



# Trenchless Technology Center Newsletter

April 1999

## Municipal Forum Meetings

Three of the TTC municipal forum groups met in Houston just prior to the UCT Conference. One session of the forum dealt with approaches to new product acceptance by municipalities and in-

The Columbus (Ohio) Forum met on Feb. 1. The group discussed several topics: lateral rehabilitation and inspection, large diameter sewers, and non-destructive testing. The rest of the meeting was



Joint Forum Meeting. From left: Joe Barsoom, Denver; Luis Aguiar, Miami/Dade; Tony Almeida, Dallas; Fred Banister, Minneapolis-St. Paul; Bob Moore, Greeley; Steve Birdsall, Loveland; Cindy Kovacic, Corpus Christi.

cluded presentations by Dr. C. Vipulanandan from the University of Houston on its cooperation with the City of Houston on testing of coatings. A presentation was given on the approach used by the Civil Engineering Research Foundation in its CeITEC (Civil Engineering Innovative Technology Evaluation Center) program. The remainder of the meeting was devoted to discussions of various issues raised for discussion by forum members.

spent in discussion of individual issues raised by participants.

Forum members plan to cooperate by sharing specifications as a way to improve the specifications and provide greater standardization among the municipalities.

Several of the municipal forums plan to meet in Orlando in conjunction with the No-Dig '99 Conference in late May. (Contact NASTT for information on the conference at 703-351-5252).

## TTC Cooperating with New Center for Training HDD Operators

The TTC is providing assistance to the World Wide Horizontal Directional Drilling Training Center (HDDTC), a center established in Purcell, Okla., which plans to offer its first training classes in 1999.

The TTC will help the training center by reviewing its educational programs through a review of its training goals, technical materials, educational methodologies and assessment methods.

The HDDTC has been established

with the purpose of providing training on a variety of equipment from different manufacturers. Its course will have an emphasis on:

- operator understanding of the fundamentals of maintaining and using HDD equipment
- field operations with respect to bore setup and boring productivity
- avoidance of, and reaction to, HDD bore problems in various soil types and bore settings.

## Advanced Drilling Technology Needed to Search for Life on Mars

A recent workshop explored the technological developments needed to drill several kilometers deep on Mars to reach a zone of unfrozen water and search for evidence of life in this water.

The workshop was organized by the National Advanced Drilling and Excavation Technologies Program in collaboration with NASA and the Department of Energy and was held in Washington D.C.

The unknown conditions of the Mars subsurface, the extreme power and weight limitations on equipment and the need for mostly autonomous drilling operations present major new challenges in hole creation, hole support and intelligent control systems. However, the development of the technologies needed for this drilling on Mars could be of benefit to earthbound drilling even prior to the Mars mission.

## Ray Sterling Receives Award

At the UCT Meeting in Houston in January, Dr. Ray Sterling was awarded the Most Valuable Professional (MVP) Award from the Gulf Coast Trenchless Association and *Underground Construction* magazine.



Dr. Ray Sterling



## TTC Assists in Developing Utility Location Needs Statement

The TTC is assisting in the development of a statement of need for underground utility location for use by the Federal Laboratories Consortium. This statement of need will be circulated to federal laboratories and universities to determine whether there are technologies (existing or under development) that can be used to help solve the problems.

The statement of need is written from an industry perspective so that researchers not familiar with the proposed application can readily understand the operational and cost constraints under which the equipment must perform.

### The statement of need is to include:

- Technology requirements — a summary statement regarding the technology that is needed to solve this important problem.
- Extent of the problem including

safety, environmental, and economic factors related to the industry and its employees, and to communities and citizens.

- A description of equipment and/or methods that currently are used to locate underground utilities and an explanation of why the equipment and/or methods need to be improved or replaced.
- Technology constraints and specifications — a thorough description of the industry's requirements for new technology. It may be necessary to evaluate potential solutions against industry specifications. These concepts might include sensors and systems/equipment design and functional requirements, cost constraints, and the market potential for new technology.

The statement of need is scheduled to be completed in the summer of 1999.

## Dr. Robert McKim Joins Faculty

Dr. Rob McKim, the former Director of the Center for Advancement of Trenchless Technology at the University of Waterloo, joined the faculty at Louisiana Tech University in December 1998.



Dr. Robert McKim

Dr. McKim will be a visiting professor of civil engineering for the remainder of the 1998-99 academic year — teaching in the construction

and civil engineering programs in the College of Engineering and Science and conducting research with the TTC.

Dr. McKim's strong background in trenchless technology will be a big asset to the TTC as it continues to expand its trenchless research, education and technology transfer programs.

## Faculty and Student News

• **Dr. Ray Sterling** was elected vice chairman of the North American Society for Trenchless Technology (NASTT) at its board meeting in January. The vice chairman position provides an automatic progression to the chairmanship in the following year.

• **Dr. Les Guice** was named in February 1999 as the Dean of the College of Engineering and Science at Louisiana Tech University. Dr. Guice was a co-initiator of the TTC with Dr. Tom Iseley and has been an active participant in the center throughout its development.

• **In December 1998**, Dr. Sterling gave a seminar on pipe bursting as part of the Gulf Coast Trenchless Association seminar series organized by Dr. Vipulanandan at the University of Houston.

• **In February 1999**, Dr. Sterling was the keynote speaker at Infratunnel '99, held



Jadranka Simicevic, TTC research engineer, demonstrates the TTC Database at UCT.

in Utrecht, The Netherlands, and also gave a lecture at the IHE Institute in Delft.

• **Xiaosheng Lu** successfully defended his M.S. thesis in February. His thesis was titled "Finite Element Analysis for CIPP Encased in Oval Host Pipes."

• **Qiang Zhao** successfully defended his Ph.D. thesis in March. His thesis was titled, "Finite Element Simulation of Creep-Induced Buckling of Constrained CIPP Liners."

## Industry Advisory Board

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Communications should be directed to the center.