Summer Bridge Program
Radford University
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# Motivation (1)

- **# of Undergraduate Students in CS/IT at RU**

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Total Student Count</th>
<th>Female Student Count</th>
<th>Female Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>463</td>
<td>104</td>
<td>22.46%</td>
</tr>
<tr>
<td>2001</td>
<td>551</td>
<td>119</td>
<td>21.60%</td>
</tr>
<tr>
<td>2002</td>
<td>522</td>
<td>94</td>
<td>18.01%</td>
</tr>
<tr>
<td>2003</td>
<td>414</td>
<td>50</td>
<td>12.08%</td>
</tr>
<tr>
<td>2004</td>
<td>367</td>
<td>38</td>
<td>10.35%</td>
</tr>
<tr>
<td>2005</td>
<td>342</td>
<td>29</td>
<td>8.48%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>2659</td>
<td>434</td>
<td>16.32%</td>
</tr>
</tbody>
</table>

# Motivation (2)

- **Retention Rate of Female Students in CS/IT at RU**

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cnt</td>
</tr>
<tr>
<td>2000</td>
<td>104</td>
</tr>
<tr>
<td>2001</td>
<td>119</td>
</tr>
<tr>
<td>2002</td>
<td>94</td>
</tr>
<tr>
<td>2003</td>
<td>50</td>
</tr>
<tr>
<td>2004</td>
<td>38</td>
</tr>
<tr>
<td>2005**</td>
<td>29</td>
</tr>
<tr>
<td>Grand Total</td>
<td>405</td>
</tr>
</tbody>
</table>

** As of 2005, this group has not been at RU long enough to calculate the 1 year retention rate and was not used in the overall total.
CS/IT field means...

- Dept. of Information Technology at RU (Concentrations; www.radford.edu/itec)
  - Computer Science and Technology
    - Computer Science
    - Database
    - Software Engineering
    - Networks
  - Information Science and Systems
    - Information Systems
    - Enterprise Systems Development
    - Web Development

Goal

- SBP is a residential summer camp for female high school students, which is designed to promote female students recruitment and retention in the following field(s):
  - Year 2006: CS/IT
  - Year 2007: CS/IT and Math
  - Year 2008: CS/IT, Math, and Sciences
**Action Plans (1)**

- For a female high school students:
  - Expose female high school students to two project driven courses in the CS/IT (STEM) fields
  - Help them to meet their role models/mentors (female undergraduate students and female faculty members)
  - Help them to meet their peers (female high school students) who could support them when they choose a CS/IT (STEM) field as their major or future career.

**Action Plan (2)**

- For Parents of Female High School Students
  - Provide the information session on:
    - a job market in the fields (www.bls.gov)
    - an admission process at Radford University and Virginia Community Colleges
    - 2+2 agreement
    - a financial aid
Action Plan (3)

• For Female Undergraduate Students
  - Let them serve as a teaching assistant (or chaperon) and peer mentor in the SBP
    • in and outside of a classroom
    (We’ve speculated that they are motivated by their own experience sharing to female high school students.)

SBP Summary

<table>
<thead>
<tr>
<th></th>
<th>SBP 2006</th>
<th>SBP 2007</th>
<th>SBP 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target Fields</td>
<td>CS/IT</td>
<td>CS/IT, Math</td>
<td>CS/IT, Math, Sciences</td>
</tr>
<tr>
<td>Length</td>
<td>3 days</td>
<td>1 week</td>
<td>1 week</td>
</tr>
<tr>
<td>Target Participants</td>
<td>11&lt;sup&gt;th&lt;/sup&gt; and 12&lt;sup&gt;th&lt;/sup&gt; graders</td>
<td>11&lt;sup&gt;th&lt;/sup&gt; and 12&lt;sup&gt;th&lt;/sup&gt; graders</td>
<td>10&lt;sup&gt;th&lt;/sup&gt;, 11&lt;sup&gt;th&lt;/sup&gt;, and 12&lt;sup&gt;th&lt;/sup&gt; graders</td>
</tr>
<tr>
<td>Fee</td>
<td>Free</td>
<td>$100 and a fee waiver is available</td>
<td>$100 and a fee waiver is available</td>
</tr>
<tr>
<td># of Participants</td>
<td>29</td>
<td>69</td>
<td>?</td>
</tr>
<tr>
<td>Funded by</td>
<td>CIST at RU</td>
<td>CIST &amp; CAS, VCCS (NSF), Apple</td>
<td>CST, VCCS, PD</td>
</tr>
</tbody>
</table>
Recruiting Participants

• Career Coaches
  - Ask career coaches of VCCS to circulate the information on SBP registration

• Postal Mails and Emails
  - Send an invitation letter, a poster, and a brochure to principals, teachers (of CS/IT and Math related courses), and guidance counselors in 301 high schools and 17 governor’s schools in Virginia

• SBP Website
  - Maintain a website at www.radford.edu/bridge.

Tracks in SBP

• Create Computer Games (2007, 2008)
• Mathematics and Social Analysis (2007, 2008)
• Mathematics in Art (2007, 2008)
• Introduction to Forensic Anthropology (2008)
• Understanding and Using Biotechnology (2008)
• Understanding the Stars (2008)
Sample Schedule
SBP 2007

- **Schedule**

Evaluation

- Any changes in the number of female students or the retention rate of female students in CS/IT at RU?

<table>
<thead>
<tr>
<th></th>
<th>Fall 2007</th>
<th>Fall 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Applied</td>
<td>Accepted</td>
</tr>
<tr>
<td>SBP 2006:out of 29</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>SBP 2007:out of 69</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

- Example of Survey Results (of CS/IT tracks in SBP 2006)
  
  [Q] Would you consider CS/IT as a major or career after attending this program and why?
  - Among 25 answers, 18 said yes (including 3 who were interested in the field before attending the program).
Lessons Learned

• Forming a good SBP team is the key
  - Instructors, TAs, Chaperons in a dorm, a SBP Coordinator, a Webmaster, etc.

• Better Follow-up and Evaluation Mechanism is required
  - We could not trace # of students who attend in a program related to the SBP at other higher education institutes

• Long Term Funding Source is required to have a longitude evaluation, a better follow-up mechanism, and a scholarship.

Questions?

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