State of the Graduate Program

Department of Computer Science
Purdue University
Overview

• Graduate program size and quality
• 2013 admissions
• Graduate student performance
• Annual review improvements
• Other developments
Size of Graduate Program

[Bar graph showing the size of the graduate program from 1994 to 2013, with a significant increase after 2010.]
Focus: Improve Quality

- 2008-2011: Expansion led to doubling
  - Needed
  - But quality concern

- 2012-2013: Tighten quality
  - Admissions
  - Graduate student performance
# 2013 Admissions

<table>
<thead>
<tr>
<th></th>
<th>07</th>
<th>08</th>
<th>09</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Enrolled</strong></td>
<td>120</td>
<td>193</td>
<td>214</td>
<td>249</td>
<td>254</td>
<td>245</td>
<td>249</td>
</tr>
<tr>
<td><strong>Applications</strong></td>
<td>724</td>
<td>771</td>
<td>1082</td>
<td>1097</td>
<td>1193</td>
<td>1142</td>
<td>951</td>
</tr>
<tr>
<td><strong>Admitted</strong></td>
<td>84</td>
<td>268</td>
<td>314</td>
<td>346</td>
<td>259</td>
<td>160</td>
<td>187</td>
</tr>
<tr>
<td><strong>Incoming</strong></td>
<td>23</td>
<td>86</td>
<td>48</td>
<td>73</td>
<td>55</td>
<td>35</td>
<td>65</td>
</tr>
<tr>
<td><strong>Accept. Rate</strong></td>
<td>27%</td>
<td>32%</td>
<td>15%</td>
<td>21%</td>
<td>21%</td>
<td>22%</td>
<td>35%</td>
</tr>
</tbody>
</table>
2013 Admissions Process

• **Focus: quality**
  - Fewer admits but good yield rate
  - GPA is increasing
  - All admitted Ph.D. students receive financial support (RA, TA, fellowship)
  - Others: admitted to M.S. program

• **Significant effort by Grad Admissions Committee**
  - Admitted students interviewed by faculty and grad students
  - Vitek et al.
## Diversity of Incoming Students

<table>
<thead>
<tr>
<th></th>
<th>07</th>
<th>08</th>
<th>09</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
</tr>
</thead>
<tbody>
<tr>
<td>US/PR</td>
<td>17%</td>
<td>29%</td>
<td>24%</td>
<td>11%</td>
<td>9%</td>
<td>37%</td>
<td>26%</td>
</tr>
<tr>
<td></td>
<td>(5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td>17%</td>
<td>15%</td>
<td>11%</td>
<td>25%</td>
<td>15%</td>
<td>23%</td>
<td>12%</td>
</tr>
<tr>
<td></td>
<td>(8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>URM</td>
<td>8%</td>
<td>3%</td>
<td>6.5%</td>
<td>1.3%</td>
<td>3.6%</td>
<td>2.8%</td>
<td>1.5%</td>
</tr>
<tr>
<td></td>
<td>(1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PhD objective</td>
<td>87%</td>
<td>79%</td>
<td>70%</td>
<td>56%</td>
<td>67%</td>
<td>49%</td>
<td>54%</td>
</tr>
<tr>
<td></td>
<td>(37)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Diversity: Total Enrolled

Overall: Not much change, need for improvement

<table>
<thead>
<tr>
<th></th>
<th>07</th>
<th>08</th>
<th>09</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13*</th>
</tr>
</thead>
<tbody>
<tr>
<td>US/PR</td>
<td>33 (26%)</td>
<td>54 (17%)</td>
<td>59 (26%)</td>
<td>57 (23%)</td>
<td>44 (17%)</td>
<td>47 (19%)</td>
<td>62 (25%)</td>
</tr>
<tr>
<td>Females</td>
<td>19 (15%)</td>
<td>32 (16%)</td>
<td>31 (14%)</td>
<td>39 (16%)</td>
<td>40 (16%)</td>
<td>43 (18%)</td>
<td>39 (16%)</td>
</tr>
<tr>
<td>URM</td>
<td>5 (4%)</td>
<td>7 (4%)</td>
<td>9 (4%)</td>
<td>7 (2.7%)</td>
<td>5 (2%)</td>
<td>7 (3%)</td>
<td></td>
</tr>
</tbody>
</table>
Graduate Student Performance

- **Need for improved monitoring**
  - Student population doubled 2007-2011
  - Significant load on Graduate Office staff and Graduate Committee
  - Lax petition system, lax annual PhD student review/follow-up
  - About 1/3 fell behind
  - Severe cases: 9-10 semesters past qualifier deadline
  - Not good for student, not good for dept.
Graduate Student Performance

• **Solution 1: Enforce petition system**
  
  • Back to pre-2008
  
  • When deadlines pass, rules are violated: file petition with the graduate committee
  
  • Catch problem cases early
Graduate Student Performance

- **Solution 2: Revamp Annual PhD Student Review**
  - Semi-automated based on objective performance criteria
    - qualifier deadlines, GPA, prelim deadline, etc.
    - implementation by Nick Hirschberg
  - Use student & advisor input to augment evaluation
  - Poor & unsatisfactory students: low priority in TA assignment
Graduate Student Performance

• **Solution 3: Follow-up**
  - Formal letter from review specifies problem areas
  - Meet students with poor, unsatisfactory evaluations
  - Check student has met/discussed with advisor
  - Student has plan moving ahead
  - Hopeless cases: terminated from PhD program & given option to graduate with MS degree

overall: significant movement toward academic progress
Other Developments

• New Teaching Fellowship for senior PhD students
  • Emphasized by CS Head, well received by students
• Strengthening of ethics training
• On-line MS enrollment: increasing trend
• Update of CS graduate web pages
  • Outdated information, revision/update required by faculty
  • Implementation: Renate Mallus
• New courses, etc.
Questions?

- **Comments and feedback**
  - park@cs.purdue.edu