

C U R R E N T L Y @ C U I R E

CENTER FOR UNDERGROUND INFRASTRUCTURE RESEARCH AND EDUCATION
Vol. 2; Number 2

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CUIRE takes a look back at all our accomplishments over the past three years

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A little taste of what and who our Board consists of



Spring blooms on MSU's Campus

- **Attention Board Members**

If you have a story about your products, services, or projects, please e-mail it to us and we will do our best to include it in future issues of **Currently at CUIRE**.

From the Director

All the magnolia trees are in full bloom signaling that spring is finally here in East Lansing (at least we think so.) The semester at MSU has come to an end and most of the graduate students working for the Center are leaving soon for their summer internships.

Congratulations to Roy Luo, graduate student for CUIRE, who graduated last week. Roy's thesis is titled "Productivity Analysis of Microtunneling Pipe Installation Using Simulation." Roy was an essential part of the CUIRE graduate team and will be missed. Roy will be working for Mercedes Homes and we wish him the best of luck in his future!

In March, CUIRE held another HDD school in Novi, Michigan which was attended by about 20 people and turned out to be a great success. On May 23, CUIRE will hold its first Pipe Bursting School.

This is a special issue of *Currently @ CUIRE*. CUIRE has been established for three years now, and at such a young age has many accomplishments to celebrate. This issue looks back on CUIRE's accomplishments and our contribution to the industry. Looking forward, CUIRE has numerous opportunities and an exciting potential for growth.

As always, I can not thank our Board Members enough for their continuous support and contributions to the Center. Profiles of all the companies represented by our board are also included in this issue. Please take a moment to see the extensive industry support our Center receives.

Have a wonderful summer,

Mohammad Najafi, Ph.D., PE
Director, CUIRE

MICHIGAN STATE
UNIVERSITY

CUIRE Makes Industry Contributions

The Center for Underground Infrastructure Research and Education (CUIRE) has been very busy since its establishment in 2002 declaring its place in the trenchless industry. With a solid base of research endeavors, strong participation in the educational programs, and dedicated industry support, CUIRE is certainly living up to its name.

The future of the trenchless industry depends on quality research in several topics, and CUIRE is doing its part to move the trenchless industry forward. Research conducted by the Center is under the direction of Director Dr. Mohammad Najafi and Dr. Abdelkadar Tayebi, CUIRE's research manager. Additionally, Dr. Oleh Kinash, a research associate for the Center, assists with research endeavors. The extensive background experience of Najafi, Tayebi and Kinash allows the center a diverse knowledge base from which to operate. With a variety of research abilities and resources, the industry has guided CUIRE's research towards land use, asset management, field evaluations, social costs, and support systems. One of the most recently completed research endeavors is a study titled Effects of Renewing Underground Utilities on Better Use of Land, which analyzed the percentage of Michigan cities' utility maintenance budget spent on suburban utilities. It brought to attention the percentage of limited city resources/funds that are used in a cities and suburbs for maintenance. The study concluded that utilities provided in cities and in suburbs do not have a major influence on inhabitants, but could contribute to some extent to people moving away from cities. Revitalization of urban underground infrastructure can be one of a number of factors preventing sprawl.

Another completed research project from CUIRE focuses on social costs, entitled Quantitative Analysis of Open-Cut versus Trenchless Method of Pipe Installations or Renewal in an Urban Setting. This research quantified traffic costs in both trenchless and open-cut situations and created a traffic-cost prediction model, which serves as a useful tool when determining the social costs of a project.

CUIRE currently has several research projects in progress, including a Review of Benefits, Survey of Available Methods and Materials, and Updating of Construction Specifications and Contract Documents for Trenchless Construction Methods being conducted for the Michigan Department of Transportation (MDOT). Because MDOT's use of trenchless technology is expanding rapidly, it is essential they have up-to-date specifications and regulations for their contractors. The results of the research will be presented to MDOT in the form of Reports, Updated Permit Conditions, and Guidelines in May 2005. Thereafter, workshops will be provided to MDOT personnel about the specific set of documents and trenchless construction in general. On-site demonstration of trenchless construction will also be provided in the workshops. The CUIRE was also just recently awarded a grant for the study of

asset management for drainage infrastructure and culverts. This research is scheduled to commence on July 1, 2005. For a complete list of CUIRE's research endeavors, please contact CUIRE.

