CCGB Meeting Agenda, December 4, 2009

1. Approval of minutes
2. Undergraduate announcements
3. Sustainable Energy Systems proposal
4. Report from the College Curriculum Committee

CCGB Minutes, November 13, 2009

Ex-Officio: K. Dimiduk, F. Shumway, M. Spencer
Other: J. Bartsch, M. Bazley, B. Howland, R. Hoy, C. Pakkala

Approval of Minutes: The minutes of the 10/23/09 CCGB Meeting were approved as written.

Undergraduate Announcements: D. Gries stated that the online course evaluations will start after Thanksgiving. Faculty can add 4 questions.

F. Shumway said that next Friday (11/20) will be the last day for students to drop a class.

New Biology Curriculum: R. Hoy stated that the biology major is being thoroughly revised. This is the first major revision since 1964 when the division of biology came into being. Biology has totally changed since then. Bill Keaton invented the 1-year biology sequence at Cornell. It was all-inclusive. Biology has grown over the years, biology books have expanded and students have become increasingly unhappy with the course. Professors in the upper divisions of biology complain that students are unfamiliar with some of the course subjects, which is attributed to the introductory sequence having breadth but no depth. The Biology Committee was charged with implementing recommendations, and the introductory sequence of BIO 101-104 is now gone. For biology majors there is a core. The lab will be 1-semester long for all biology majors, but other students can also take it. It will be an introduction to investigative biology and will help students to understand the inquiry method by which biologists operate. The course will incorporate web tools. Hypothesis testing will also be a part of it. Some of it will be hands-on, and some will involve web work. The students will analyze data and do a write-up. The lab will consist of 3-4 modules, with each module lasting 3-4 weeks. The lab will be detached from any course, will have a faculty overseer, and will have a variety of areas represented. The lab will be taught each semester. Biology majors will also have a choice of 4 courses: Introduction to Cell and Developmental Biology, Evolutionary Biology and Biodiversity, Ecology and the Environment, and Physiological Systems. Biology majors must select 3 of the 4 courses, with one of them being Evolutionary Biology.

The Autotutorial Biology course is superb and will remain as an offering for students because it is very popular.

Choice courses will be taught at the freshman & sophomore levels. CEE may want their students to take the Ecology and the Environment course. The biology courses will be taught every semester, which will provide the students with more flexibility. The introductory biology courses were always too demanding for students, and they felt stressed because there were too many subjects packed into the courses. The new core courses will probably be team-taught. Faculty members will come up with core concepts that cut across the different core courses or all of biology. Instructors of the core courses will have meetings to decide what the core concepts are. In the past the instructors just designed the course and didn’t seek advice from other departments. They will do that now. The idea is to provide more depth, less breadth, and make for a more satisfactory experience for the students. Some faculty members are concerned be-
cause they are used to covering a broad area. They are also concerned about using active learning techniques, including the use of clickers. They need to use interactive ways of pedagogy. Classes will range in size (some possibly in the 100s). The core courses will have 2 lectures and 1 discussion section per week. The discussion section allows the instructor to do lab demos or go into the field or use some cool software. Some instructors are distressed at only having 2 lectures per week.

Many students are pre-meds. The Mcat is changing. A new Mcat will be out in 2013 or so. The curriculum list requirements will be scrubbed and mastering a set of competencies will be used instead. This accommodates many different ways of assessing what a person learns after being given a learning experience. Experience can be gained in many ways, and mastery of a subject is more important. The Mcat will redefine physicians also. Competencies will include risk assessment. Doctors need to understand statistics and not necessarily standard math.

L. Pollack said that bringing quantitative into biology is the right way to go. R. Hoy said that quantitative measures will be in the investigative part of the course. The students will be taught how to interpret graphs and grapple with ideas in the investigative part of the lab. This will surface again and again, in a different context, but the methodology will remain the same. Biology majors still need a sophomore-level genetics course and there will continue to be a biochemistry requirement at the junior level.

