b. Project Summary

Among the states, Louisiana suffers some of the most serious shortages of qualified math and science teachers. Louisiana’s large high-poverty districts have the greatest proportion of teachers on waivers among all the U.S. demographic groups considered in a recent U.S. Dept. of Education document; see U.S. Dept. of Education 2002, pp. 60-1. In response to these problems LSU is piloting a new teacher certification program that relocates the preparation of secondary school teachers from the College of Education to the arts and sciences departments. The centerpiece of the new program is a series of four professional practice seminars comprised of disciplinary and education courses scheduled in adjacent time slots and co-taught by arts and sciences and education faculty. This innovative program has been approved by state agencies and by the various university curriculum committees, and is set to begin receiving its first students in fall 2003. Within a four year program, students in STEM subject areas will be able to obtain a major in their mathematics or science discipline while meeting all state requirements for secondary school teacher certification. Alternatively, students completing their undergraduate STEM major without choosing the teacher education concentration will have the option of enrolling in our highly rated Holmes style graduate level teacher certification program.

Our objective in instituting this new program is to nearly triple our production of STEM secondary school teachers from about 30 per year to about 80 per year. Toward this end we recently secured a STEMTP grant to provide small ($500/yr) stipends for up to 260 teacher candidates recruited into the program over the 4 years of the grant. But even with this funding, we see it as a major challenge to reach our goal of attracting 10% of STEM undergraduates to the teacher certification concentrations. Noyce scholarships would raise the profile of these concentrations, and provide incentives for the most talented STEM undergraduates to opt for teacher certification. As well, the Noyce funding would help to bolster our Holmes program enrolment by attracting STEM graduates and mid-career STEM professionals interested in graduate level teacher preparation.

In developing the new undergraduate teacher education program at LSU, STEM departments of Biological Sciences, Chemistry, Mathematics, and Physics each has created 6 credit hours of course work in the discipline designed to be especially relevant to future secondary school teachers, and to be taught in conjunction with College of Education course work. This level of collaboration in addressing the needs of teachers is not a new development at LSU. It builds on many prior efforts involving mathematics and science faculty with their Education colleagues in providing specialized coursework for pre-service teachers and professional development opportunities for in-service teachers. Robert Noyce scholarship support will help us realize the full benefit of our joint efforts by attracting a core of the most talented STEM students to participate in our new teacher education concentrations.

In terms of intellectual merit, this project represents a powerful re-conceptualization of STEM teacher preparation that takes into account the most up-to-date research findings on what can be done to cultivate a competent, stable teaching force. In terms of broader impact, this project represents the most reasonable and efficient application of the university's capacities to positively affect secondary STEM teaching in Louisiana. Embraced by the leadership and faculty of all three colleges and welcomed by state education authorities, the new program is expected to become a model for secondary teacher programs at other state institutions.