Overall Project

The Center for Achievement, Retention, and Student Success (CARSS) is a comprehensive program that addresses retention of freshmen and transfer students in STEM fields at the University at Albany-State University of New York (UAlbany).

We utilize a holistic model reliant on the creation of learning communities through group study and support. We have met the original program goals of: sustainability, institutionalization, provision of peer tutoring and peer/staff mentoring, ongoing project evaluation, and dissemination.

The program continues to grow as evidenced by stakeholder driven increases in the number of tutoring sessions from 109 in year one to >600 per semester. On average, the program serves >600 students per semester. To accommodate UAlbany STEM student population needs, the CARSS program has made >135 appointments of STEM tutors who offer tutoring assistance to STEM tutees. As a result, pass rates in key gateway courses have steadily improved. Additionally, it is clear that both the small group sessions that foster the formation of semester-long learning communities, as well as the “pre-exam review sessions”, positively impact grades and retention outcomes.

Goals
- Increasing the 4-year graduation rates of a cohort of freshman with declared STEM majors
- Increasing the 2-3 year graduation rates of transfer students entering into UAlbany in their junior year
- Institutionalizing the Center for Achievement, Retention and Student Success (CARSS)
- Increasing retention of historically underrepresented students in STEM majors
- Creating and supporting learning communities

Strategies
- Provision of free tutoring in STEM gateway courses
- Provision of review/recitation sessions
- Creation of an on-campus home
- Establishment of a STEM Tutors training course
- Aggressive dissemination: website (www.albany.edu/carss); brochure; faculty in-class support; videos; participation in student orientations
- Establishment of a bona fide, furnished, dedicated center space
- Securing financial commitment from the University Administration to permanently support tutor and coordinator salaries

Features of CARSS project sustainability include the following:
- It has a dedicated permanent fully furnished space from which to operate
- UAlbany has committed to continuing the CARSS program coordinator staff line
- UAlbany has committed $150,000.00 annually in support of the CARSS program at the termination of the grant funding period

Implementation: Determination of Dose-response Effects of CARSS Participation on Retention

Our earlier studies to identify students who were “at-risk” revealed characteristics that enabled us to identify such students early in their academic careers and target them for participation in CARSS programs. In this follow up work, we sought to verify and quantify the positive impact of CARSS participation on performance in key gateway courses. Our Specific Aims were to:

1. Determine the impact of CARSS participation on pass rates in the two-semester general chemistry and organic chemistry course sequences
2. Quantify the probability of positive outcomes (passing grades) as a function of frequency of participation in CARSS programs

Historically, SAT scores have been used as a reference point when evaluating success at the college level. We have defined success as a grade of C- or better because: (i) this is the minimum grade required as a prerequisite for advancement in the major for several gateway courses; (ii) it is the minimum grade accepted for transfer course credit in any course; and (iii) as the foundation courses collectively comprise approximately one-third of the credits in the science majors, grades of less than C- are often a predictor of lack of success in upper level courses and, ultimately, in unsuccessful completion of the major.

Our data indicates that student participation in CARSS services clearly increases the probability of earning a higher final grade in General Chemistry I and II, two crucial courses for all science majors and ones which prove to be stumbling blocks for many students. This effect is positively linked with the number of times a student participates in CARSS services (study group and review sessions) within a given semester. Moreover, it appears that attendance at even one CARSS review session can affect the likelihood that a student will earn a higher final grade in a course for which CARSS provides services.

Opportunities
- Develop a program that caters to the needs of transfer and non-traditional students
- Develop a tutor training course text
- Expand the number of tutoring and review sessions to service greater numbers of students