Recruiting, Engaging, and Retaining Underrepresented and First Generation College Students

Victor Andersen
Community College of Aurora
Aurora, Colorado
CCA Overview

- **Annual Enrollment:** 12,780
  - Full-time = 17%
  - Part-time = 83%
  - Male = 43%
  - Female = 57%

- **Diversity**
  - Five continents and more than 60 countries
    - African American = 26%
    - American Indian = 2%
    - Asian = 7%
    - Hispanic/Latino = 18%
    - White/Non-Hispanic = 41%
CCA Overview

• Faculty

• Full-Time: 48
  • Adjunct: 345
  • Student to Faculty Ratio: 22:1

• Student to Full Time Faculty Ratio: 190:1
Programs: 2009-2012

- 3 Balloonsat Flights
- 2 Robotics Teams
- 1 HASP Flight
- 1 micro-Gravity Flight
- 3 Symposium Presentations
Not Good Enough

• Missing students who might be interested
• Difficult to maintain engagement throughout time at CCA
• Transfer students not always successful
• Faculty workload
Not Good Enough, cont.

- Complicated lives: difficult to find time to meet and work with team
Recruitment

• Contact students in gateway courses
• Contact students who have self-identified as engineering/science
• Ask faculty to identify and recruit candidates
• Develop the student grapevine
Engagement

• Hands on programs

• Personal contact
  – Achievement coach
  – Academic Advisor
  – Faculty

• Form Cohorts
Retention

• What does retention look like for CC student?
  – Successful transfer
    • Academic preparation
    • “Life” preparation
    • Not be behind peers who started at transfer institution
  – Continue with Space Grant after transfer
    • Two-sided mentoring
Experimental Design

• Teach version of “Gateway to Space”
• 28 students in 2 years
• 7 Symposium Presentations
CCA Space Grant Scholars

• Target students at beginning of college career
• Scholarships for eligible students
• 2 intro to engineering workshops
• Required coaching and advising
• Try to maintain engagement for 4+ semesters
Community College of Aurora Pre-Engineering Pipeline

**Early Engagement - Semester 1**

**Goal:** Identify and advise prospective pre-engineering students early in their academic career.

**Activities:** One-on-one advising, funding of early coursework, and engineering workshops to engage students in activities related to engineering.

**Cost:** $550/student for early coursework (MAT121, MAT122, CHE101 or CHE111) funding and supplies for workshops;

**Current Funding:** Colorado Space Grant Consortium, NASA, Course Grant, currently $9,000 per year.

**Students:** Fall 2014 ten students involved, eight funded.

---

**Continuing Engagement I – Semester 2**

**Goal:** Advise and keep pre-engineering students actively engaged in engineering activities as they progress through their coursework.

**Activities:** One-on-one advising, Robotics Challenge special topics course currently being developed.

**Cost:** Funding of 1 credit Robotics course for 8-10 students, supplies for robots, and travel costs for Robot Challenge competition. $550/student

**Current Funding:** Colorado Space Grant Consortium, NASA, Course Grant currently $9000 per year.

Plans to apply for CCA Innovation Grant.

**Students:** Spring 2015 – unknown at this time. Target 1 or 2 teams of four.

---

**Recruitment and addition of new students.**
Continuing Engagement II – Semester 3

**Goal:** Advise and keep pre-engineering students actively engaged in engineering activities as they progress through their coursework.

**Activities:** One-on-one advising, one credit special topics course to emphasize programming skills needed for engineering studies (currently being developed), and Peer Instructor Workshops.

**Cost:** $550/student for special topics course and supplies for workshops;

**Current Funding:** Unknown at this time.

**Students:** Fall 2015 – unknown at this time.

Engineering Capstone – Semester 4

**Goal:** Preparation of students for transfer and completion of Project Design coursework.

**Activities:** One-on-one advising and EGG151 Experimental Design.

**Cost:** Funding of 2 credit Experimental Design course for 12-16 students, supplies for student projects. $550/student

**Current Funding:** Colorado Space Grant Consortium, NASA, Base Grant currently $10,000 per year.

**Students:** Spring 2013 sixteen students & Spring 2014 twelve students completed EGG151 Experimental Design course.

Spring 2015 – unknown at this time.
Personnel

- Phebe Lassiter
- Tara Croom-Sanchez
- Tom Dillon
- Martha Jackson-Carter
- Bernadette Garcia
- Victor Vialpando
- Bea Salazar
- Brian Sanders
- Deb Farley
- Chris Koehler
- (Bill Shelton)