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DFI EDUCATIONAL TRUST

For Immediate Release

2010 Paper Competition Winners Announced

September 14, 2010, Hawthorne, NJ: The DFI Educational Trust announces the winners of its 2010 Paper Competitions. Each year papers are solicited from students and entry-level faculty members on topics relating to deep foundations design and construction.

The winner of the 2010 Student Paper Competition is Jeremy Kress who is pursuing an M.S. in civil engineering at North Carolina State University. His winning paper titled "*Analysis of Pile Behavior in Granular Soils using DEM"* will be published in the proceedings of DFI's 35th Annual Conference on Deep Foundations in Hollywood, Calif. where he will present his paper on October 13th. Jeremy received his B.S. in civil engineering from Lehigh University, Bethlehem, PA. He joined NCSU to conduct research supported by a NC Space Grant Program. His interests include discrete element method and other numerical modeling techniques. In his paper he proposes the discrete element method (DEM) as a complimentary alternative to analytical solutions and FEM models for the analysis of pile response. He goes on to state "DEM is a novel approach to the engineering design of deep foundations which can be used to provide insight into the mechanics of soil-soil and soil-structure interaction. It is common to use analytical, empirical, and semi-empirical methods to predict pile behavior, where if granular properties, pile length, or load orientation change, then significant adjustments are made in the design sequence. DEM provides a more uniform approach in granular soils." In conclusion he does state that "DEM simulations are not yet poised to supersede existing design methodologies, however they can provide an added level of information relative to traditional continuum approaches and, with increases in computing power, may one day serve to provide a simple, physics-based approach to pile design." Future research may include more complex deep foundation simulations (e.g. micropile, grouting, and soil reinforcement), where detailed soil response is largely unknown.

The winning paper for the 2010 Young Professor Paper Competition was submitted by Anne Lemnitzer, Assistant Professor in the Department of Civil Engineering at the California State University Fullerton. She received her BSCE from the University of Applied Sciences in Leipzig, Germany, a MASCE in Geotechnical Engineering as a Fulbright Scholar at CSU Long Beach and an MSCE and PhD in Structural/Earthquake Engineering from UCLA. Her research work focuses on soil-structure interaction of various bridge foundation systems; hence her winning paper is titled, *"Lateral Load Testing of Pile Foundations."* She serves as a reviewer for multiple geotechnical journals and conferences and is an active committee member of EERI and an associate member of ASCE. Her research interests include laboratory and field testing, bridge engineering and soil-foundation-structure interaction. She has elected to publish her paper in the *DFI Journal* rather than the conference proceedings but will be presenting her results of full-Scale cyclic field testing performed on a 3x3 pile group consisting of nine cast-in-drilled-hole (CIDH) reinforced concrete shafts and a comparable single-shaft in order to investigate group interaction effects, derive *p-y* curves for reinforced concrete fixed head piles and to validate currently available *p*-multiplier models at the conference on October 15th.

The student paper competition also provided an award to a runner-up, Arash Khosravifar, who is currently pursuing his PhD in geotechnical earthquake engineering at UC Davis after receiving his Bachelors and Masters in earthquake engineering from Sharif University of Technology in Tehran, Iran. His research there focused on seismic vulnerability of masonry buildings affected by Bam earthquake (2003). Now he is working under the supervision of Professor Ross Boulanger on soil-structure interaction of extended pile foundations in liquefiable grounds during earthquakes. He is being awarded for his paper titled, *"Inelastic Response of Extended Pile Shafts in Laterally Spreading Ground during Earthquakes"* at the Conference Awards Banquet on October 14th at the Renaissance Hollywood Hotel. It will be published in a future volume of the *DFI Journal* which is provided to all DFI members electronically as a member benefit or can be purchased by others.

The winners and runner-up receive complimentary conference registrations, a library of 20 DFI publications, and two-year complimentary DFI memberships. Winners of each competition additionally receive a $750 award and lodging during the conference.

To learn more about the upcoming conference, about DFI and the DFI Educational Trust activities, or to obtain a copy of the proceedings or the *DFI Journal*, please visit www.dfi.org or call 973-423-4030.