The Central Washington University (CWU) Science Talent Expansion Program (STEP) focused on recruiting and retaining freshmen, sophomore and college transfer students in science, technology, engineering and mathematics (STEM) majors, including biology, chemistry, computer science, engineering technology, geology, mathematics and physics. Priority was placed on increasing the number of traditionally underrepresented students (low-income, ethnic minorities, women, persons with disabilities, first generation college students) who majored in and graduated with degrees in these disciplines. CWU STEP is notable for an integrated, multi-pronged approach. Recruiting, curricular, social and financial elements are combined to deliver a program that helps students develop stronger ties to the university and academic departments.

The STEP program at CWU includes:

1. **Successful collaboration with the CWU Office of Admissions to develop a program that focused on recruiting talented students from traditionally underrepresented-serving high schools in the central Washington State region.** A bilingual admissions recruiter was trained to highlight strengths of STEM programs at CWU (e.g., small class size, inquiry-based curricula, abundant undergraduate research opportunities). The continuing goal is to enhance connections between CWU and high schools such that teachers and counselors recommend CWU to STEM-interested students.

2. **Financial support to participating students.** The Office of Enrollment Management provides merit-based partial tuition waivers to freshmen, and funding from the grant provided a textbook allowance.

3. **Delivery of an interdisciplinary freshman curriculum that emphasizes inquiry-based approaches to science training.** The core of this offering is the Freshmen Science Seminar, a three-quarter class sequence that trains students to complete a scientific experiment or engineering/computer project. In preparation for this, students participate in a series of smaller-scale experiments/projects centered on an interdisciplinary theme. Toward the end of the class sequence, students write proposals to do faculty-mentored research or engage in teaching assistant activities in STEM classes; meritorious proposal are funded (see Bridging Program).

4. **Delivery of a transfer class series that prepares students to do research.** Students are apprised of ongoing research opportunities, connect with a faculty mentor, and write a proposal; meritorious proposals are funded (see Bridging Program).

5. **Continued knowledge and skill development through the Bridging Program for sophomore and transfer students.** Students who write competitive research or teaching proposals (#3, #4 above) are paid to engage in the proposed research/teaching activities. (Some students choose to receive academic credit rather than financial support).

6. **Development of effective co-curricular opportunities.** The centerpiece is a program coordinator who meets with students frequently to gauge their progress and who helps students make connections within the academic community (e.g., tutoring, counseling, etc.). Another important aspect is the Living Learning Community, a science-theme housing option that fosters strong social and academic connections among students.
Approximately 336 students were involved in CWU STEP during the funded period. In any given year, student cohorts consisted of ≥80% underrepresented students. Success in this particular area is attributed to targeted recruiting efforts and collaboration with CWU Admissions and the College Assistance Migrants Program (CAMP).

Aspects of the program that were institutionalized by CWU include the freshmen/transfer curricula, STEP coordinator position, College of the Sciences recruiter, and research/teaching opportunities. The Living Learning Community and partial tuition waivers continue. A new Associate Dean position in the College of the Sciences is an outgrowth of CWU STEP.

Productive on-going collaborations between STEP and a number of CWU units are also an outcome of the funding. These include CAMP, Admissions, Student Support Services, GEAR UP, Science Honors Research Program, Financial Aid, Housing & New Student Services, Academic Advising, the CWU Library, and a number of STEM/non-STEM academic departments.

The CWU STEP assessment effort involved data collection by the CWU Office of Institutional Research that compared STEP students with a comparative cohort composed of students who, in their applications, expressed interest in STEM majors but did not chose to be involved in STEP. STEP students also responded to questionnaires. These data were compiled and analyzed by STEP faculty/staff and a statistics consulting firm. Selected outcomes include:

1. Compared to the comparative cohort, STEP students had higher average cumulative GPA (2.9±0.7, 2.8±0.8, p = 0.003) and a higher graduation rate (for students who entered 2009 or before, 53.7 vs. 48.3%).

2. Retention in STEP was high. Compared to the comparative cohort, STEP students were retained at a higher rate (freshman to sophomore year, 86.2 vs. 76.8, p = < 0.001). The rate of retention for Hispanic students was slightly higher than non-Hispanic STEP students (95%, 85.2% p = 0.02).

3. Important changes to minority graduation rates occurred during the funded years of STEP. From 2007 to 2013, the total number of STEM degrees awarded to minorities doubled, the percent of STEM degrees awarded to minorities almost doubled, and the percent of minorities earning STEM degrees almost doubled.

4. Within the STEP population, there is a positive correlation between average cumulative GPA and number of (academic) quarters in STEP. More quarters in STEP are associated with a higher graduation rate. More quarters in STEP are also associated with a higher retention rate (freshmen to sophomore), earlier graduation, and earlier declaration of major.