

## CURRICULUM VITA

RICHARD J. FINNO

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Department of Civil and Environmental Engineering  
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### EDUCATION

August 1983                      Ph.D. in Civil Engineering  
Stanford University, Stanford, CA.  
June 1976                        M.S.C.E. in Geotechnical Engineering  
Stanford University, Stanford, CA.  
May 1975                         B.S. in Civil Engineering  
University of Illinois, Urbana, IL.

### REGISTRATION

Professional Engineer, State of Illinois, 1979 (No. 062-037936)

### TEACHING POSITIONS

1995-present                      Professor of Civil Engineering, Northwestern University  
1993-1996                        James N. and Margie M. Krebs Professor, Northwestern University  
1989-1995                        Associate Professor of Civil Engineering, Northwestern University  
1986-1989                        Assistant Professor of Civil Engineering, Northwestern University  
1983-1986                        Assistant Professor of Civil Engineering, Illinois Institute of Technology  
1982-1983                        Teaching Fellow, Stanford University

### INDUSTRIAL EXPERIENCE

1981                                Woodward-Clyde Consultants, San Francisco, CA, Project Engineer  
1979-1980                        Woodward-Clyde Consultants, Chicago, IL, Assistant Project Engineer  
1976-1978                        Sargent & Lundy Engineers, Chicago, IL, Soil Engineer

### AWARDS

Thomas A. Middlebrooks Award, American Society of Civil Engineers, 2004  
Walter L. Huber Civil Engineering Research Prize, American Society of Civil Engineers, 1994  
Thomas A. Middlebrooks Award, American Society of Civil Engineers, 1993  
Arthur Casagrande Award, American Society of Civil Engineers, 1990  
Environment Award, W170 Committee, US EPA, 1990  
Tau Beta Pi Eminent Engineer, 1990

### CONSULTANT (major projects)

STV Ltd, 2004-2006, (Board of Consultants, Block 37 development in Chicago – subway tube connections)

Wiss, Janney, Elstner & Associates, Inc., Northbrook, IL 1989-2007 (investigations of damage to bridge and multi-story buildings)

Department of Transportation of the City of Chicago, 1999 (evaluation of design and construction of retention system)

A. Epstein & Sons International, Inc., 1999 (evaluation of MSE retaining wall failure)

Montgomery Watson, Sacramento, CA, 1998 (sunken shaft design)

Los Angeles MTA, 1994-1996, (provide peer review regarding distressed areas in subway tunnel)

under construction; investigate causes of tunnel collapse)

Ralph M. Parsons Co., Pasadena, CA, 1989, 1993-6, 2003-5 (investigation of excavation effects on adjacent pile-supported structure; slope instability evaluations; retaining wall studies; solute transport studies; foundation evaluation studies)

US Environmental Protection Agency, Washington, DC, 1989, member of Land Application Peer Review Committee, (scientific peer review of US EPA standards 40 CFR PART 503)

Harrison Western Corp., Denver, CO, 1986 (investigation of shaft failure)

## **AFFILIATIONS**

Member: Geo-Institute of ASCE  
American Society of Civil Engineers (ASCE), Illinois Section  
International Society of Soil Mechanics and Geotechnical Engineering (ISSMGE)  
US Universities Council on Geotechnical Engineering Research (USUCGER)

## **PROFESSIONAL COMMITTEES AND ACTIVITIES**

International: International Society of Soil Mechanics and Geotechnical Engineering

Member, Editorial Board, Acta Geotechnical, (2005-present)  
Member, Advisory Board, Italian Geotechnical Journal, (1998-present)  
Co-Chairman, U.S. National Society of ISSMFE paper review for Thirteenth International Conference of Soil Mechanics and Foundation Engineering, 1994

National: American Society of Civil Engineers

Editor, Journal of Geotechnical and Geoenvironmental Engineering, (2004-present)  
Chair, Awards Committee, Geo-Institute, ASCE, (2002-2005)  
Member, Technical Coordinating Council, Geo-Institute, ASCE (1996-1999)  
Board Member and Treasurer, USUCGER (1996-1999)  
Co-Chairman, 1996 Geotechnical Engineering Congress, Madison WI  
Chairman, Earth Retaining Structures Committee, Geotechnical Engineering Division (1994 -1998)  
Member, Earth Retaining Structures Committee, Geotechnical Engineering Division (1989-present)  
Member, Editorial Board, Journal of Geotechnical Engineering (1986-1997)  
Member, Soil Properties Committee, Geotechnical Engineering Division (1984-1988)

National Science Foundation

Member of proposal review panels for Geotechnical, Geoenvironmental and Geomechanical Systems and Earthquake Hazard Mitigation Programs

