NSF Support At A Glance

NSF CC*DNI – Campus Design #1541352 PI-Jorge Crichigno $350,000;

The CC*DNI project provided hands-on training opportunities for four students, Joseph Fresquez and Chase Harrison deployed and configured the DTNs and associated software (Globus). They also participated in the testing of equipment and engaging faculty in the use of Globus rather than SCP. Their outstanding work led them to apply for positions at Los Alamos National Laboratories (LANL), where they currently are full-time engineers. Chase Harrison was highlighted by the local newspaper "Los Alamos Daily Post."

NSF PEARL - Pathways for Engineering: Access to Resources for Learning #1259993 PI-Ivan Lopez $599,841;

The PEARL project provided 47 one semester scholarships in the amounts of $2,500 and $5,000 that were awarded over four semesters; three students graduated in the 2 years of the award; 1 scholarship recipient left to attend a larger institution. Project Outcomes: Data for three semesters indicate that scholarships have helped the engineering programs with retention. Of the 22 recipients that received scholarships in the first three semesters, only one student left the program. Three scholarship recipients have graduated and begun working in their perspective field. Also, students began taking an average of 1.5 credit hours more per semester after receiving scholarships; and 32% of scholarship recipients have engaged in research experiences and workforce-related internships. In all cases, enrollment and retention were greatly increased.

NSF BEST - Biology and Environmental Science Training #1562008 PI-Ulises Ricoy $999,984;

The NSF BEST project is a culmination of 7 years at NNMC. The application of low-cost approaches in STEM in teaching/research has resulted in students (that otherwise would not engage in Science) participating in the Science culture (pedagogy, critical thinking, active learning) process. For example, some of our findings report that 17 students from NNMC are currently (summer 2018) engaged in summer undergraduate research experiences with our collaborators. These interactions, which began by networking with scientists of color (during the seminar series) often will culminate in the acceptance to graduate school for many of our students. This impact is enormous given our poverty-struck community. By word of mouth, students mention to family, and we have now people knocking on our door inquiring if they can also apply for the program, currently at full capacity.

We are also providing new knowledge as to how by connecting with minority faculty, minority PI, minority speakers throughout the year, are a sufficient catalyst in combination with a suite of mentoring activities to transform lives one at a time with the ultimate effect of changing their identity to "science people."

NSF EDUCERE - Ensuring Diversity and Undergraduate Completion: Enrichment and Retention #1612373 PI-Ashis Nandy $299,998;

The EDUCERE project has impacted several students through the redesign and implementation of the Physics for Engineers and Introductory Math for Engineering Applications classes, many of them are showing persistence in their Engineering Program increasing retention and degree progress. In the first two years of the project, five different Engineering students mentored/ tutored in these classes and worked side by side with the faculty members in training freshmen students. Four different students (one student received an internship position in both years) worked on internships in technical areas. A total of nine students (five from Engineering and four from Social Science) worked in research projects mentored by faculty members. Noteworthy of a very small college, and for only approximately 100 students in the overall breadth of Engineering Programs, these numbers are very significant.

As reported in year one annual report, this project, along with several other grant projects in Engineering is expected to create a positive impact in the rural, small community in Espanola (the city where NNMC is located) and in the region of Northern New Mexico. New Mexico is one of the top and most poverty-stricken states in the US with the public schools performing well below the acceptable threshold level. The public schools in the city of Espanola are among the worst performing of these schools. Even worse, there is an epidemic of drug addiction among the youth. In summary, there is very little hope or opportunities for the
youth in the region. The project is providing an enriching quality education catered for the underprepared students along with, career opportunities to many of these underrepresented youth population. For aspiring freshmen students, in most cases, there is no role model at home as they are the first generation college students. Mentors/tutors from both Engineering and Social Science programs are serving as their role models apart from instilling the technical knowledge. We hope to increase enrollment and retention and eventually graduate more students with a quality education, which will lead to high paying jobs and ultimately better standard of living for the young population in the region.

**NSF INCLUDES - Northern New Mexico STEM Mentor Collective #1649296 PI-Steve Cox $299,776;**

The principal disciplinary field of the INCLUDES project is STEM education for underserved indigenous populations. Our impact to date is largely proof of concept. We have taken struggling, fragile, under-developed (both academically and socially-emotionally) local STEM college students and placed them shoulder to shoulder in multi-week classroom mentoring environments with struggling K12 students. Our mentors report joy in working with youth and increased confidence in being elevated to content expert before their peers. Our K12 students and their teachers report that sustained interactions with caring college students have positively impacted how they see their work and future. The K12 administrators have acted on the latter and have actively sought to increase our presence in their schools.