Annual Department Assessment Report Format
2005 Calendar Year
Report Deadline: April 17, 2006

Department: Science
Name of Submitter: Julie Estabrooks
Date: April 25, 2006

1. Degree Program  ☑️ Graduate
   ☐ Undergraduate

2. Assessment Instruments
   ☑️ AM Form
   ☑️ MFT
   ☐ Department Senior Test
   ☐ Portfolio
   ☐ Survey
   ☐ Other ___

3. Students Assessed

<table>
<thead>
<tr>
<th>Venue</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day</td>
<td>27</td>
</tr>
<tr>
<td>Evening</td>
<td></td>
</tr>
<tr>
<td>AHE</td>
<td></td>
</tr>
<tr>
<td>Online</td>
<td></td>
</tr>
<tr>
<td>Graduate</td>
<td></td>
</tr>
</tbody>
</table>

4. Results of assessment:
   Assessment of Major: The majority of students have acceptable skills in reading primary literature and writing about and presenting scientific information. Writing skills could be improved, especially with regard to following established formats. Students' ability to think critically about science and scientific literature is weak. Students do not seem to have an integrated understanding of science and, in many cases, are unable to apply specific knowledge to current events.

   MFT Results: Results on the Biology MFT (22 students) are consistent across both of the semesters evaluated. Overall, there are no areas of assessment that are particularly strong or weak. There were significant differences between students in areas of strengths and weaknesses but these probably reflect students' areas of concentration (human biology, general biology, forensic science, etc.). When our institution is compared to others administering the Biology MFT, our scores remain dismal (5th percentile), consistent with previous years. We typically have one or two students each semester who score rather well on the MFT but the majority of students are at the bottom of the ranking for at least two of the four subscores.

/kbf
3/1/06
Too few students (2) took the Chemistry MFT to allow analysis.

5. Faculty analysis of results (extent to which learning goals were met):
We are doing incrementally better in achieving the learning goals related to understanding and using the scientific literature. This trend should continue as the department implements goals to develop these skills throughout the curriculum and to focus on these skills in BIOL/CHEM 395 Research Design.

Students continue to do poorly in demonstrating that they have acquired the knowledge we expect of science majors. One factor may be the attitude of students to the MFT test since performance has no effect on their grade or status.

Another issue is the number of transfer students. According to the MFT report, 77% of the students had transferred to Columbia College from another institution. Since we have no way of evaluating the content or rigor of previous coursework, it becomes difficult to evaluate the effectiveness of our own courses.

An additional complicating factor is that Forensic Science students take the Biology and Chemistry MFT's. They have significant coursework in the sciences but do not have the breadth or depth of courses that biology and chemistry major take. Again, this makes interpretation of MFT results difficult.

There may be other issues that the department needs to address. For example, we are going to look into a departmental exam that will allow students to assess whether they are ready to continue on to upper level courses or whether they need additional background and reinforcement of fundamental areas before proceeding.

6. Recommendations for improvement:

a. Develop a system for keeping detailed information on individual students, including transfer status, location and type of coursework taken at other institutions, major and career goals.

b. Itemize essential skills and fundamental areas of knowledge and determine how each of these can be progressively developed through course sequencing. As a corollary, examine current course sequences to be sure students are receiving adequate preparation for upper level courses.

c. Emphasize critical thinking at all levels and attempt to develop students' analytical skills.

/kbf
3/1/06