WHAT IS OUTREACH?

PURDUE K-12 OUTREACH FOR COMPUTER SCIENCE

- Organized effort to influence the conversation about computer science education
- Opportunity to engage in teacher development and support
- Focus on inspiring K-12 students to develop their interest in computing, problem solving, and technology
- Ability to expand the potential recruiting base for Purdue University
MAJOR CHALLENGES

PURDUE K-12 OUTREACH FOR COMPUTER SCIENCE

• Improving the understanding of what computer science is

• Finding the right context for computer science in K-12 curriculum

• Defeating the stereotypes that negatively affect the perception of computer scientists

• Developing opportunities for meaningful interventions
## Indiana K-12 Population

### Purdue K-12 Outreach for Computer Science

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indiana’s K-12 enrollment</td>
<td>1,041,311</td>
<td>1,046,026</td>
</tr>
<tr>
<td>Indiana AP CS A exams / total AP exams</td>
<td>391/42230 (0.93%)</td>
<td>507/44390 (1.14%)</td>
</tr>
<tr>
<td>Purdue CS enrollees / total enrollees</td>
<td>282/7117 (3.9%)</td>
<td>311/6808 (4.6%)</td>
</tr>
<tr>
<td>Purdue CS undergraduates / total undergraduates</td>
<td>821/29440 (2.8%)</td>
<td>948/29255 (3.2%)</td>
</tr>
</tbody>
</table>

http://compass.doe.in.gov/dashboard/overview.aspx  
http://research.collegeboard.org/programs/ap/data/
Two camps
• 64 total students
• Middle School – Intro to CS
• High School – Big Data
• Student tuition covers about 60% the operating cost
• Support this year from State Farm, Boeing and Ms. Vicki Capadona
<table>
<thead>
<tr>
<th>Department</th>
<th>Male</th>
<th>Female</th>
<th>% Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>College of Science Total</td>
<td>2243</td>
<td>1116</td>
<td>33.2%</td>
</tr>
<tr>
<td>Computer Science</td>
<td>833</td>
<td>94</td>
<td>10.1%</td>
</tr>
<tr>
<td>Physics</td>
<td>155</td>
<td>24</td>
<td>13.4%</td>
</tr>
<tr>
<td>Math</td>
<td>197</td>
<td>78</td>
<td>28.4%</td>
</tr>
<tr>
<td>Chemistry</td>
<td>119</td>
<td>56</td>
<td>32%</td>
</tr>
<tr>
<td>Earth, Atmospheric, Planetary Science</td>
<td>51</td>
<td>33</td>
<td>39.3%</td>
</tr>
<tr>
<td>Statistics (w/ actuarial science)</td>
<td>175</td>
<td>116</td>
<td>39.9%</td>
</tr>
<tr>
<td>Biology</td>
<td>155</td>
<td>252</td>
<td>61.9%</td>
</tr>
</tbody>
</table>

Note that not all College of Science students are included above.

MAGIC MENTORING
PURDUE K-12 OUTREACH FOR COMPUTER SCIENCE

- Purdue students mentoring high school women in after-school clubs
- Four participating high schools
- Corporate field trips
- State Farm, Luther Consulting, Boeing sponsoring clubs

Out-of-box program for all universities to employ

https://www.facebook.com/PurdueMAGIC
REACH OUT FOR COMPUTER SCIENCE
PURDUE K-12 OUTREACH FOR COMPUTER SCIENCE

Bring CS to schools without
- Work with youth-serving organizations to engage students in CS.
- Provide Purdue students with opportunity to develop leadership skills, and give back to community.

Purdue University
CS TEACHER WORKSHOPS
PURDUE K-12 OUTREACH FOR COMPUTER SCIENCE

IBEA Conference CS Track
- Provide for visiting instructors
- Travel costs for teachers
- Support for CSTA which in turn supports Indiana’s CS teacher population.