In addition to the funded research CUIRE is working on, graduate students working for the center are doing their own research to further industry knowledge. Social costs are a key concern for public agencies, and one of the reasons trenchless is becoming so popular. One student working for the center is looking at the social costs associated with utility installation and how they can be assessed in the bidding process. Another is investigating the correlation between safety awareness and personality traits in trenchless technology. Additional research includes pipeline condition assessment system and renewal strategy, productivity and cost analysis of microtunneling operations using a construction simulation method, and a decision support system for selecting trenchless methods in both renewal and installation construction. All student research will be published as thesis work and presented as a paper at an industry conference. If you have any questions regarding graduate student research, or would like to contribute your experiences, data, or other information to assist students with their research, please contact the CUIRE directly.

The trenchless business is growing, and CUIRE is doing its part to keep education in the forefront of the industry. With continuous advancement in methods and materials, industry professionals look to CUIRE for schools



providing information on the latest in trenchless. Past school topics have included Horizontal Directional Drilling, Auger Boring, and Trenchless Inspection. On May 23-24, 2005, CUIRE will hold its first Pipe Bursting school. The schools are taught by industry experts, and all attendees are awarded certification and Continuing Education Units. The schools are tailored to a general audience of all levels of expertise. From contractors and engineers to designers and planners, these schools are proven to be useful to a variety of professionals looking to further their knowledge of the trenchless industry.

CUIRE's dedication to educating the industry goes beyond the educational seminars, however. The first text book for the trenchless industry, *Trenchless Technology*, was published in January 2005 by McGraw-Hill. Dr. Mohammad Najafi, Director and Founder of CUIRE, put this comprehensive text book together. Additional publications from CUIRE include an ASCE Horizontal Auger Boring Manual of Practice as well as ASCE New Pipeline Technologies, Security, and Safety book, both of which include information on trenchless materials, methods, and procedures. These publications are available to order online at www.amazon.com.

Additionally, CUIRE recognizes the future of the industry lies in today's students, and established the student NASTT chapter at MSU two years ago. More than tripling in size in the past two years, the student group is gaining popularity at MSU. Also, CUIRE established a graduate-level course in trenchless technology at MSU. Open to graduate and senior-level undergraduate students and taught by Dr. Najafi, this class offers students an introduction to underground infrastructure and trenchless materials, methods, and issues in the industry.

CUIRE's research and educational endeavors have been very successful, but it would not be possible without the industry support of CUIRE's Board Members. Board Members close the all-too-common gap between industry and academia, and provide research guidance, educational needs, and a diverse knowledge base for CUIRE researchers to refer. Becoming a Board Member is easy and comes with a long list of benefits, including free attendance to all educational seminars, first-hand knowledge of CUIRE research, access to all of CUIRE's resources for you and your company, as well as many more. We invite you to join the CUIRE family by becoming a board member, and help move the trenchless industry forward.

If you would like to become a Board Member or would like more information on becoming a Board Member, the research being conducted at CUIRE, or our educational seminars, please contact Dr. Mohammad Najafi, Director, CUIRE at Najafi@msu.edu. ~Amanda Simpson, Graduate Student for CUIRE

2005 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.

Jim Barbera	Barbco, Inc.
Leo Barbera	Horizontal Holes International, Inc.
Jeff Bistodeau	Premier Events
Douglas Buchholz	Oakland County Drain Commission
Lori Burgett	Kokosing Construction Co.
Frank Canon	Baroid IDP
John Capocci	Barbco
Robert Carpenter	Underground Construction
Eugenia Chusid	City of Santa Monica
Ben Cocogliato	TT Technologies, Inc.
George Davis	Mo Dept. of Transportation
Mark Dionise	MI Dept of Transportation
Troy Freed	SOS Service Group, Inc.
Peter Funkhouser	MI Dept of Transportation
Mark Gallucci	Digital Control, Inc.
Daniel Hanson	Hanson Engineering
John Heiberger	Consumers Energy
Cliff Henderson	Hobas Pipe, USA
J.L. Hilfiker	Concrete Pipe Association of Michigan
Mark J. Holbrook	Hamburg Township DPW Admin.
Larry W. Johnson	Hobas Pipe USA
G. Alan Johnson	Wade & Associates, Inc.
Oleh Kinash	CUIRE
David Kozman	American Water Services
Steve Kramer	Jacobs Civil Inc.
Bruce Kuffer	Fishbeck Thompson Carr & Huber
Nick Lefke	MDOT
Dan Liotti	Midwest Mole, Inc.
Willaim (Tim) Mahon	Consultant
Mike Moore	McLaughlin Mfg Co.
Mohammad Najafi	Michigan State University
Carl M Pearson	Kenny Construction Company
Gaylord Richey	Astec Underground
Jim Rush	Benjamin Media Inc (Trenchless Technology)
Jim Scott	Solution Resource
Gary M. Soper	Benton Charter Township
Jeff Sowers	TBE Group, Inc.
Jamie Taggert	Peninsular Technologies
Abdelkader Tayebi	CUIRE
Rob Tumbleson	Akkerman, Inc.

