

Going Forward: A Look to the Future

As a part of the preliminary effort to develop the FY 2001 budget request to Congress, the NSF Assistant Director for EHR asked the PPD Senior Program Director to prepare plans for expanding PPD in FY 2001. The result was a multi-year PPD Phase II plan to promote increased participation of students with disabilities in STEM education and career opportunities. A series of programmatic activities that could not be initiated within the existing budget constraints was drafted. The proposed activities include:

- Support of renewals for exemplary demonstration and enrichment projects;
- Outreach to community colleges to promote participation of students with disabilities in STEM⁶;
- Research on why a high number of STEM majors with disabilities change majors during their undergraduate years;
- Initiate efforts in retaining interest in STEM by students with disabilities during their undergraduate years by providing faculty and counselors information on improving participation by diverse populations;
- Analysis of science and mathematics teacher-preparation curricula and certification programs to identify means by which to prepare future teachers for diverse populations of students; and
- Research on ensuring accessibility of distance education-based STEM instruction.

The various and diverse successes of PPD projects are at once the program's greatest triumphs and its greatest challenges for the future. Increases in both the number and quality of proposals being submitted is unquestionably the most significant consideration for the program's administrators, particularly if near-level funding is continued. The increased numbers of quality proposals submitted to PPD obviously necessitates increased scrutiny of the work being proposed in order to ensure that it is not duplicative of past efforts.

Looking to the future, PPD will continue to focus on a Regional Alliance strategy. Projects such as RASEM, which spans numerous communities in the U.S. Southwest (#9550064 and #9800298) have increased access and representation of persons with disabilities at the middle-school, high-school, and collegiate levels, reached out to women and minorities, and garnered state and corporate funding support toward long-term institutionalization.

⁶ This was achieved, in part, with an assistive-capacity building initiative in PPD targeting community colleges in FY 2000. Of 9 applicants, 5 awards were granted—to Yavapai College (AZ), County College of Morris (NJ), Landmark College (VT), Springfield Technical Community College (MA), and to a network of community colleges led by Western Michigan University (MI).

As suggested above, the projects supported by PPD in the past decade reflect not only the prevailing education policy and climate of the era, but also some outstanding exemplars of “what works” in modern pedagogical practice for all students, irrespective of ability. Increasingly, providing equitable access for students with disabilities is seen not as an additional “obligation” but as a measure for making STEM education more accessible, engaging, and inspiring for everyone. The relatively recent consideration of diversified presentation and consideration of alternate learning strategies have necessarily been addressed by students with disabilities, their teachers, families, counselors, and mentors all long. Given this, the practices and lessons learned from PPD awardees become excellent models for defining what works, what doesn’t, and where convention can be improved. As one example, we mention the ongoing research on making the Internet accessible to a broader audience and how that audience prefers to interact with web-based content. The number of people needing assistive tools to see, hear, touch, interact with, and move within their world is tomorrow’s pool of potential end-users for the research and education innovators working with persons with disabilities today.

No one intentionally seeks to *exclude* students with disabilities from the full benefit of the educational experience, but too many systems still fail to realize the proven mechanisms for *including* them. With the majority of states now enacting or considering legislation requiring all educational materials to be fully accessible to students with disabilities, we can expect an increase in the amount and diversity of educational products available to address these guidelines. The human intellect and compassion required for utilizing these resources in the most effective manner has never been more obvious or more crucial. Enhanced communication among awardees and between awardees and the broader academic and public communities is also encouraged. In the interest of increased self-sufficiency, future proposals should be guided toward investigating and possibly allying with existing resources and institutions to maximize the outcomes of the existing knowledge base.

While the impact of PPD has been significant, its mandate is far from being fulfilled. As in many (indeed most) areas of STEM education, the particular needs of women, American Indian/Alaskan Native/Pacific Islanders, and rural- and urban-based student populations are not being addressed relative to the representation of these groups in the general student population. We have previously described these individuals as the “minorities within the minority” of students with disabilities, strongly conjecturing that the successful efforts of the research and education communities need to be redoubled and better adapted in these areas.

The preparation of this report has provided the opportunity to take a much-needed overview of PPD's accomplishments during its first decade. From such a perspective, the impact of the program is clear: The diversity and utility of products, training materials, education research and other mechanisms for making STEM education more inclusive of students with disabilities is readily apparent. Equally apparent is that, with the availability of more funds according to the above recommendations, so much more could be done in the future.