

## **CNS - BROADENING PARTICIPATION IN COMPUTING NSF BPC-DP- 09-534**

### **Partners in Computing - Demonstration Project**

**Partners in Computing** (PIC) is designed to **focus on the community college** efforts to 1) To partner with business/industry and our local high schools to develop the pipeline for future CS talent 2) to recruit more women, disabled and under-represented minority students into computer science 3) create a seamless transition from high school to community college to four year university 4) support students who choose computer science so that they remain in the field through graduation with a BS Degree 5) to bridge the variety of support services that currently exist to support academic study in computing for women and under-represented populations and 6) to expand and/or tailor existing services to the specific needs of women and underrepresented students. Through PIC, the colleges will collaborate with industry partners to get the message to middle and high school students, parents, and guidance counselors; while providing necessary resources to students to positively affect their persistence to degrees in computing. This project focuses on students **sooner**, and creates an environment that addresses college **affordability, engagement and success**.

**Intellectual merit** is demonstrated through clear and concise goals that will result in an increase in the availability of computer scientists with BS degrees to Sacramento employers; and develop alignment from middle school to college in those programs that support the academic interests and pursuits of underrepresented and female students. The *outcomes* of our project will focus on 1) Recruitment 2) Integration; 3) Outreach; 4) Engagement; and 5) Success, to achieve the following increases: 1) females in computing; 2) minorities in computing; 3) number of internships in computing jobs, while 4) decreasing regional computer-related vacancies.

Research in the areas of computer science, STEM, retention, and minority enrollment contribute to our *rationale*. The research identifies a number of factors that impact student success, including financial reasons, personal issues, inability to connect to a college campus, not being involved/engaged in activities, and lack of academic preparation or family support. PIC will link college faculty and students with middle and high school students and teachers to spread the word that the market is excellent for technology graduates. Our approach differs from others in that colleges tend to utilize one or more of these key elements to address low minority student success, in a fragmented approach in which students are free to randomly and inconsistently use services. By taking an integrated approach to each of these factors the college responds to critical workforce needs in our region. Strong partnerships with business, K-12 school districts, community college and universities provide the foundation for a promising start to reversing the trend of low computer science enrollments.

A comprehensive **evaluation** plan has been designed through the Sacramento City Unified School District Research Office using Dr Rebecka Hagerty, Sacramento City College Research Office and will be strengthened through Dr Nina Amenta, an NSF-experienced external evaluator, identified through the University of California, Davis. Success will be continually monitored through a standing advisory committee which will serve as the advisory body for this project and will assist with planning, evaluation of project needs, and provide professional advice to the PI and program administrators. Project results will be **disseminated** through varied delivery mechanisms including conference presentations, regional workshops, train the trainer sessions, and a website that will be developed to serve as an aid in the replication of PIC across other educational entities. In this way, the college plans to enhance the state's ability to develop a competitive workforce by sharing best practices.

**Broader impact** is demonstrated through activities that are commensurate with the research agenda. These include: training/mentoring students to be future computing professionals; seminars at high schools; workshops for regional partners; new pathways for underrepresented middle and high school students pursuing computing study/employment; professional development opportunities to facilitate student engagement and success; forging links with other STEM disciplines; creating websites to share outputs of project; collaborating with high school teachers to identify students and serve as mentors; consulting with industrial and government colleagues; establishing collaborations with scientists from regional transfer institutions; hosting students, teachers and other professionals, particularly those from under-served demographic groups; consulting with the San Pablo California Center for Science Excellence and the California Community College Research and Planning Group on project development and dissemination activities. SCC will be positioned to share with the larger community, a profile of interventions that positively affect the retention and success of those in the computing discipline. This project is meant to advance individuals and society while enhancing the sciences by promoting a diversified, expanded work force. The intent is to create an exemplary model for other regions and states to consider.