

Jeremy C. Ashlock
Assistant Professor
Department of Civil, Construction, and Environmental Engineering
Iowa State University
474 Town Engineering
Ames, Iowa 50011

PROFESSIONAL PREPARATION

University of Colorado at Boulder, BS Civil Engineering, 1997
University of Colorado at Boulder, MS Civil Engineering (Geotechnical), 2000
University of Colorado at Boulder, PhD Civil Engineering (Geotechnical), 2006
University of Colorado at Boulder, Post-Doctoral Fellow, 2007-2008

APPOINTMENTS

2009-present Assistant Professor, Iowa State University
2007-2008 Post-Doctoral Fellow, University of Colorado at Boulder

PUBLICATIONS

(i) Five publications most closely related to proposed project:

1. Lin, S. and Ashlock, J.C. (2011). "A Study on Issues Relating to Testing of Soils and Pavements by Surface Wave Methods", 38th Annual Review of Progress in Quantitative Nondestructive Evaluation (QNDE 2011), Burlington, VT, July 2011, American Institute of Physics, Melville, NY, 8 pp.
2. Ashlock, J.C. and Fotouhi, M.K. (2011). "Characterization of Dynamic Soil-Pile Interaction by Random Vibration Methods: Experimental Design and Preliminary Results", *Proc. 2011 NSF Engineering Research and Innovation Conference*, Atlanta, Georgia (CMMI Grantee Conference), 11 pp., January 2011.
3. Pak, R.Y.S., Ashlock J.C., Kurahashi S., and Abedzadeh, F. (2008). "Parametric Gmax Sounding of Granular Soils by Vibration Methods", *Géotechnique, ICE*, Vol. 58(7), 571-580.
4. Ashlock, J.C. and Pak, R.Y.S. (2010). "Application of Random Vibration Techniques to Resonant Column Testing", *Proc. ASCE GeoFlorida 2010 Conference*, Paper No. 750, 11 pp., February, 2010.
5. Ashlock, J.C. and Pak, R.Y.S. (2010). "Multi-modal Synthesis and Variable Modulus Effects in Resonant Column tests by Random Excitations", *Proc. 5th Int. Conf. on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics and Symposium in Honor of Professor I.M. Idriss*, San Diego, CA, Paper No. 1.31b, 9 pp., May, 2010.

(ii) Five other significant publications:

1. Pak, R.Y.S., Ashlock J.C., Kurahashi S., and Soudkhah, M. (2011). "Physical characteristics of dynamic vertical-horizontal-rocking response of surface foundations on cohesionless soils", *Géotechnique*, 61(8), 687-697. DOI: 10.1680/geot.8.P.072.
2. Ashlock, J.C. and Pak, R.Y.S. (2009). "Experimental Response of Piles in Sand under Compound Motion", *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, 135(6).
3. Pak, R.Y.S. and Ashlock, J.C. (2010). "A Fundamental Dual-Zone Continuum Theory for Dynamic Soil-Structure Interaction", *Earthquake Engineering and Structural Dynamics*. DOI: 10.1002/eqe.1075.
4. Pak, R.Y.S. and Ashlock, J.C. (2007). "Method of Adaptive Gradient Elements for Computational Mechanics", *ASCE Journal of Engineering Mechanics*, Vol. 133(1), 87-97.

5. Pak, R.Y.S. and Ashlock, J.C., Abedzadeh, F., and Turner, N. (2006). "Dynamic Hybrid-Mode Test of a Pile on a Centrifuge", *Physical Modeling in Geotechnics, 6th Int. Conf. on Physical Modeling in Geotechnics*, August 2006, 1037-1042.

SYNERGISTIC ACTIVITIES

1. Successfully developed new testing system for full-scale broadband vibration tests of piles by random vibration techniques and released NEES project data to public <http://nees.org/warehouse/project/940>.
2. ASTM International: Vice-chair of sub-committee D18.09 on Cyclic and Dynamic Properties of Soils and member of sub-committee D18.02 on Sampling and Related Field Testing for Soil Evaluation.
3. Developed a fully-automated Borehole Shear Test device and control/data acquisition program.
4. Peer reviewer for ASCE Journal of Engineering Mechanics, ASCE Journal of Geotechnical and Geoenvironmental Engineering, ASTM Geotechnical Testing Journal, ASTM Journal of Testing and Evaluation, International Journal for Numerical and Analytical Methods in Geomechanics, Soil Dynamics and Earthquake Engineering, various conferences.
5. Developed new course on dynamics of soils and foundations at Iowa State University.

COLLABORATORS & OTHER AFFILIATIONS

Collaborators:

Farzad Abedzadeh (Devine Tarbell & Associates, Inc., Charlotte, N.C.)
Scott Brandenburg (UCLA)
Joseph Coe (The Citadel)
Richard L. Handy (Handy Geotechnical Instruments, Inc.)
Satoshi Kurahashi (OYO Corp., Osaka Japan)
Ning Lu (Colorado School of Mines)
Ronald Y. S. Pak (CU Boulder)
Brent Phares (Iowa State University Institute for Transportation, Bridge Engineering Center)
Bethany Simmons (University of California, San Francisco)
Mahdi Soudkhah (CU Boulder)
Ned Turner (CU Boulder)
Chris Williams (Iowa State University)
Terry Wipf (Iowa State University Institute for Transportation, Bridge Engineering Center)

Graduate Advisor and Postdoctoral Sponsor:

Ronald Y. S. Pak (University of Colorado at Boulder)

Graduate Advisees and Current Affiliations (6 total, ISU=Iowa State University):

MS: Blake Rubino (U.S. Air Force), Jacob Phipps (Raker Rhodes Engineering), Anna Nadermann (Terracon Engineers), Theodore Bechtum (ISU).
PhD: Mohammad Fotouhi (ISU), Shibin Lin (ISU)