their Primary Area. L. Pollack suggested that a maximum number of credits in their Primary Area could be specified so they don’t take all of the classes within a department.

R. Bland said that one of the issues is that if the I.M. remains a safety net over time, having the name I.M. on the degree of the terrific students will be degraded. A. Ruina said that having a safety net is reasonable. He also feels that having an I.M. with a good reputation is good. He thinks they should be segregated.

R. Bland said that some of the large courses have other courses as a prerequisite. Some are dependent on the solid knowledge of a certain subject. The lack of knowledge would keep some students out. B. East said that it would be good to know what the former I.M. students are doing now. She asked whether the marginal students are dragging down the classes or whether the issue is the increased enrollment. R. Bland replied that the classes are way too big now; ORE has a disproportionate number of students. Sometimes the students affiliate with ORE due to a lack of interest in other engineering departments or
because they can’t get into other departments. M. Duncan told him that students with academic actions in CBE are either kicked out of Cornell or end up in ORE.

K. Dimiduk said that if having a safety net is an issue, maybe the students should have to take Math 294 during the summer before they end up in the I.M. R. Bland stated that Math 294 is offered during the summer. The 15-20 students not making the grade in the class all had math problems, most struggled in Math 294 previously, but they received an A in the summer course, so obviously something did not work in the summer course. A. Ruina said that one track would be to require a minimum grade or require an instructor’s permission. Another option would be the I.M. (honors) or safety net to get students through Cornell. D. Gries said that any new major needs to be accredited by NYS at some point.

M. Louge stated that, if we admit more students next year, an increasing number of students may be unable to affiliate with their first-choice major. B. East indicated that increasing the number of students is unlikely to affect quality significantly. She said that we could admit another 1000 kids and not reduce the GPA. This is not a quality issue. Most students are not successful due to personal issues, not due to their academic qualifications.

M. Louge said that many universities plan to admit more students. Because departments like MAE have experienced greater enrollments, we should collectively think about how we affiliate our students. B. East said that she thinks we’re overreacting to the enrollment issue. It seems we need to figure out as a college how to get students interested in the departments that have the capacity to teach. We need to market departments with smaller enrollments such as EAS. E. Fisher requested that everyone mull over the Independent Major issues.

Possible motion from Math and Science Subcommittee on request by CS to allow Math 4710 as a substitute for Physics 214: L. Pollack reported that her committee is against the motion of a substitute. The committee met and read the CCGB legislation regarding guidelines for substituting Math 4710 for the terminal physics class. They looked at the prerequisites for the math class (1 year of calculus and some knowledge of multivariable calculus, which is essentially Math 191). In contrast, Math 293 is a prerequisite for Physics 214. The Math 4710 and Physics 214 courses were not determined to be of equal rigor. The committee decided to use the following objective standard to determine the ‘equivalence’ of a course. During which semester could a student (with no advanced placement credit) enroll in the course, having met all of the prerequisites. All substitutions currently allowed for Physics 214 in the ORE major require Math 192, and 293, and also require294 in most cases. Evaluating rigor (if interpreted as difficulty level) would be difficult unless she sits in on both courses for entire semester. She wondered why CS didn’t propose Math 4710 as a substitute for the fourth math course instead.

D. Gries said that a goal of the substitution was to provide flexibility to the students. E. Fisher stated that the CCGB could discuss the merits of the substitution and vote later, or else CS could give the committee further information about the rigor of the course OR the issue could be deferred until the CCGB has a discussion of the general criteria for allowing substitutions. S. Marschner said that it would be the most sensible to defer the issue until the CCCB discusses the criteria for allowing substitutions. He stated that the CS department did a lot of work to go through the statistics courses and pick out the most rigorous one.

L. Pollack said that she had some discussion with K. Dimiduk as well. They looked at ENGRD 270, which comes closer to satisfying the definition of rigor. If there is a course on the books already, maybe it would be better to fix it rather than propose other substitutions. D. Gries said that he thinks this issue should be studied more in depth. But, CS will look at the “rigor” of the course and discuss it with L. Pollack’s committee.
S. Marschner said that having an understanding of the motivation behind proposing the substitution might also help. He would be happy to come to the CCGB with material about the rigor of all 3 math courses. S. Baker stated that one of the Curriculum Task Force Committee findings was that the strength of the engineering core is based on its fundamental courses. The common core is important and should be preserved. The principles in the report are important. L. Pollack said that she wants S. Baker to be a consultant on the issue of substitutions.

S. Marschner said that it seems that probability and statistics is absent from the core and a broad general substitution wouldn’t be bad. S. Baker said that the curriculum review looked at the statistics issue in detail. They think that having statistics formally in the curriculum would be a good thing. It is broadly contained in the curriculum already, but it is difficult to decide what should be given up in order to formally offer statistics in the curriculum core. L. Pollack suggested that maybe a rigorous statistics course included in the core instead of physics would be better for some departments. S. Marschner said that statistics is important for the CS students.

A. Ruina said that he heard that Cornell has more chemistry and physics requirements than other schools do. If that is true, it seems that there might be room for statistics. If CS feels a need for a statistics class, maybe a careful probability class with some statistics might be best rather than a standard statistics class where nobody understands anything. S. Marschner said that many students use probability in the CS program.

L. Pollack emphasized that Physics 214 is important because students coming out of Cornell with an engineering degree should know about waves. They should have some core understanding of science on some level. A. Ruina expressed his willingness to join the Math and Science Committee.

Discussion of the Impact of Possible changes to Undergraduate Population of the Engineering College: R. Bland stated that, given that the University is considering increasing enrollments during the coming year, he wanted to discuss the issue of course sizes and undergraduate instruction. On the Engineering Admissions website it says that in the College of Engineering faculty members deliver at least the lecture portion of every class. This is not true. He stated that many classes are taught by visitors, Lecturers, Senior Lecturers, Post-docs, or PhD students. Furthermore the website’s list of faculty does not include instructors in those categories. The website also states that more than 70% of all courses at Cornell have an enrollment of 40 students or fewer and only 8% are larger than 100 students. These numbers may be correct, but are not an accurate representation of the student experience. The website states that classes get smaller as you progress through your studies. This is also not true, at least in some majors. The engineering college FAQs also contains information about class size that understates class size in typical freshman courses.

B. East said that the data on the website is part of the US News and World Report data that students use when they select a college. R. Bland said he knows this, but that data, also reported by peer institutions, is not a useful reflection of the typical student experience as much as it is reflection of the typical faculty experience; it is very misleading for prospective students and their parents. He presented data from fall 2007 listed courses open to undergraduates in one undergraduate major. The 300-level courses are typically taken by juniors. They have enrollments close to 200. Less than 5% of the undergraduate instruction in this major is delivered in courses of 40 students or fewer. The typical student experience reflected in the fall 2007 data from that major is 76% of student credit hours were attributable to classes with enrollments of 100 or more.

M. Louge warned that budget cuts may make it difficult for departments to hire lecturers and visitors, at a time when the university is contemplating larger enrollments. R. Bland said that there is a real budget crisis and we need to explore reasonable options, but we need to think of their implications on a system in which too much of the instruction is delivered in very large classes.
A. Ruina said that the university and college websites should be consistent with what’s happening. R. Bland agreed and said that we need to make clear what students need to know. An unfortunate consequence of large class sizes is chronic absenteeism. If prospective employers and parents of students knew that a significant fraction of our students are chronically absent from classes, it would be very embarrassing for the college.

E. Fisher said that the CCGB would meet next week if Kent Fuchs can come to the meeting.

The meeting adjourned at 9:04 a.m.