

# Broadening Participation in Computing with the K-Gray Engineering Pathway Digital Library

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## ABSTRACT

This demonstration presents a digital library for educators at all levels to easily identify, select, and use educational resources that have been shown through research to be effective for increasing the participation of women and under-represented minorities in information technology. The library consists of practices from the Broadening Participation in Computing (BPC) program in NSF CISE and elsewhere that have been researched or evaluated for their promise or effectiveness to recruit, retain, or advance under-represented groups in IT fields of study or research careers. We do not develop the practices, but instead describe them and make them easy for users to find and evaluate in a central location.

## Categories and Subject Descriptors

H.3.7 [Information Storage and Retrieval]: Digital Libraries – collection, dissemination, user issues.

## General Terms

Management, Design, Experimentation, Human Factors.

## Keywords

Broadening Participation, K-Gray, Under-represented Groups.

## 1. INTRODUCTION

The digital library consists of resources for expanding participation of students in information technology and will also serve as a centralized vehicle for dissemination of practices by a wide range of researchers and practitioners. The K-Gray Engineering Pathway website ([www.engineeringpathway.com](http://www.engineeringpathway.com)) provides the necessary digital library services to develop an effective tool to host users and resource providers, including metadata harvesting, federated search, interoperability, scalability, usability, and personalization. There is no shortage of social science and educational research on increasing the participation of members of under-represented groups in IT education. Yet it is those who are “in the trenches” – computing faculty, high school teachers, informal educators, etc. – who ultimately must translate this research into concrete educational practices and programs within an educational setting. IT

educators who hope to contribute to diversity goals must either become familiar with research and methods in the social sciences and education or engage the expertise of an expert. Educational researchers and social scientists also live within the same reward system as scientists and cannot be a resource to every IT educator on campus. K-12 teachers are punished if their students fare poorly on standardized tests, forcing them to focus on literacy and mathematics, and postponing the inculcation of science. While the activities of increasing participation are generally praised in discourse, there is often little space for them in promotion decisions. For the majority of IT educators who are rewarded primarily for their research, the ability to keep up with the field, or students’ test scores, a new model is needed for encouraging replicable, research-based practices.



Figure 1. Engineering Pathway Homepage.

## 2. ACKNOWLEDGMENTS

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## REFERENCES

- [1] Agogino, A.M., "Engineering Pathway Education Digital Library", ABET Workshop, ASEE Meeting, June 24, 2007.