

## **0653292 Science Talent Expansion Program in Urban Polynesia (STEP-UP)**

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KCC is in year 3 of a 5-year National Science Foundation STEP grant. The goals of KCC STEP-UP are to:

1. Increase the number of students in the College's STEM pipeline from 185 to 485 (currently 245 enrolled, **82% completed**)
2. Increase the number of Associate in Science in Natural Science (ASNS) degree completers from zero to 290 (currently 125 enrolled, **43% completed**)
3. Increase the number of students matriculating to two collaborating four-year institutions in Hawaii from 90 to 280 (currently 38 students, **46% completed**)
4. Institutionalize STEP initiatives and to provide ongoing support for STEM students. STEP initiatives include a Summer Bridge program (20 students enrolled each summer); Undergraduate Research Experience (URE) for STEP students (59), Peer Mentoring and Student Tutoring (10 student hires), and Peer-Led-Unit-Study or PLUS (11 students hired) to support STEM gateway courses in life and physical science.

A three-week long summer bridge workshop is focused on enhancing math skills needed for STEM majors and is a crucial STEP initiative for pre-college recruitment. The program provides each student with the hardware and software needed to assemble a personal computer that they can then use provided that they attend KCC. Students are also supplied with advanced applications software such as Computer-Aided Design (CAD) to assist in their education. In the summer 2009, 20 STEP bridge students from seven local feeder high schools participated in a new sustainability project to form Biodiesel from used cooking oil provided by the KCC Culinary Arts Program.

The STEP Year 2 Undergraduate Research Experience (URE) projects were extremely successful and have proven to be a very important “best-practice” activity for both student recruitment and retention. The KCC STEM URE teams placed 9<sup>th</sup> out of 28 at the MATE 09 international underwater remotely operated vehicle competition and 5<sup>th</sup> out of 29 at the international space-related CANSAT 09 competition. In year 3 we have extended our URE model to include additional research projects such as solar tracking (solar energy), pupillometry (sleep research), Biodiesel (sustainability), and ecology (hermit crabs).

Overall, 57% of our STEP grant’s goals have been achieved by Year 3. We are confident that by the end of Year 5, we will have accomplished successfully all the benchmarks originally established by the STEP grant goals.