Chairman, Proposed Experiments/Uses Committee, NSF Workshop on Selection and Management of National U.S. Geotechnical Test Sites, 1991

Member of peer review team of NSF-sponsored Engineering Research Center at Texas A&M University, 1991 (Offshore Technology Research Center)

Proposal reviewer

U.S. Geological Survey

Proposal reviewer

Local: American Society of Civil Engineers

Geotechnical Engineering Division, Illinois Section  
Secretary/Treasurer, 1985-1986  
Vice Chairman, 1986-1987  
Chairman, 1987-1988  
Illinois Section, Board of Directors, 1987-1988 and 1991-1993

## RESEARCH ACTIVITIES

### Grants Awarded:

Northwestern "Cooperative Research: A Joint NU and UIUC Project for the Development of New Integrated Tools for Predicting, Monitoring, and Controlling Ground Movements due to Excavations," National Science Foundation, \$2,066,905 (2002-2007)

"Condition Monitoring of Urban Infrastructure," Infrastructure Technology Institute, \$293,887 (2006)

"Automated Deformation Monitoring," Infrastructure Technology Institute, \$169,363 (2004-2005)

"Nondestructive Evaluation of Concrete with Flexural Waves," Infrastructure Technology Institute, \$236,290 (2004-2005)

"Performance Monitoring and Condition Assessment of the Excavation and Support System for the Lurie Research Center," Facilities Management, Northwestern University, \$37,120 (2002)

"Allowable Deformations of Gas Mains Adjacent to Deep Excavations," Infrastructure Technology Institute, \$167,757 (2002-2003)

"Improved Conditioning Monitoring of Bridges: Non-destructive Evaluations of Foundations," Infrastructure Technology Institute, \$140,667 (2002-2003)

"Analysis of the Performance of the Chicago-State Subway Station and its Effects on Adjacent Structures," Infrastructure Technology Institute, \$187,561, (2001)

"Improved Conditioning Monitoring for Bridge Management: Non-destructive Evaluations of Existing Foundations," Infrastructure Technology Institute, \$88,311 (2001)

"Objective Updating of Design Predictions for Supported Excavations using Construction Monitoring Data," National Science Foundation, \$224,585 (2001-2004)

"In situ Nondestructive Evaluation of Concrete Piles," Naval Facilities Engineering Command, \$25,564 (2001)

"Improved Conditioning Monitoring for Bridge Management: Non-destructive Evaluations of Existing Foundations," Infrastructure Technology Institute, \$79,954 (2000)

"Computability of Material Instabilities – New Methods and Case Study," National Science Foundation, CMS-0085664, \$142,576, Co-principal investigator with T Belytschko (2000-2001)

"Evaluation of Capacity of Micropiles Embedded in Rock," Infrastructure Technology Institute, \$24,800 (2000-2001)

"Geotechnical Monitoring of Chicago-State Subway Station," Wiss, Janney, Elstner Associates, Inc., \$92,500 (1999-2001)

"Analysis of the Performance of the Chicago-State Subway Station and its Effects on Adjacent Structures," Infrastructure Technology Institute, \$113,904. 1999-2000

"Effects of Strain Localization on Fault Gouge Constitutive Relations," US Geological Survey, \$55,000 (1998)

"Progressive Failure in Overconsolidated Soils," National Science Foundation through subcontract with University of Colorado at Denver , \$44,000, (1998-1999)

"Effects of Strain Localization on Fault Gouge Constitutive Relations," US Geological Survey, 134-HQ-97-GR-03007, \$60,000 (1997)

"Research Equipment Proposal: Image Analysis of Internal Deformations during Shear," National Science Foundation, CMS-9610373, \$14,000 (1997)

"Support of US University Council on Geotechnical Engineering Research," National Science Foundation, CMS-9610357, \$55,000 (1997-2000)

"Innovative Techniques of Foundation Rehabilitation in Restricted Access Environments," Infrastructure Technology Institute, \$32,960 (1996-1997)

"Time Domain Reflectometry (TDR) Cable and Grout System to Telemetrically Monitor Soil Slope Stability," National Science Foundation Grant No. CMS-9523236, \$139,996, Co-principal investigator with CH Dowding (1995-1997)

"NDE of Drilled Shafts at NGES Site," Federal Highway Administration, \$24,938, (1995-1996)

"Improved Conditioning Monitoring for Bridge Management: Non-destructive Evaluations of Existing Foundations," Infrastructure Technology Institute," \$499,080, (1994-1999)

"Improved Conditioning Monitoring for Bridge Management: Task 4 Foundation Problems," Infrastructure Technology Institute," \$154,846, co-principal investigator with CH Dowding (1993)