NASTT Student Chapter – Michigan State University

Current Officers:

PRESIDENT:	Suzie von Bernuth
VICE PRESIDENT:	Rory Andreski
SECRETARY:	Jennifer Rheaume
TREASURER:	Jeff Mehall
FACULTY ADVISOR:	Dr. Mohammad Najafi

The main objective of the NASTT student chapter at Michigan State University is to educate and train the graduate and undergraduate students in the field of Underground Construction and Trenchless Technology.

To date in this academic year, the club has participated in the UCT Conference and Exhibition 2005, Houston, Texas January 25th-27th, 2005 Vermeer of Michigan Navigator School, Monday February 7th, and an HDD Inspector Training School in Novi, MI, and a trip to the No-Dig show and conference. At regular meetings, presenters such as Mark Dionise of MDOT and Ben Cocogliato of TT Technologies have spoken to the student group. Future plans include a possible day trip to Ditch Witch in Howell.

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CUIRE Board Member Profiles

Akkerman, Inc.

Akkerman Inc. manufactures, sells, and rents microtunneling, pipejacking, tunnel boring, guided boring, haul systems, and sliplining equipment. Since 1973, Akkerman has established a solid reputation as a leader in providing high quality, dependable microtunneling, pipejacking, tunnel boring, guided boring, haul systems, and sliplining equipment to the trenchless industry. Trenchless equipment is the effective, economical and safe solution for building new or rehabilitating existing underground infrastructures.

American Water Services

American Water Services proudly provides a broad range of water and wastewater services to meet a full spectrum of needs for municipal, industrial and military clients across North America. Our extensive experience from large-scale treatment facilities to small rural plants, as well as simple to complex projects, provides our clients with the necessary knowledge and expertise that form landmark partnerships. The benefits of our experience passed along to our clients include reduced operating costs, increased focus on core business activities, transfer and reduction of water-associated risks, assurance of citizen and environmental stewardship and the ability to stay abreast of new technologies and deliver on the growing expertise required.

Astec Underground

In 2002, Astec Industries, Inc. culled its expertise from American Augers® and Trenchor® and jointly produces a line of utility drills and trenchers in a state of the art manufacturing plant that it purchased from John Deere in Loudon, TN. In establishing this new company and new facility, Astec Underground was able to acquire the finest from engineering, manufacturing, sales, and service. This combined effort results in products, support, and service of unmatched quality.

Barbco, Inc.

Founded in 1989, Barbco, Inc. is a manufacturer of horizontal earth boring machines, directional drills, tunneling machines, auger and other related products for use in underground applications. Barbco, Inc. is dedicated to providing the highest level of products and services to the underground industry.

Baroid IDP

Baroid Industrial Products, a product line organization of Baroid Drilling Fluids, is a worldwide network of sales and service engineers, laboratory scientists, and support personnel dedicated to servicing all facets of the non-oil well drilling industries. Since the 1950s, products and services have been expanded to include all types of drilling. Baroid Industrial Products now supplies a comprehensive line of drilling, grouting, plugging, abandonment, and well rehabilitation and development products specifically engineered to optimize performance and end-user costs.

Benjamin Media Inc (Trenchless Technology)

Trenchless Technology Magazine was founded in 1992, however, since then the company has grown to publish seven other magazines and have successful conferences and trade shows. Now known as Benjamin Media, the trenchless industry turns to them for the latest in trenchless construction.

