Objective
Create a coordinated approach for systematically forming interdisciplinary student teams and matching them with sponsored capstone projects.

Introduction & Background
The University of Idaho has an interdisciplinary engineering capstone program with:
- Mechanical engineering
- Electric and computer engineering
- Biological engineering
- Computer science

A large coordinated effort is required to:
- Recruit sponsored projects
- Introduce project options to the students
- Assign interdisciplinary teams to projects with specific needs

Historically
Interdisciplinary projects are recruited, then…

at the beginning of the capstone cycle, each project has a representative give a brief (~5 min) oral presentation in class, outlining the project synopsis

Pros:
- Every student learns about each project
- Every project is given ~equal exposure

Cons:
- Takes ~1.5 weeks to present all project options
- Students must attend all presentations, even if there is not a disciplinary match
- No opportunity for one-on-one interaction

Methodology and Implementation in 2017-2018

Project Recruiting
Sources of projects:
- External industry partners
- Internal departmental research
- On-campus departments outside of engineering

For each project:
- Determine ideal size and mix of interdisciplinary students
- Keep a running tally of total student disciplinary needs

For the 2017-2018 capstone cycle:
- 42 projects were recruited as candidates
- 25 projects needing interdisciplinary mix of students
- Total student need was ~16% higher than overall enrollment

<table>
<thead>
<tr>
<th>2017-2018 UI Capstone Cycle</th>
<th>ME</th>
<th>CompE</th>
<th>EE</th>
<th>CS</th>
<th>BE</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total # of projects recruited</td>
<td>42</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Total # of interdisciplinary projects</td>
<td>25</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Project student needs</td>
<td>69</td>
<td>17</td>
<td>40</td>
<td>33</td>
<td>14</td>
<td>173</td>
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<tr>
<td>Actual enrolled students</td>
<td>58</td>
<td>6</td>
<td>33</td>
<td>32</td>
<td>11</td>
<td>140</td>
</tr>
<tr>
<td>% over-recruited</td>
<td>19%</td>
<td>183%</td>
<td>21%</td>
<td>3%</td>
<td>27%</td>
<td>16%</td>
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Project Fair
Students are provided advanced information (synopsis) for each project option

Format: one-day event, similar to a traditional Career Fair (1.5 hours)
- Booths representing each project
- Representatives for each project attends, and
  - Presents the project using posters, videos, and physical hardware
  - Answers questions from students about the project

Student Assignments:
Before the Project Fair:
1) Preview each project synopsis
2) Identify projects of interest
3) Compile a list of questions for the representatives

After the Project Fair:
Submit a Project Bid Portfolio with
A) Top 4 project preferences
B) 1-page resume
C) Relevant personal information

Team Formation
(conducted by faculty)

Results:
- 34 Projects Assigned
- 23 Externally sponsored projects
- 18 interdisciplinary projects

Observations:
- Over-recruiting of projects adds flexibility and makes the project bid process more competitive.
- Over half of the projects are interdisciplinary
- External sponsor presence at the career fair leads to high student interest

Summary & Next Steps
- With a 1-day Project Fair event, the team formation process is shortened by 1 full week.
- Project Fair format enables more student-sponsor networking
- Sponsor participation in the Project Fair higher student interest
- Recruiting a surplus of projects allows more flexibility to:
  - ensure interdisciplinary needs of the project are met
  - ensure students are assigned projects they are interested in
- For future Project Fairs, need to allow more time (up to 2-3 hours) for networking and thorough evaluation of all project options

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