L. Pollack stated that she sends a lot of student to the biochemistry course, many who don’t have organic chemistry. R. Hoy said that is fine. The Mcat won’t require a year of organic chemistry. Many liberal arts colleges combine biochemistry and organic chemistry. Students may move into 1 semester of organic chemistry. The Cell Biology course won’t require that students need organic chemistry. No AP credit will be accepted for biology majors, and students won’t be able to opt out of anything.

R. Hoy said that BIO 109/110 will be substantially changed. There will be a course for non-majors. It is a work in progress. For those students who need a broad survey of biology, they can take the autotutorial course. BIO 109/110 may be reconfigured for non-science majors and wouldn’t be appropriate for engineers. We need to make choices about reconfigurations due to the economy because there will not be any new resources.

L. Pollack asked if the changes had been discussed with the BME faculty. R. Hoy replied that he has discussed this with M. Shuler. BIO 109/110 seemed to be a solution for them. The BME students will find a lot for them in the new courses. Engineering students still have access to the courses. The Physiology course is meant to cover plants, animals and microbiology, as will the other courses. The only thing being lost is taxonomic specificity. L. Pollack said that she sees Biology moving ahead but is worried about Engineering, where broad exposure to the subject is important. R. Hoy said that Biology will need to build a website with information for other departments. The Office of Undergraduate Biology is prepared to talk to other departments. The changes to Biology will be implemented next fall.

J. Bartsch said that he is wrestling with the 8 credits where BIO 101-104 occupied space in the curriculum, timing, etc. He wants to make sure that there is no way a student could be given the wrong information about which biology courses to take and then be unable to proceed in the direction that they need to go. R. Hoy said that if the students go through the core, they will be fine. There will be 15 credits in the core for the biology majors. There is no reason why students couldn’t take a biochemistry course after taking something like cell biology and development. There will be a biochemistry course offered as part of the core. L. Pollack stated that the existing biochemistry course is spectacular and encompasses a full year. R. Hoy said that the biochemistry issue needs to be resolved. It is very well taught now. How it
fights into the core is a work in progress. This is currently set to be a junior-level course. L. Pollack said that Engineering students take it as sophomores or juniors.

R. Hoy said that there is a lot of sentiment for retaining BIO 109/110 but not in its current form. We don’t know what the CALS budget will be. M. Bazley asked what Advising should tell students who took BIO 101-103 in the fall but are not taking the remainder in spring, how to mix & match sessions for next year. R. Hoy said that the students would be able to take any of the new core courses. J. Bartsch said that BEE needs to change their curriculum in some fashion. It has a lot of requirements, so there will be some transition. We need to get the curriculum changes right for the students.

L. Pollack said that our Engineering students should be able to pick a core course. Maybe they could take the lab as well. R. Hoy said that the lab is 2 credits. A. Zehnder said that we can change major requirements but NOT college requirements. J. Bartsch said that we will need to look at engineering distributions. F. Shumway said that not many students are using biology courses as distribution courses.

R. Hoy said that biology is becoming more interdisciplinary. At some point maybe the cadre will have an engineering flavor. The courses will be team-taught. The idea is to have flexibility. The courses will be reviewed every 5 years to see if the curriculum is appropriate because the science and the needs are always changing. Biology is hoping that the courses will be more disciplinary. These individual flavors of biology are exciting, and the opportunity of significant co-teaching is possible. One of the core concepts is for a quantitative approach. Instructors determine what goes into a course. New hires are more interdisciplinary.

L. Pollack said that she is willing to get Engineering and Biology talking. Biomedical Engineering needs to be on board with this. D. Gries said that the CCGB should decide on this. R. Hoy stated that many more students want to do biology plus engineering or biology plus physics. This will force a change one way or another. Biology wants to work with Engineering, Physics and Math.

The meeting adjourned at 8:58 a.m.