ENGINEERING & COMPUTER SCIENCE (ECS) SCHOLARS PROGRAM

HIGH IMPACT PRACTICES (HIP) DURING FIRST YEAR IN COLLEGE HELPING RETENTION

Raman Unnikrishnan
College of Engineering and Computer Science
California State University Fullerton, Fullerton
The Problem and the chatter about The Problem

Cal State Fullerton and the College of ECS
  - Who are we?
  - Unique challenges

Serendipity strikes- A title V grant and a national recognition

ECS Scholars program and freshmen retention

Data-driven approach and encouraging results

Sustaining retention efforts

Several small steps- one big impact
California State University, Fullerton (CSUF), located 25 miles southeast of Los Angeles in Orange County, is among the largest universities in the nation with a fall 2012 enrollment of 37,677 students.

CSUF ranks first in California and fourth in the nation in bachelor’s degrees awarded to Hispanics and is ranked ninth nationally in the number of baccalaureate degrees awarded to minority students (Diverse Issues in Higher Education, 2011).

There is no ethnic majority among its students; 32% of students identify as Hispanic, and more than half come from families in which neither parent graduated from college.
### Undergraduate Programs
- Civil Engineering
- Computer Engineering
- Electrical Engineering
- Mechanical Engineering
- Computer Science

### Graduate Programs
- Civil Engineering
- Computer Engineering (MS and BS/MS programs)
- Electrical Engineering
- Environmental Engineering
- Mechanical Engineering
- Computer Science
- Software Engineering

#### Fall 2011 data
<table>
<thead>
<tr>
<th></th>
<th>Dean’s List</th>
<th>Academic Probation</th>
</tr>
</thead>
<tbody>
<tr>
<td>All University</td>
<td>13.6%</td>
<td>7.6%</td>
</tr>
<tr>
<td>STEM</td>
<td>9.1%</td>
<td>10.0%</td>
</tr>
<tr>
<td>ECS</td>
<td>9.0%</td>
<td>16.0%</td>
</tr>
</tbody>
</table>

(5.4% of total student population)
“…a troubling decline in the number of U.S. citizens who are training to become scientists and engineers, whereas the number of jobs requiring science and engineering…training continues to grow…”

Six Year Graduation Rate of Different Groups

- Asian Americans: 67%
- Caucasians: 60%
- Hispanics: 44%
- Native Americans: 39%
- African Americans: 38%
- Females: 61%
## Latino Undergraduate Population in ECS

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Head Count</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 2010</td>
<td>475</td>
<td>31.6</td>
</tr>
<tr>
<td>Fall 2011</td>
<td>535</td>
<td>32.6</td>
</tr>
<tr>
<td>Fall 2012</td>
<td>670</td>
<td>33.2</td>
</tr>
<tr>
<td>Fall 2013</td>
<td>A whole lot more...</td>
<td>AY Data in progress.</td>
</tr>
</tbody>
</table>
ECS Mantra

- If a student is good enough to secure admission, he/she is good enough to graduate.

- It is the responsibility of the program to empower students so that they will have no excuse not to graduate with a degree in Engineering or Computer Science.
ECS Scholars

- Selection of at-risk students
- Peer Mentoring
- Tutoring for core classes
- Leadership skills and campus involvement (MAES, SHPE, SWE, Professional Societies)
- Study skills for core math, science & ECS courses
- Service-learning experience
- Receive specialized academic advisement (CASECS); PR
- Block Scheduling
CONCLUSIONS-1

BEFORE DEPLOYING THE RETENTION STRATEGIES OUTLINED IN THIS PAPER

One-year retention rate in Engineering & Comp. Sci.

27% Fall 2007

Two-year retention rate in Engineering & Comp. Sci.

34% Fall 2007

AFTER DEPLOYING THE RETENTION STRATEGIES OUTLINED IN THIS PAPER

2010 FTF- 3-year RR in ECS 42.8%

Fall 2011- 2-year RR in ECS 53%

Fall 2012- 1-year RR in ECS 74%
CONCLUSIONS-2
CLOSING THE GAP

RETENTION OF LATINO STUDENTS

2010 FTF- 3-year RR in ECS 43.9%
Fall 2011- 2-year RR in ECS 52.3%
Fall 2012- 1-year RR in ECS 73%

AFTER DEPLOYING THE RETENTION STRATEGIES OUTLINED IN THIS PAPER

GENERAL POPULATION

2010 FTF- 3-year RR in ECS 42.8%
Fall 2011- 2-year RR in ECS 52.9%
Fall 2012- 1-year RR in ECS 74%
IMPROVING ECS RETENTION IN THE FIRST YEAR

TITLE V GRANT

FALL 2007

ECS Scholars Program

Title V Retention Programs, the University Learning Center (ULC), the Center for Academic Support in Engineering and Computer Science (CASECS) and the Freshman Programs.
EXCELENCIA IN EDUCATION
WAL-MART SEMILLAS GRANT

Scaled Down Integration of Services
## ASPIRATIONS:
### 2ND YEAR AND BEYOND

<table>
<thead>
<tr>
<th>Cohort year</th>
<th>Total Head Count of Freshmen</th>
<th>Persist to 2nd year</th>
<th>Persist to 3rd year</th>
<th>Persist to 4th year</th>
<th>Grad in 4 years</th>
<th>Enter 5th year</th>
<th>Grad in 5 years</th>
<th>Enter 6th year</th>
<th>Grad in 6 years</th>
<th>&gt; 6 years to grad</th>
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</thead>
<tbody>
<tr>
<td>2013</td>
<td>550</td>
<td>468</td>
<td>385</td>
<td>358</td>
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<td><strong>275</strong></td>
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<td>2014</td>
<td>600</td>
<td>510</td>
<td>420</td>
<td>390</td>
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<td>180</td>
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<tr>
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<td>390</td>
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<td>180</td>
<td>300</td>
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<td>30</td>
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<td>2016</td>
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<td>423</td>
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<td>390</td>
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<tr>
<td>2017</td>
<td>650</td>
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<td>325</td>
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<td>33</td>
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THANK YOU

Questions?