



# Trenchless Technology Center Newsletter

J U N E 2 0 0 4

## New Degree in Urban Systems Engineering

The Department of Civil Engineering and TTC are pleased to announce the launching of a new Master of Science Degree in the area of Urban Systems Engineering. Urban systems engineering is an emerging field that focuses on the optimization of the performance and operation of the fixed infrastructure systems that serve as the lifelines of our urban centers.

By viewing an urban center as a set of systems that are partially interconnected, methods and technologies can be developed to monitor and optimize these systems with respect to predetermined performance indicators. The shift from a component-oriented design and management approach to a system-oriented approach opens the way to new and innovative methods for delivery of services and goods and to enhanced harmony among the fixed infrastructure, the built environment and the human society that uses both.

The curriculum covers selected aspects within the wide spectrum of the technical, economic, ecological and sociological issues faced by municipal engineers in a modern urban setting. Special emphasis will be given to the rehabilitation of existing structures and lifeline networks; solid/liquid waste and stormwater management; and

applications of information and sensor technologies. Course material is designed to provide students with a working knowledge of the topic, as well as a strong scientific background.

The program consists of five core courses and three elective courses. Core courses include:

- Urban hydrosystems engineering
- Pollution control and residuals management
- Infrastructure management
- Evaluation and rehabilitation of buried structures
- Evaluation and rehabilitation of above-ground structures

In addition, a wide range of technical electives is available within civil engineering, as well as related disciplines (e.g., mechanical and material engineering, forestry and more).

To obtain additional information regarding this program, as well as one of our brochures, please contact Dr. Erez Allouche, program coordinator, at (318) 257-2852 and (318) 257-4176 or via e-mail at [allouche@latech.edu](mailto:allouche@latech.edu).

## Santa Monica's Municipal Forum

During the *Trenchless Technology Rehab Road Show* held May 25-26 in Santa Monica, Calif., the TTC held a municipal forum for trenchless technology.

For several years, TTC has held a series of regional forums for trenchless technology. Current forums are held bi-annually and are loosely centered around Houston, northern Louisiana, Columbus, Kansas City, Denver and the Seattle-Tacoma-Portland area.

The essential idea behind the forum program is to provide a

vehicle by which public works personnel trying to implement trenchless technology solutions can find what has been tried by other agencies and by which they can adopt proven best practices. Reinforcing successful trenchless solutions, sharing new product trials and providing peer-to-peer transfer of information are important keys in making sure that trenchless methods are used effectively.

The short forum in Santa Monica was used as chance for public

works personnel in the Southern California region to see if they would benefit from an ongoing forum program. A total of 14 municipal participants attended the forum and conducted a lively discussion of the challenges facing their organizations and potential technical solutions.

For additional information regarding the next forum in your area, please contact Jadranka Simicevic at (318) 257-4072 or via e-mail at [jadranka@coes.latech.edu](mailto:jadranka@coes.latech.edu).

# TTC's New Education and Research Laboratory

As trenchless technology is rapidly gaining recognition by municipal, state and federal authorities as a preferred means for the renewal and installation of buried services, there is a growing demand for engineers and technologies with exposure and knowledge in this area.

TTC is pleased to announce that a grant application titled "Trenchless Technology Education and Research Laboratory (TTERL)," submitted to the Louisiana Board of Regents, was selected for funding. TTERL is a unique, dedicated, state-of-the-art testing center aimed at enhancing trenchless technology education and research at the undergraduate, graduate and continuing education levels.

The new facility will consist of four stations: a) a briefing/review/presentation station; b) a soil box with a horizontally operated hydraulic actuator; c) an inversion chamber demonstration unit and d) a rheology laboratory. The facility will be able to accommodate up to 40 students at one time, spread among the four stations.

The unique features of the facility will enable the offering of a more comprehensive educational experience for undergraduate and graduate students. Many of the engineering students do not easily grasp abstract physical concepts; many of those students are highly visual learners. One of the great advantages of engaging students in experimental investigations and multimedia presentations is the ability to present abstract technical concepts as concrete visual representations.

To that end, TTC faculty members are currently developing an array of physical demonstrations that illustrate the inherent complexity associated with the design aspects of trenchless construction methods, such as horizontal directional drilling, pipe bursting and pipe jacking. We believe that the ability to show students what is happening on the inside of an inversion chamber used for pipe relining and the ability to demonstrate quality control issues associated with the cured-in-place pipe (CIPP) rehabilitation method will represent a tremendous improvement in our current ability to provide the students with a genuine understanding of these issues.

Selected components of TTERL will be incorporated into the curriculum of undergraduate and graduate courses at Louisiana Tech University starting this fall, while the facility is expected to be fully operational by January 2005. The first continuing education session is planned for May 2005. Organizations and individuals interested in contributing supplies related to trenchless construction methods or sponsoring some of TTERL educational and continuing education activities can contact Dr. Erez Allouche at Ph: (318) 257-2852 Fax: 318-257-2777 or via e-mail at [allouche@latech.edu](mailto:allouche@latech.edu).

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directed to the center.

## TTC Welcomes Dr. Mike Baumert



The TTC would like to introduce its newest member — Dr. Mike Baumert.

Dr. Baumert will be joining Louisiana Tech University this fall as a visiting assistant professor. He will be teaching courses in Construction Technology and Civil Engineering, as well as maintaining an active role in TTC. He brings considerable expertise in his area of research — the modeling of HDD pull loads with a particular emphasis on the development of real-time monitoring technologies for HDD applications.