Research Opportunities for Science Educators (ROSE)

Pilot Program Report

Part B. Assessment

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Executive Summary

The ROSE (Research Opportunities for Science Educators) pilot program at UNM in the summer of 2021 demonstrated the need for and viability of the underlying concept: participating in university research projects is both attractive and beneficial to high school science teachers. In spite of the last-minute organization and recruiting for the project, nearly forty teachers applied for only eight Scholar positions, and all of the Scholars found the experience valuable and expressed interest in returning for another summer. The Scholars and their PI mentors all contributed ideas for improving the program in subsequent years.

Scholars and mentors found the ROSE program "overwhelmingly valuable, worthwhile, and well-organized" (Program assessor A. Stewart). While professional development opportunities typically focus on pedagogy, the research experience provided a unique opportunity for development in subject matter mastery and helped to renew confidence and enthusiasm: One Scholar noted that "*I really like to keep developing my teaching and… reinvigorate the love for that science as well… it's a nice thing to just get that love back, and remember why… I love the chemistry…".* Scholars acquired specific skills and tools to bring back to their classes in the Fall—notably, the use of the UCSF Chimera molecular modelling software and experience with Python—but also new ways of explaining and motivating students: *"…some of the ways that the professor teaches with motion was just really great. And it was really effective and I had never really thought of doing that. And when I did that in class—I actually did something kind of like this in class—and it really was an effective way of doing it and explaining something."* The pilot program also familiarized the Scholars with the Albuquerque campus and facilities and made them more inclined to encourage students to attend UNM.

Based on the suggestions of the participants, including PI mentors and Scholars, the organizers hope to expand and improve the Program in coming years. Expansion to a larger cohort of Scholars would occur in stages, beginning with the current focus on chemistry teachers but including PI mentors from other departments who use chemistry to address research problems in related areas such as engineering, physics, biology, and the biomedical sciences. The recruiting process should begin with publicity in January, teacher applications due in March and completion of the selection process in April. The Program should consider a longer research period of 5-6 weeks, rather than the 4 weeks of the pilot program. More informal cohort-building activities could include housing out-of-town Scholars on the UNM campus and scheduled weekend social activities. More formal activities could include scheduled mentor-Scholar communications before and after the research period, organized presentations and tours on campus, and panels/discussions on science teaching and 'taking it back to the classroom'.