Using CITIDEL as a Portal for IT Education:
a Panel Discussion

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Overview

The National Science Foundation has recently funded a variety of projects through the National Science, Mathematics, Engineering, and Technology (SMET) Digital Library initiative, coined NSDL. One such project is the Computing and Information Technology Interactive Digital Educational Library project, also known as CITIDEL, which is part of NSDL's Collection Track activities. CITIDEL is a consortium of five universities that includes Virginia Tech (the lead institution), Hofstra University, Penn State University, The College of New Jersey, and Villanova University.

CITIDEL will establish, operate, and maintain part of the digital library that includes information systems, computer science, information science, information technology, software engineering, computer engineering, and other computing-related fields. Working with professional associations such as ACM, IEEE Computer Society, the Association for Information Technology Professionals, and with publishers and industry, CITIDEL will engage in a broad range of community development and content development activities. The principal investigators of the project draw upon an extensive set of experiences related to the goals of the project. These include involvement in the computing education community, expertise for gathering a broad range of resources, and technical expertise in the development and support of digital libraries. Existing resources include digital libraries of ACM and IEEE/CS and collections and lists of interesting web pages that individuals have gathered and maintained. The NSF and other funding organizations have supported the creation of resources that can be of great value to teachers and students.

CITIDEL will manage a front-end portal to all educational activities related to computing and information technology. It will harvest metadata from applicable repositories and provide an integrated access and linking process to related collections. It will encourage and actively support content developers to make new resources available to others. It will assist users in learning not only about the resources accessible through CITIDEL, but also guide them to incorporate these resources in their own instructional environments through interactive and engaging educational activities. Many organizations have already agreed to support this project, which will involve diverse groups. The digital library services and content from the CITIDEL project will benefit the educational and training efforts of those in the fields of information technology.

The need for a computing digital portal is clear. In today's economy, no one can dispute the need for graduates and faculty and there is no indication that the problem will resolve in the near future. In 1998, the Bureau of Labor Statistics showed a need of 617,000 computer systems analysts, 429,000 computer support specialists, 299,000 computer engineers, 87,000 database administrators, and

97,000 computer scientists or related experts. By the year 2008, the Bureau of Labor Statistics predicts that the numbers of professionals in each of these areas will grow by as much as 120% and that the demand for new employees far outpaces the supply in today's technology workforce by an average of 150,000 jobs per year. The need also affects minority populations. The percentage of these groups in computing programs is very much less than the composition percentage of these groups in the U.S. population at large.

CITIDEL will also devote specific attention to serving underrepresented populations in computing, with particular initial emphasis on the needs of the Hispanic community. A more pressing need is the difficulty in developing and disseminating quality courseware. For decades teachers of computing and information technology have developed, published, and used courseware for their courses. Some of this material incorporates innovative and proven methods for improving learning experiences. Granting organizations may have even supported much of the work involved in that development. Unfortunately, these resources are scattered and are not widely used as they might be. Another difficulty is simple communication. CITIDEL addresses two aspects of this problem. First, it makes available high-quality (e.g., peer-reviewed) interactive courseware to educators and students from a single, well-publicized search site. Second, it provides a mechanism for the preservation of educational prototypes through its community development aspect by encouraging further construction of effective learning modules. There is also a need to inhibit the fragmentation of supporting professional associations.

Many professional organizations cover the diverse areas of computing and information technology. CITIDEL will attempt to arrange cooperative agreements with professional societies to give portal access to these materials as candidate resources through specialized search mechanisms. CITIDEL will also attempt to restrain the fragmentation of the supporting publishing community. While the educational community may consider the publishing community the backbone of its activities, commercial publishers are business competitors and develop materials independently of one another. In computing, no avenue currently exists that unites a common purpose and approach in the publishing of educational materials. CITIDEL will provide a single location where searches conducted by educators and students can link them to publishers' web sites as well as to non-commercial sites. This will allow publishers to reach more people who are searching for products they produce, further stimulating the production of their valuable resources.

This presentation will present an overview of CITIDEL, focus on the progress of the project, and provide strategies on how information technology experts can contribute and benefit from the project. Two of the principal investigators will present the project and facilitate discussion. They will address different perspectives and describe the breadth and depth of the project. They will also provide guidance on how people, institutions, and organization can benefit from the associating with the project. Audience involvement is a necessary component to this event and the panelists strongly encourage such interaction.