Dear Colleagues and Friends,

This issue of Currently at CUIRE will update you with some of our research, outreach, and educational activities. From June 22 through 26, 2013, CUIRE hosted the ASCE International Pipelines 2013 in Fort Worth with more than 810 attendees from across the U.S., and 60 foreign countries, and with 57 exhibitors and $283,000 in exhibits and sponsorships. The exhibit space was sold out six months before the conference with more than 20 companies on the waiting list. Conference attendees had a chance to attend the pre-conference workshops, technical sessions, and visit with exhibitors from industry leaders. The conference began Saturday, June 22, with the Pipeline Research Needs Symposium and continued on Sunday, June 23, with two, full-day, pre-conference workshops covering Large-Diameter Water Transmission Pipelines, and Seismic Design of Buried Pipelines. Also on Sunday, pipelines attendees had a chance to participate in the Sporting Clays Tournament before attending the Networking Reception with friends and colleagues at the Exhibit Hall. There were six technical paper tracks with more than 190 papers presented and published in the conference proceedings. For the first time, one track was focus on papers on oil and gas applications. The conference concluded on Wednesday noon with a closing keynote presentation. More than 67 attendees participated in the golf tournament and 50 attended a special technical tour on Wednesday afternoon.

As always, please contact CUIRE at 817-272-9177 or cuire@uta.edu with any questions, suggestions, or comments.

Warm Regards,
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2013 CUIRE Board Members

The CUIRE Board is the backbone of our organization, and we would like to recognize them for all their support and dedication.

Sam Arnaout ....................................................... Hanson Pipe and Precast
Kathy Berek ......................................................... TRWD
Ralph Carpenter ................................................. AMERICAN Cast Iron Pipe Co.
Robert Carpenter ................................................ Underground Construction
George Davis ....................................................... Missouri DOT
Mark Dionise ....................................................... Michigan DOT
Tim Kennedy ....................................................... Structural Technologies
Chad Kopecki ...................................................... Dallas Water Utilities
Rich Mielke ......................................................... Northwest Pipe Company
Mohammad Najafi ................................................ UT Arlington
Lynn Osborn ....................................................... Instiuf orm Technologies, Inc.
Mario Perez ....................................................... 3M Corrosion Protection
Camille Rubelz ................................................... Plastic Pipe Institute
Jim Rush ............................................................. Benjamin Media Inc.
Lawrence ............................................................ Slavin OPCs
Richard Williammee, Jr. ................................. Texas DOT

Field Visit and Tour of the Vermeer Texas-Louisiana in Irving, Texas

On Friday November 16, 14 students along with Dr. Najafi, CUIRE Director, took a tour the Vermeer Texas-Louisiana in Irving, TX.

A Presentation on New Technologies in Trenchless Equipment and also a live demonstration on a directional drill installation and vacuum excavation were part of the agenda for this field visit.

CIURe and Benton Associates Receive WERF Research Grant

Evaluating No-Dig Structural Rehabilitation of Sanitary Manholes

In July 2012, CUIRE and Benton Associates (Jacksonville, Illinois), received a research grant from the Water Environment Research Foundation (WERF) on “Evaluation of Manhole Rehabilitation Technologies.” While manholes are easily accessible, it is estimated that there are more than 21,000,000 sanitary manholes in the U.S. alone, and they offer a variety of challenges that are frequently misunderstood and overlooked. Similar to pipelines, manholes come in a variety of materials and sizes. They are commonly made of brick-mortar, precast concrete, concrete block and cast-in-place concrete. This research evaluates structural capabilities of common manhole rehabilitation materials by conducting physical testing, case studies, and literature search to develop a decision support system for manhole rehabilitation methods and materials. All utilities, municipalities and companies involved in manhole rehabilitation products and services are invited to participate in this unique project. The numbers of products that can be evaluated are limited, early participation is encouraged. For more information, contact Dr. Firat Sever, Benton & Associates, Inc. Phone: 217-245-4146, Email: fsever@bentonassociates.com or Dr. Najafi, CUIRE, Phone: 817-272-9177 or Najafi@uta.edu.
**Third Pipeline Research Needs Symposium Held on June 22, 2013**

More than 80 people attended the third Pipeline Research Needs Symposium held in conjunction with the ASCE Pipelines 2013 held on Saturday, June 22, at the Renaissance Worthington Hotel, in Fort Worth, Texas. The Symposium was sponsored by the Pipeline Research Committee, a technical committee of ASCE Pipeline Division. Pipeline Research Committee promotes research in pipeline transportation of liquid, gas, and solids; identifies research needs in pipeline engineering; and fosters interest in new pipeline technology such as freight pipelines.

