CSU STEM Collaboratives Project

PROMOTING SUCCESS FOR UNDER-REPRESENTED TRANSFER STUDENTS AT CSU NORTHRIDGE

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Abstract

In 2011, the College of Engineering and Computer Science (CECS) at California State University, Northridge (CSUN) received a five-year, $5.5 million dollar HSI-STEM grant from the Department of Education to address the challenges faced by transfer students from under-represented groups. Glendale Community College (GCC) and College of the Canyons (COC), two local community colleges, are partners in the grant. The main goals of the grant are to recruit promising students from community colleges, and then provide them with financial and academic support to ensure their success. There are also opportunities to work on summer research projects under the guidance of their faculty mentors. Many of the students that entered the program have now graduated.

Evaluation of program effectiveness is measured by a variety of methods, including quantitative measures of academic progress versus a control group of non-participants, collection and interpretation of monthly student online journals, and analysis of detailed interviews with selected students. Quantitative results show that participants in the program have higher transfer and completion rates than students in the control group,

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Introduction

The three objectives of the AIMS^2 program (Attract, Inspire, Mentor, and Support Students), are:

- To increase the number of Hispanic and low-income students who transfer from the community college partner institutions to pursue STEM degrees at our institution
- To assist these students to successfully graduate with a STEM degree in a timely manner
- To streamline the transfer process between the community college partners to our institution by expanding existing articulation agreements

Students in the program at CSUN are provided with faculty and student mentors, tutors, and a stipend. Each annual cohort at CSUN is approximately 30 students, selected through an application process. Regular meetings are held between the students and their mentors to monitor academic progress and establish a sense of community. Opportunities for working on research projects with the faculty mentors are provided, especially during summer.

A similar structure exists at each of the community college partners. The nominal size of the cohorts at the community colleges is 15 students. Field trips and attendance at conferences are emphasized to enhance the students' professional growth. Community college participants in the program are guaranteed acceptance into the program at CSUN.

Monthly meetings among CSUN and CC staff and faculty ensure good communication among the partners and assist with the program assessment process.

Assessment Methods and Results

Framework, Procedures, and Methods

Project objectives guided the evaluation as an embedded mixed methods case study design, with the goal of assessing performance measures with baseline and project performance data at each campus.

Data Sources: Students, faculty, staff, and institutional data

Data Collection Procedures: Journals, surveys, interviews

Interview Procedures: 60 minute, semi-structured personal interviews with student consent; audio recordings were transcribed and comments were parsed into themes: topics covered include student interests, level of participation and challenges related to research with faculty, and general interaction with student peers and faculty mentors

Analysis Procedures: Frequency and thematic data analysis

Quantitative Results (2013-2014)

Transfer Achievement from Community College Partners

Baseline number of transfer students from GCC/COC who entered into a CECS major was 21 in 2010-2011

Defined program target for annual number of transfers is 36

64 new transfer students from GCC/COC entered into a CECS major in 2013-2014 (305% of the baseline number and 178 % of the project target)

Program Completion Rates for Students in the Program

Baseline completion rate for Hispanic and low-income students from 2010-2011 was 26%

Defined program target is to increase the completion rate to 30%

Program completion rate was 39.2% for 2013-2014

Qualitative Results (2013-2014)

Seven qualitative measures were used to assess quality of peer-peer interaction, student-faculty interaction, and research participation

All seven measures indicated improvement over previous years

Interview Excerpts (2013-2014)

"If I wasn't in AIMS^2, I wouldn't have done the research project"

"Prof X gave us advice and told us what we needed to do and asked how we were doing"

"I always sought guidance from Prof Y. Prof Y was kind of like the person to go to if I had any issues or any problems. I'm not able to take this class, what can I do? Prof Y would offer different suggestions, different paths I could take.

Conclusions

Project Strengths

Student contact with faculty mentors in cohort group meetings, research activities, and informal meetings

Peer interaction in the form of peer mentoring and tutoring

Measured improvements in transfer and program completion rates

Areas for Improvement

Peer mentoring across campuses, i.e. CSUN student contact with GCC/COC students, needs more attention and focus

Plans for students at GCC/COC to take on-line courses at CSUN were never implemented

Special Recognitions

The AIMS^2 program received an Honorable Mention Award as an Example for *Excelencia* in the Baccalaureate Category (http://www.edexcelencia.org/2014)

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Principal Investigator

The P.I. of the project is Dr. S.K. Ramesh, Dean of the College of Engineering and Computer Science at California State University, Northridge

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