Prefreshman Summer Program GOAL & OBJECTIVES

Goal: To help Prefreshmen begin the process of becoming successful Cornell students.

Objectives:
• To improve student skills in academic areas such as chemistry, mathematics, and writing
• To develop effective study skills and time management strategies
• To evaluate student strengths and weaknesses
• To create realistic expectations about academic requirements at Cornell
• To introduce students to support services available at Cornell
• To provide a comprehensive orientation to life on campus.
• To establish a living and learning community
General Chemistry I (CHEM 2070)

Large class (800-900 students) mostly pre-med, pre-vet, nutrition

Two 50-minute lectures each week

Grade distribution constant. Median grade: B-
Changes to PSP Chemistry

Focus on CHEM 2070 vs High School
   Content
   Question Style
   Active Learning, Problem-Solving
   Grading Scheme

High Work Load

Assistance Outside Class
   Course assistant-to-student ratio
   Facilitated Study Groups
   Problem-Solving Sessions with faculty
   Office Hours with peer tutors
   Strengthening Algebra (starting in 2013)

Limitations
Exam Questions

2005 PSP Chemistry Final Exam Questions
1. Which measurement contains a total of three significant figures?
   A) 0.01g     B) 0.010g     C) 0.0100g     D) 0.010000g

2. What is the total number of grams of KCl (formula mass 74.6) in 1.00 liters of 0.200 molar solution?
   A) 7.46g     B) 14.9g     C) 22.4g     D) 29.8g

2012 PSP Chemistry Exam #1 Question
In the “thermite reaction” iron oxide (Fe$_2$O$_3$) reacts with aluminum (Al) to produce aluminum oxide (Al$_2$O$_3$) and iron (Fe). 81.7 g of Fe$_2$O$_3$ is mixed with 24.6 g of Al and the reaction goes to completion. Determine the masses of each species (Fe, Al, Fe$_2$O$_3$ and Al$_2$O$_3$) present after the reaction finishes.
Outcomes

• Pre-freshman grade distribution in CHEM 2070 is now approaching that of the rest of the class.

• Unexpected outcome: PSP students serving as Course Assistants.
PSP CHEM Course Assistants who are former Prefreshmen

• 2013, 2014: 7
• 2012: 4
• 2011 and prior: ~ 1

“I am so amazed by the devotion of all of the teaching assistants. I appreciate having a variety of teaching assistants, but it seems like the TAs who were in PSP at some point are able to relay the information much better.”
Changes in study habits:

<table>
<thead>
<tr>
<th>During (high school or PSP), did you usually:</th>
<th>During High School</th>
<th>During PSP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Review course material frequently?</td>
<td>%Yes 39</td>
<td>%Yes 68</td>
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<tr>
<td>2. Study with other students?</td>
<td>%Yes 43</td>
<td>%Yes 78</td>
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<tr>
<td>3. Attend tutoring or help sessions if needed?</td>
<td>%Yes 49</td>
<td>%Yes 85</td>
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<td>4. Study only right before a test?</td>
<td>%Yes 81</td>
<td>%Yes 39</td>
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<td>5. Complete assignments right before they were due?</td>
<td>%Yes 82</td>
<td>%Yes 53</td>
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<td>6. Make a schedule to manage time?</td>
<td>%Yes 38</td>
<td>%Yes 67</td>
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