Benton Charter Township

City of Santa Monica

Concrete Pipe Association of Michigan

Consumers Energy

Consumers Energy is one of the nation's largest combination utilities, providing electric and natural gas service to more than 6 million of Michigan's 9.5 million residents, in all 68 counties of Michigan's Lower Peninsula. Consumers Energy is the principal subsidiary of CMS Energy, an international corporation that is a leader in energy infrastructure businesses.

Digital Control, Inc.

Digital Control Incorporated (DCI) was founded in 1988 to develop an advanced HDD drill head locating system. From the start, DCI's continuing objective has been to offer the highest quality locating system on the market. This goal was first reached with the introduction in 1991 of the DigiTrak locating system, which represented a major improvement over existing products and set the standard for locating performance. DCI followed its success with the introduction of the Mark I, through Mark V models of the DigiTrak receiver. The introduction of the Eclipse locating system ushered in a new era in the field of HDD locating. By focusing on ease of use, accuracy and a wide range of capabilities, this locating system is quickly becoming the standard by which other systems are measured.

Fishbeck Thompson Carr & Huber

Fishbeck, Thompson, Carr & Huber, Inc. (FTC&H) is a professional civil engineering, environmental, and architectural engineering consulting firm. FTC&H's diverse staff of engineers, scientists, and architects continually interacts to benefit their clients with a full-service approach to projects.

Hamburg Township DPW Admin.

The Hamburg Township Department of Public Works has many and varied responsibilities, including care of the Wastewater Treatment Plant and Sewer System, supervision of installation and maintenance of sewer lines, lift stations and grinder pumps. The Hamburg DPW handles the maintenance of Township-owned buildings, grounds and park properties, including lawn maintenance, irrigation and snow removal.

Hobas Pipe, USA

HOBAS Pipe USA is a producer and supplier of corrosion resistant HOBAS centrifugally cast fiberglass reinforced polymer mortar pipe systems with product and process technology under license from HOBAS Engineering AG of Switzerland. HOBAS Centrifugal casting of fiberglass reinforced polymer mortar pipes started in Europe 45 years ago. The group of companies has provided nearly 40,000 miles of pipe worldwide, enough to circle the world 1 1/2 times.

Horizontal Holes International, Inc.

Horizontal Holes is owned by Leo Barbera. Often referred to as the pioneer of Auger-Boring, Leo brings 35 + years of experience to the field. He also instructs and lectures for various associations. Horizontal Holes International carries a complete line of Large Diameter Boring Attachments, from 36-inch to 84-inch, and also offers hydraulic and electric powered machines and a complete line of augers with rock & dirt cutting heads.

Jacobs Civil Inc.

Kenny Construction Company

Founded in 1927, Kenny is a national contractor and construction manager with extensive experience building large and complex projects. Kenny Construction delivers superior value through a commitment to client partnerships, an understanding of a changing construction industry and employment of innovative building methods. Kenny's clients' complex projects, completed on time and on budget, include airports, highways, mass transit, stadiums, tunnels, buildings, hotels, power plants, and subways.

Kokosing Construction Co.

Kokosing Construction Company, Inc., is a multi-million dollar, regional general contractor committed to delivering the highest level of quality and superior service to valued clients around the Midwest region. Kokosing has over fifty years of experience in building almost every type of structure and has long been recognized as a leader in the Industrial, Treatment Plant, Underground Utility and Heavy/Highway Construction Sectors.

McLaughlin Mfg Co.

McLaughlin Manufacturing Company was found in 1921 and continues to be a consistent leader in the Trenchless Technology Industry. McLaughlin continues to provide state of the art products like the Verifier Line of digital Utility Locators and innovative designs incorporated into the traditional auger boring machine.

MI Dept of Transportation

MDOT fosters partnerships to develop an innovative and integrated transportation system that is responsive to Michigan residents, visitors and businesses. MDOT provides active leadership and support for planning, designing,

operating, and maintaining all aspects of a comprehensive integrated transportation system that is efficient, effective, safe, socially and environmentally responsible, responsive to current and future needs, and supportive of economic growth. MDOT continuously communicates with customers and stakeholders to make sure our activities and services are meeting their current and future needs. MDOT carries out its projects on time, within budget and with a high degree of quality.

Midwest Mole, Inc.