The goal of this symposium was to provide the pipeline industry and research community an update on the latest pipeline developments and research needs. Leaders in the pipeline and utility industry consisting municipal, regional, and federal government, professional associations, pipeline owners, consulting and design engineers, manufacturers and service providers, and academia identified pipeline problems and possible solutions, to generate research interest in pipeline topics. Representatives from water, sewer, gas and oil industries from U.S. as well as five foreign countries, including Australia, China, New Zealand, Canada, and Switzerland were present. The Symposium was chaired by James Thomson, a consulting engineer from Switzerland, and Dr. Mohammad Najafi, UT Arlington Professor and Director of CUIRE. In the afternoon, five breakout sessions were held in the following topics:

1. Pipeline Failures
2. Pipeline Inspection and Monitoring
3. Pipeline Materials, Corrosion and Biofilm
4. Pipeline Asset Management and Sustainability
5. Trenchless Technologies

The outcomes with a list of participants will be published in a Pipeline Division Committee Report as well as a special issue of the ASCE Journal of Pipeline Systems Engineering and Practice.

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**CUIRE Completes Testing on Large Diameter Steel Pipe Installation in Native Soils**

Last December, CUIRE completed a series of soil box tests for the Tarrant Regional Water District (TRWD). Based on the results of these soil box tests, several finite element models were developed and a 2.29-mile, 108-in. diameter, welded steel pipe is being installed using controlled low strength material (CLSM) embedment with native soils. This new pipeline will connect TRWD’s existing balancing reservoirs to the new hydrogenation facility being constructed. The project is informally evaluated by Envision™ Rating System (www.sustainable-infrastructure.org/rating), and addresses sustainability in a number of ways, such as use of native materials as aggregate.

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**CUIRE Develops a New Master of Construction Management with Focus on Infrastructure**

On the education side, currently CUIRE with help of its Industry Board Members and Friends is offering courses on pipelines and trenchless technology, infrastructure sustainability and asset management, as well as public private partnerships (P3) for infrastructure projects. Plans are underway to teach courses on sustainability, and building information modeling (BIM) for infrastructure applications. The new Master of Construction Management (MCM) with focus on infrastructure projects will be offered both in class and online. Students can take 10 graduate courses and potentially graduate with a Master of Construction Management in one year. There are five core construction management courses in the curriculum, and students are allowed to take five additional electives on pipelines and infrastructure courses.
Najafi publishes a new textbook: Trenchless Technology – Planning, Equipment, and Methods

Last January, Dr. Mohammad Najafi, P.E, F. ASCE, Director of the Center for Underground Infrastructure Research and Education (CUIRE), and Director of Construction Engineering and Management at the Department of Civil Engineering at The University of Texas at Arlington, published a new book in trenchless technology. This book is a complete guide to trenchless technology project management, planning, costs, and methods.

Published by McGraw-Hill (ISBN:0071762450/9780071762458) and written by an expert in the field of pipeline system engineering, this 608-page book (also available electronically) describes how to plan, schedule, and implement efficient, cost-effective trenchless technology piping projects. Filled with detailed illustrations and real-world examples, Trenchless Technology: Planning, Equipment, and Methods explains how to accurately compare the costs of trenchless projects, considering geotechnical and rock mass impacts, drilling fluids, and locating and tracking equipment.

This in-depth reference provides important information on how to estimate the cost of labor and equipment and schedule trenchless piping projects. A wide range of trenchless technology methods suitable for various ground and project conditions are discussed in this practical resource.

