Curriculum Committee
Minutes

September 26, 2005

Attendees: Tom Doeppner, Chad Jenkins, Claire Kenyon, John Savage (Chair), Eli Upfal (Visitor)
Absent: Franco Preparata, Steve Reiss

1. Discussion of Meeting Agenda
   The agenda was approved.

2. Development of Semester-Long Agenda for Committee
   The committee heard from Eli (CS Chair) about his expectations for the committee as well as the issues that will come before the committee.

   Eli listed both long- and short-term issues for the committee to consider. The short-term issues are the following:

   (a) Request for Approval of *Introduction to Combinatorial Optimization* by Meinolf Sellman
       This issue was discussed later in the meeting.

   (b) Small Experimental Course in Scientific Computing
       John Hughes is going to teach such a course in the spring to an audience of about 15 students in which MatLab and various scientific computing packages are used. The purpose of the course is to determine if we should modify CS4 experiment to make it more attractive and useful to students concentrating in other departments. A revised CS4 would continue to be taught by Alan Usas who has also raised the question of using scientific programming packages.

   (c) Course Enrollments
       Eli noted that a very substantial percentage of our enrollments are in courses that are not used by concentrators.
Eli also listed the following long-term issues:

(a) New Course *Algorithmic Foundations of Computational Biology*

Sorin Istrail is going to teach this course in the spring.

Two issues need to be decided about it: 
a) should it be classified as a theory or practice course or both, and
b) can it be a replacement for CS181 *Computational Molecular Biology* in the Computational Biology concentration?

Currently responsibility for this concentration is shared by the three faculty members who developed the concentration. Should this continue or should responsibility be assigned to the Center for Computational Molecular Biology or should some other arrangement be made?

(b) Concentration for the Science Cohort

Michael Black is heading a committee to assemble a concentration for an elite science cohort, a small group of 50 science students who would be recruited to Brown using special funds allocated for this purpose. This is an initiative that Tom Dean was spearheading when Associate Provost.

The committee whose members include Tom Dean, Philip Klein, Shriram Krishnamurthi and Sorin Istrail, has as its goal to produce a concentration that combines CS, Math, Engineering and connects deeply with the physical sciences. A central theme would be mathematical and computational modeling of systems. A centerpiece of the concentration would be a new “modeling” course. This would not be a CS concentration nor would it be a CS-light concentration. In a few weeks Michael expects that the committee will have made sufficient progress that it is appropriate for them to make a presentation to our committee.

(c) Vision for Computer Science

Eli would us to take a broad look at the undergraduate concentrations. He says that we need flexibility primarily because the field has become so large that there is too much to learn in an undergraduate concentration. He refers us to two extreme examples of undergraduate degree requirements: Harvard’s that is very flexible and Stanford’s that is too comprehensive.

3. Review of Curricula Materials

After hearing from Eli we reviewed the materials that the John Savage has collected which are at http://www.cs.brown.edu/people/jes/curricula.html. We examined briefly the reports on curricula prepared jointly by ACM and the IEEE Computer Society.
Committee members agreed to prepare short summaries of the following articles available at this web site for discussion with the committee.

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<tr>
<th>Author</th>
<th>Title</th>
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<tbody>
<tr>
<td>Claire Kenyon</td>
<td>Draft of Computing Curricula 2005</td>
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<tr>
<td>Chad Jenkins</td>
<td>Draft of Information Technology 2005</td>
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<td>Tom Doeppner</td>
<td>CC 2001 Curriculum Guidelines for Undergraduate Degree Programs in Computer Science</td>
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<td>John Savage</td>
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In addition Tom Doeppner will prepare a graph showing course prerequisite chains. He will also amend the classification of courses by area prepared by John Savage.

After the meeting Franco Preparata agreed with the Chair to make a list of issues that need to be addressed concerning the AB and ScB degrees.

4. Request for Approval of *Introduction to Combinatorial Optimization* by Meinolf Sellman

The committee met with Meinolf Sellman who is proposing that we review his request to approve his new course which he described as sitting between AI and algorithms. The CCC course proposal form that he prepared was discussed. It was noted that he needs to be explicit in stating the prerequisites and recommended courses. He will revise the form for submission to the committee.