

## **ITSA Awards – Nomination Form**

### **Innovation**

The Consortium for ITS Training and Education (CITE) is a unique organization of universities, associations, and private sector members focused on providing comprehensive ITS training and education in a manner that is convenient for both existing practitioners and graduate students.

The challenge today is to provide an interdisciplinary curriculum for engineering students throughout the world that will prepare them for an ITS career. Long distance, web based education captures such diverse elements as civil engineering, computer science, systems engineering in a unique way, accessible to students at a broad range of university settings.

CITE has pioneered the use of web-based distance learning for ITS courses, eliminating the cost and inconvenience of attending a class away from the office. In addition to being accessible 24 hours a day, 365 days a year over the internet, CITE's courses are "interactive": They include a stimulating mix of participatory activities such as simulations, self study quizzes, projects, exercises and drag and drop pages. These activities are used to support and reinforce the text-based information.

CITE has developed more than a dozen courses – see below. For example, CITE's "Fundamentals of ITS and Traffic Management," provides one semester of graduate level education related to the broad array of technologies associated with ITS. A second, one semester course is planned that complements the material of the first course and presents the many non-technical issues that are receiving increased emphasis within the ITS community.

CITE offers all of its courses to existing practitioners for Continuing Education Units. Graduate level for-credit courses are offered through CITE university partners.

Courses currently offered by CITE include:

- Applied Systems Engineering for Advanced Transportation Projects
- Corridor Management
- Dynamic Route Guidance and In-vehicle Systems
- Fundamentals of ITS and Traffic Management
- Incident and Emergency Management
- Interoperability: ITS System Architecture and Standards
- Introduction to Intelligent Transportation Systems (ITS)
- Introduction to Information Technology (IT)
- Introduction to Telecommunications Technology
- Traffic Flow Theory as Applied to ITS
- Traffic Signal Systems Fundamentals
- Transportation Management
- The Tools of ATMS

### **Maturity of Deployment or Execution**

CITE began offering its courses in late June 2000. CITE is a mature program offering training and education to students throughout the United States and throughout the world. In one year and

a half, more than 450 students completed CITE courses. This is more students than are enrolled in the entire engineering departments of many major universities. Thus, CITE is having a significant impact on the technical education of the US workforce.

Initiated with the support of the I-95 Corridor Coalition and the US Department of Transportation Federal Highway Administration, CITE is now on its way to become self-sustaining. The initial funding was used to develop CITE's current courses. Now, the main task is to generate enough revenues from existing courses to develop additional courses while maintaining the current ones in existence.

In Fall 2002, CITE will be adding thirteen additional courses to its curriculum, this includes a second full semester course called "ITS Applications and Management."

### **Quantitative Performance Measures**

Approximately 460 students completed CITE courses in the first year and a half. Let's look at the breakdown of the numbers.

For the pilot offering of the Fundamentals course, CITE had 50 students who participated and completely finished the course. Participants included university students receiving graduate level credit and current ITS practitioners. A total of 89% of the students who completed the course indicated they would take another distance learning course.

Since July 2000, when CITE began being offering its courses for a fee, CITE has registered 110 students with many in the process of requesting their organization's permission to take another. Of those who have completed their courses, 100% of the students indicated they would take another distance learning course.

As of December 2001, CITE included 70 university partners worldwide, each with free access to all the courses developed by CITE and free CITE membership. More than half of these universities are taking advantage of CITE's courses. In three college semesters, approximately 300 graduate students participated in the Fundamentals course in some fashion at their university and were exposed to many different aspects of ITS.

### **Qualitative Performance Measures**

To ensure the pedagogical quality of the courses, CITE requests that students complete an on-line survey after taking their final exam. This gives them an opportunity to comment on all the aspects of the course they just took, and provides CITE with valuable feedback on the various components of the course, and their effectiveness. These surveys are completed and submitted anonymously. CITE knows if a student completed their evaluation but not which specific comments are theirs. Some of the comments received to date from students are listed below.

- "I am very happy with the information that I received through the course. I wouldn't hesitate to take another course over the internet."
- "Great course. I learned quite a bit."
- "It's very interesting course material that will have real applications in the present and future."

- “I was one of the University of Massachusetts students who took the ITS course under the guidance of Dr. Jonathan Upchurch last semester (Spring 2000). I learned a lot through the course and it really encouraged me to go for a career in ITS.”
- "Thanks for providing this distance learning course. It was really useful and interesting to me."
- “First time experience and it was worth it. No regrets!”

As stated earlier, CITE offers its courses free to its university partners. Many of CITE’s university partners joined CITE specifically to gain access to the Fundamentals course for their students. Below is some of the feedback received from the various CITE universities offering the course.

- " At universities with small graduate programs (like ours) it allowed us to offer a course that goes beyond the expertise of our faculty, and is cost effective." – William Sproule, Michigan Technological University
- “Congratulations to you and the CITE team on an excellent product so far - well done. I believe it will prove to be a very popular course.” - Phil Charles, The University of Queensland (Australia)
- “I have viewed most of the modules, and I like the format and the information presented. I am currently teaching an introductory ITS course here at the University of Rhode Island, and one of the modules helped me tremendously.” – Christopher Hunter, University of Rhode Island
- “You not only saved me the time and effort to offer this course myself, but also exposed my students to a commendable and prestigious group of ITS experts. As a CITE member and a member of the curriculum committee, I congratulate you and the team of instructors on your tremendous effort invested in this course. Please keep up the good work and expand to other courses as well.” – Baher Abdulhai, University of Toronto
- “The course was very successful on our side.” – Lei Yu, Texas Southern University
- “I have received very favorable comments from the participants. The course modules are very well organized and the quality of presentation is regarded as excellent.” – Ata Khan, Carleton University

### **CITE Awarded a U.S. Department of Education Grant**

It is one of CITE’s goals to significantly increase its number of university partners, both nationally and internationally, in order to expand the geographical realm of graduate level ITS course offerings. The more graduate students coming to the workforce with ITS knowledge and experience the better.

CITE has received an award for a three-year Learning Anytime Anywhere Partnerships (LAAP) grant through the U.S. Department of Education Office of Post Secondary Education. The grant began on October 1, 2001 and continues through September 30, 2004.

LAAP is a highly competitive grant program for distance education projects that are asynchronous, innovative, scalable, and have national significance. The program was authorized by the 1998 Amendments to the Higher Education Act of 1965. The LAAP program supports partnerships among colleges and universities, employers, technology companies, and other relevant organizations to create postsecondary programs that deliver distance education "anytime and anywhere."

It was a tribute to the CITE organization that its proposal was ranked third in a highly competitive environment that included 394 pre-qualification submissions and 89 proposals. Due to uncertain LAAP funding for FY 2002, only six contracts will be awarded.

The entire ITS community will benefit from the activities that will be implemented as a result of this grant to CITE. John Baniak, Executive Director of the I-95 Corridor Coalition stated, "Our members from Maine to Virginia are excited by the expansion opportunities for CITE's program that this grant will support. The Coalition originally provided the seed funding to initiate CITE recognizing that CITE could provide our members a convenient way to provide ITS training to current employees and facilitate graduate level ITS education for potential new employees."

### **Conclusion**

In this era of rapidly changing needs and technologies, transportation is no exception. CITE courses endeavor to transmit up-to-date knowledge of the transportation environment and its concerns, and to familiarize students and professionals alike to the necessity and feasibility of applying technology to transportation systems, all in a format that is convenient, accessible and flexible.