Midwest Mole, Inc. provides underground construction services including Auger Boring, Pipe Jacking, Directional Drilling; Pipe Ramming; Guided Boring, Grouting and Relining. Midwest Mole's mission is to be the most responsive, innovative and dependable trenchless technology company in our region; to maintain a profitable, successful company for our employees and owners; and to leverage our size and experience to complete every job on time.

Missouri Dept. of Transportation

MoDOT provides basic information on the Missouri Department of Transportation and its leaders, direction, history and funding. MoDOT works with the public, transportation partners, state and federal legislators, and other state and local agencies to provide a safe and efficient transportation system to the people of Missouri.

Oakland County Drain Commissioner

The Oakland County Drain Commissioner's Office provides the following programs and services: stormwater/watershed management; construction and operation and maintenance of storm drains, sewage disposal and drinking water systems; cross connection control, lake level control, Lake Improvement Boards, soil erosion and sedimentation control, and subdivision and plat review and is dedicated to the principles of integrity and professionalism, and to the preservation and protection of public health, welfare, convenience and the citizen's right to quality water.

Peninsular Technologies

Peninsular Technologies is dedicated to developing advanced data collection, inspection, correlation, and archiving software solutions for industry. Peninsular Technologies maintains the highest level of customer satisfaction and service while creating flexible applications of outstanding quality that provide ideal industry solutions, focusing is on video inspection applications that integrate technology with your business processes. Peninsular Technologies currently produces software for waste water management companies and municipalities, but is not limited to these markets. Premier Events

Solution Resource

TBE Group, Inc.

TBE Group was incorporated in 1984 by the firm's president, Patrick L. Beyer, PE. A national firm, TBE offers professional services to the private and public sector in Florida and nationally, which includes more than 30 state Departments of Transportation. TBE offers a full range of consulting engineering and planning services, including civil engineering, construction management, highway and bridge design, utility and subsurface utility engineering, transportation planning and engineering, land and site development planning and engineering, right-of-way support and acquisition, storm water management, value engineering and environmental services.

TT Technologies, Inc.

For over 40 years TT Technologies has been the worldwide leader in trenchless technology. TT Technologies complete line of trenchless equipment includes: piercing tools, guided boring tools, pneumatic, static and lateral pipe bursting systems, pipe ramming tools, bentonite mixing systems, constant-tension winches, directional drills and mini-directional drill rigs. Each year more trenchless sewer, water, gas and electric rehabilitation and replacement projects are successfully completed with trenchless equipment from TT Technologies than any other. TT Technologies is the leader in trenchless!

Underground Construction

For over 50 years, Underground Construction Magazine has provided the comprehensive coverage of the construction and rehabilitation activities for sewer/water pipelines, gas, oil and product transmission pipelines, gas distribution pipelines, and cable systems.

Utility Service Authority, LLC

Utility Service Authority, LLC was formed in April of 2000 to serve the utilities & pipeline industry. To insure customer focus and reliable client service, our organization is divided into several individual companies, each with specific areas of expertise and disciplines. Many of our staff members have over 20 years experience in the trenchless industry and extensive construction backgrounds. In addition, our personnel are well trained and respected industry professionals. From our Belleville office; we principally provide; pipeline cleaning & maintenance services, CCTV inspection, Grout Services, Manhole rehabilitation, CIPP pipe lining, Ultra-Liner PVC Lining System, Pipe-bursting, Slip-lining, Horizontal Directional Drilling & miscellaneous excavation services. In addition, we have additional resources available through our corporate organization in which we can bring immediate experienced staff and equipment, should a challenge or opportunity arise.

Wade & Associates, Inc.

The Wade team represents engineers, field managers, and software specialists who are nationally recognized experts in sanitary sewer assessment, diagnostics, and hydraulic modeling. Wade provides every client and project with a team of experienced professionals who are leaders and innovators in collection system evaluation, planning, design and construction management of improvements. We ensure our clients develop and implement the most cost-effective program for the sewer collection system to service wastewater flows to meet current and future laws, regulations, policies and guidelines. The most important resource our firm can offer a client is our staff and our experience.

Our Apologies!

Every effort was made to provide a complete, accurate list of company profiles. If for some reason your company was not included in this issue, please submit your profile and we will be happy to run it in the next issue of *Currently @ CUIRE*.