Coverage includes:
- Cost comparison of trenchless technology methods
- Planning for trenchless technology projects
- Project delivery methods
- Geotechnical considerations
- Rock mass properties impacts on trenchless project feasibility
- Tracking, locating, and planning tools for horizontal directional drilling
- Drilling and lubricating fluids
- Planning and construction requirements for horizontal direction drilling
- Horizontal auger boring
- Pipe ramming
- Microtunneling methods
- Pilot tube (or pilot tube microtunneling) method
- Pipe/box jacking and utility tunneling
- Cured-in-place-pipe method
- Sliplining
- Lateral renewal
- Localized repair
- Planning and construction requirements for pipe bursting
- Panel linings
- Spray-in-place pipe

CUIRE to Hold Certification Schools
Sunday & Monday, January 26-27, 2014, Houston, TX

Sunday, January 26, 2014
Pipe School® Applications, advantages and limitations of each type of pipe, such as steel, ductile iron, vitrified clay, PVC, HDPE, fiberglass, etc., and new developments in pipe materials and jointing systems.

Geotechnical School® Geotechnical requirements for both trenchless and open-cut applications. Soft soils and rock investigations methods, and how ground conditions will impact trenchless feasibility and productivity. Case studies will include several projects from inception to completion and delivery.

Monday, January 27, 2014
In following Schools, you will learn from Industry Experts on How to Execute Successful Projects: From Start to Finish:

Advanced Horizontal Directional Drilling (HDD) School® Planning, design, construction, of large, mid and small size HDD projects from inception to closeout and delivery. Includes, tracking and locating, pipe loads, bore planning, drilling fluids, and case studies.

CIPP School® Pipe lining (rehabilitation, renewal) cured in place pipe (CIPP) method. Includes planning, design, construction, inspection, and QA/QC.

Pipe Jacking and Microtunneling School® Conventional pipe jacking, as well as pilot tube, microtunneling, horizontal auger boring, pipe ramming and case studies.

Pipe Bursting School® Pipe replacement using bursting and removal. Includes planning, design, construction, inspection, and QA/QC and case studies.

Registration at above Schools provides complimentary full UCT registration as well as a copy of new Trenchless Technology: Planning, Equipment and Methods. Special discount is available for government agencies, groups, and early registrations. For more information call CUIRE at 817-272-9177 or Email: cuire@uta.edu.
CUIRE Receives a Competitive Grant from Water Research Foundation
Evaluating Large Diameter HDPE Pipe for Water Applications

Last December, CUIRE received a competitive research grant from Water Research Foundation (WRF) for the U.S. Environmental Protection Agency’s program on *Innovation and Research for Water Infrastructure for the 21st Century*. Black & Veatch Corporation (Kansas City, Missouri) and Benton and Associates (Jacksonville, Illinois) provide technical assistance in this research. Additionally, many municipalities and water utilities provide guidance, case studies, and experiences with large diameter (16-in. and larger) HDPE pipe for water applications. Large diameter transmission mains are the most critical element of water infrastructure, since a failure can be catastrophic in addition to extended service interruptions for many customers in addition to water quality concerns. Recent advancements in polymer science have resulted in production of high-strength and durable high density polyethylene (HDPE) pipes. HDPE pipe has the potential to be a cost effective alternative and reliable option in terms of preserving water and water quality in transmission and distribution systems. However, most engineers and water utilities are reluctant to use HDPE due to lack of experience in its maintenance, repairs, asset management, connections and tapping. The objective of this study is to determine the durability and reliability of HDPE water mains as an economical alternative to other pipe materials. For more information on how to participate, contact Dr. Najafi at CUIRE, Phone 817-272-9177 or najafi@uta.edu.

Student Chapter Meeting and Presentation,
October 20, 2012 Arlington, Texas

The student chapter of the North American Society for Trenchless Technology (NASTT) at The University of Texas at Arlington held a meeting with more than 20 graduate and undergraduate students attending. John Newell with No-Dig Tec and Alpha-Plumbing Co. made a presentation on *A look inside the innovative technology of pipe bursting from the eyes of one of the largest pipe bursting contractors in North Texas*. If you would like to be a guest speaker for future chapter meetings please contact CUIRE.