Study on Success of UCF Engineers in Industry

UCF College of Engineering and Computer Science

Dean's Advisory Board

Premise

- Discussions at November 2015 Board meeting led to chartering group to look at preparedness of graduates to meet the needs of business

- Anecdotal evaluation suggests that more than an insignificant number of graduates come into the workforce and either are incapable or unwilling to perform the tasks required by industry (both skill base and work environment/life balance)

- Team formed and discussed methods of bounding issue and developing methods to obtain data for purposes of quantification and feedback to college

Current Status

- Developed survey to give to students and supervisors in internships as well as entry level full time hires
  - Company overview/stats
  - Basic hiring minimum requirements
  - Hiring trends
  - Qualitative evaluation of student performance
  - Student and employer feedback
    - What differentiates UCF graduates from others
    - What do they lack, or need more of
- Distributed survey to members of advisory board

Preliminary Data Snapshot

Lockheed Martin

NASA

Parsons

Power Systems Manufacturing (PSM), An Ansaldo Energia Company

Texas Instruments

The Nielsen Company

Northrop Grumman

Wharton Smith, Inc.

Preliminary Data Snapshot

- UCF students and graduates are just as good, and in some cases better than their peers.

- Students and graduates rank between 8-10 in a 1-10 scale for capacity to perform, ability to integrate, foundational skills and willingness to learn company needs.

- Strong opinion on further emphasis on the practical application of engineering principles.

- Need more opportunities for on-the-job experience, i.e. internships/co-ops, UREs, workshops, seminars on broad field of topics.

- More and deeper computer programming curriculum in all disciplines.

Next Steps

- Awaiting responses, and looking for member participation to help ensure we have a good cross section of data

