Central Washington University

Science Talent Expansion Program (NSF 0653094)

Recruiting and Retaining the Next Generation of STEM Professionals

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Program Overview

- Funded in July 2007
- Academic programs for freshmen, sophomores, and transfer students
- STEP-Participating CWU Departments Include: Biology, Chemistry, Computer Science, Engineering & Industrial Technology, Geology, Mathematics and Physics
- Each year, CWU STEP serves approximately 40 freshmen, 20 sophomores, and 20 transfer students.
- Improved recruiting methods aimed at underrepresented populations in central Washington State.

Goals

- To increase the total number of CWU students majoring in STEM disciplines and graduating with STEM degrees.
- Particular emphasis is placed upon recruiting and retaining freshmen and transfer students who are traditionally underrepresented (women, minorities, low-income, and first-generation college students).
- Engage STEP students in a variety of activities that will not only increase the number of students in STEM disciplines at CWU, but will also increase the success of our students in their future STEM careers.

Objectives & Strategies

Recruitment: Continue to increase the number of underrepresented students in the program.

1. Continue to develop effective ties to high school teachers, counselors, and students to increase the number of students applying to CWU STEM disciplines and improve recruitment of underrepresented students.
2. Continue to increase the number of CWU and STEP applications from underrepresented high school students.
3. Continue to increase awareness of STEP among STEM faculty and administration at Washington State community colleges through faculty visits and continued correspondence.
4. Continue to increase the number of CWU and STEP applications from underrepresented transfer students.

Retention: Continue to improve the performance of STEP students and increase the retention of CWU STEP students in STEM majors.

2. Continue to offer transition services for transfer students (advising, introduction to CWU programs).
3. Continue to engage sophomores and transfer students in paid research, teaching, and/or recruiting experiences.
4. Continue to support and provide STEP Living Learning Community opportunities.
5. Continue to provide access to academic and social support for STEP students.
6. Continue to develop a culture of support for students.
7. Continue to offer exciting social activities for STEP students. In March 2012, Dorothy N. Mestorp (undergraduate (CWU alumni and NASA astronaut) came to the CWU campus and met with our STEP students for lunch and was the guest speaker at a STEP Scholarship Benefit Dinner and Dessert Reception.

Implementation

Recruiting

- Continue collaborative efforts with CWU Admissions and efforts with the STEP Recruiter.
- OUW STEP includes financial aid incentives for students to join and remain in STEP.
- Current recruiting achieves numbers for STEP Freshman Science Seminar. Participation by women is excellent. Ethnic minority participation is strong but we are working on implementing strategies to continue improvement.

Opportunities and Challenges

Opportunity

To recruit underrepresented high school and transfer students to participate in STEP.

Challenge

Establishing links with underrepresented-serving high schools and community colleges that will allow us to efficiently and effectively recruit underrepresented students.

OUW STEP Approach

We have developed productive relationships with OUW Admissions and with other on-campus OUW outreach programs (CAMP WATERS, GEAR UP/Minority TG). We have produced a dynamic STEP recruiting video that is specifically aimed at providing information in a way that appeals to prospective students. We have also hired a STEP Recruiter to better serve the recruiting needs of the program.

Retention

Assessment indicates that most STEP students maintain a similar or higher GPA than those who declined to participate in STEP. 47% of STEP students declare STEM majors compared to 18.5% of students who chose not to participate in STEP. This is particularly significant because STEP does not necessarily focus on recruiting the highest achieving students.

Opportunity

To increase diversity and establish strategies that increase the likelihood of success (retention and excellent academic performance) for diverse populations of students at CWU.

Challenge

Overcoming cultural hurdles and barriers that tend to decrease participation in STEP and in STEM disciplines.

OUW STEP Approach

Implement recruiting efforts that work to meet the needs of the diverse underrepresented population that we are targeting. Increasing the participation by ethnic minority faculty so that students can also see successful professors as role models and mentors. We also work to establish personal connections with the students such that we are able to provide personal mentoring and advising to each student on a regular basis – ensuring adequate academic progress and academic/social support networks for at-risk students.

Opportunity

To enroll students in a meaningful “bridging” experience that helps them to establish and maintain connections with faculty and other students in STEM departments.

Challenge

Level-appropriate research can be difficult to develop for sophomores. Some students are overwhelmed by other commitments, leaving little time or motivation for research.

OUW STEP Approach

Faculty members who agree to take on STEP sophomores in their research labs are aware of the need for level-appropriate projects and assignments. Many faculty mentors are eager to take on younger students because they are able to develop valuable and skilled research assistants who are able to remain in the lab for a longer period (vs. taking on junior or senior level students who will be graduating sooner). STEP students are also able to take on a teaching or recruiting bridging project – these type of projects are typically less time-intensive for the students but achieve the goal of keeping them engaged in STEP.