- Correlate data received

- Present to dean and staff for discussion and action plan

Backup

UCF College of Engineering and Computer Science

Dean's Advisory Board

Team

- Mike Sarpu – Lockheed Martin
- Pat Simpkins – NASA
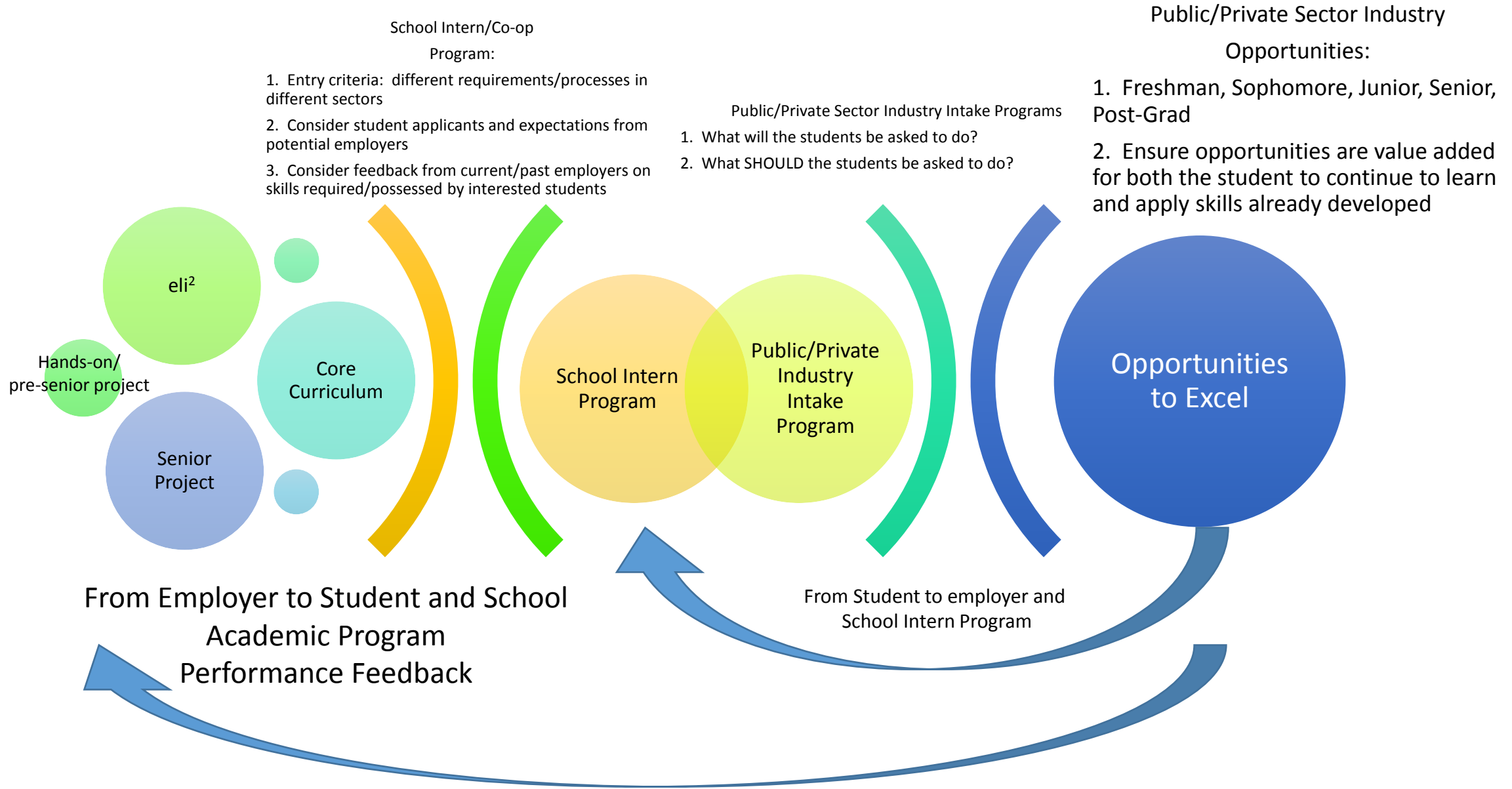- Sonserae Toles - Siemens
- Robin Knight - UCF

Taxonomy of Issues

Are UCF Engineering graduates successful in the workplace?

- Measures of effectiveness of education
    - Hiring rates – quantitative
    - Success in Workplace – quantitative/qualitative
        - Ability to perform work at necessary quality level
        - Ability to integrate into workforce
        - Career Success
        - Willingness to do what industry needs

- Data Sources
    - Surveys
    - College Data
    - Student Data
    - Employer Data

- Potential areas of impact within program
    - Recruitment –who enters the program
    - Acceptance – where do we set the bar
    - Curriculum – what do we teach
    - Activities – what other opportunities are provided
    - Progression - how do we measure competency and maintain standards of performance/advancement
    - Graduation – what is the exit criteria

Alternate Graphic for Input/Feedback

School Intern/Co-op

Program:

1. Entry criteria: different requirements/processes in different sectors

2. Consider student applicants and expectations from potential employers

3. Consider feedback from current/past employers on skills required/possessed by interested students

Public/Private Sector Industry Intake Programs

1. What will the students be asked to do?

2. What SHOULD the students be asked to do?

Public/Private Sector Industry

Opportunities:

1. Freshman, Sophomore, Junior, Senior, Post-Grad

2. Ensure opportunities are value added for both the student to continue to learn and apply skills already developed

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Hands-on/ pre-senior project

Core Curriculum

Senior Project

School Intern Program

Public/Private Industry Intake Program

Opportunities to Excel

From Employer to Student and School Academic Program Performance Feedback

From Student to employer and School Intern Program

Some questions for the room

- What is the measure of success of the program
    - Quantity of graduates vs. quality of graduates
    - General level of performance
    - Is employability a measure of the program?
- How do we ensure students understand what engineering is
    - Do students understand what is expected of engineers in industry?
    - Are students in the program who would not be if they knew?
- Are the standards high enough