"National Geotechnical Engineering Experimentation Site at Northwestern University," subcontract to University of New Hampshire as part of National Science Foundation Grant, \$76,000, (1992-1996)

"Experimental Evaluation of Reservoir Bottom Remediation Material: Ludington Pumped Storage Facility," Ebasco Services Inc., \$47,820, (1991-1992)

"Post Peak Behavior of Granular Soils and its Effect on Undrained Steady State Strength," National Science Foundation Grant No. BCS-9019755, \$160,064, (1991-1993)

"Soil Properties Measurements Using Oscillating Electro-Kinetic Counter Pressures," National Science Foundation Grant No. MSS-9023540, \$140,000, Co-principal investigator with J.R. Feldkamp (1991-93)

"Research Equipment for Geomechanics Testing," National Science Foundation, Grant No. MSM-8800796, \$45,000 (1988).

"Observation and Prediction of Field Behavior of an Embankment and a Braced Cut in University Clay, Evaluating the State-of-the-Art," National Science Foundation, Grant No. MSM-8796169, \$140,578, (1987-1989).

Illinois Inst. of Technology "Evaluation of Creep-Induced Effective Stress Changes of Clay," Engineering Foundation Research Initiation Grant RI-A-84-1, \$17,000, (1984).

Industry-Supported Activities:

Pile Prediction Symposium, 1989 Foundation Engineering Congress, Evanston, IL., Organized and directed detailed load test program. Three construction and six consulting firms donated construction, instrumentation, and in situ testing.

#### NSF-supported activities:

Participant in 2<sup>nd</sup> Japan-US Workshop on Testing, Modeling and Simulation in Geomechanics, Kyoto Japan, September 2005

Participant in Assisting and Encouraging Student Opportunities for Post-undergraduate Study (AESOPS) workshop, Washington D.C., May, 2002

Participant in U.S.-Taiwan Geotechnical Engineering Collaboration Workshop, Taipei, Taiwan, January, 1995.

Participant in U.S.-Scandinavian Workshop on Geotechnical Engineering Research Collaboration, Trondheim, Norway, June, 1994.

Reporter for working group in U.S.-France Workshop on Recent Advances in Geomechanical, Geotechnical and Geo-Environmental Engineering, Paris, France, June, 1992.

Reporter for working group on Prototype Testing and Behavior Prediction at the Workshop on Establishment of National Test Sites for Earthquake Engrg and Geotechnical Engrg. Research, 1988

Participant in France - U.S. CNRS-NSF Workshop on "Strain Localization and Size Effect Due to Cracking and Damage," Cachan, France, Sept., 1988.

Presented overview of on-going research program, "Case Histories in Geotechnical Engineering", at NSF MSME Solid and Geomechanics Program Review, Washington, D.C., March, 1988.

#### Laboratory Development

Secured funds and made operational servo-controlled testing devices including three triaxial, one direct simple shear and one kinematically unconstrained, heavily-instrumented plane strain compression apparatus in Northwestern University Geotechnical Engineering Laboratory; developed laboratory device to rapidly measure permeability of clays using alternating current electro-kinetics; added digital image analysis capabilities for mechanical testing of soils; incorporated bender elements and local strain gages to measure very small strains in triaxial device.

#### **PUBLICATIONS**

##### Books (editor)

Design and Construction of Earth Retaining Systems, Proceedings of sessions of Geo-Congress 98, sponsored by the Earth Retaining Structures Committee of the Geo-Institute, Boston, MA., R.J. Finno, Y. Hashash, C.L. Ho, and B.P. Sweeney, eds., Geotechnical Specialty Publication No. 83, 1998, 176 p.

Serviceability of Earth Retaining Structures, Proceedings of sessions sponsored by the Geotechnical Engineering Division in conjunction with the ASCE National Convention, Atlanta, Georgia, October, R.J. Finno, Ed., Geotechnical Special Publication No. 42, 1994, 157 p.

Predicted and Observed Axial Behavior of Piles, Results of a Pile Prediction Symposium, Proceedings of the Pile Prediction Symposium, ASCE, held at the Foundation Engineering Congress, Northwestern University, Evanston, IL, R. J. Finno, Ed., Geotechnical Special Publication, 1989, 385 p.

##### Book Chapters

Krizek, R.J. and Finno, R.J., "Buried Conduits," Structural Engineering Handbook, Third Edition, McGraw-Hill, New York, NY, 1996, pp. 29:1-29:41.

#### Refereed Journal Papers

Cho, W., Holman, T.P., Jung, Y.-H. and Finno, R.J., "Effects of Swelling during Saturation in Triaxial Tests in Clays," *Geotechnical Testing Journal*, ASTM, accepted for publication.

Jung, Y.-H., Cho, W. and Finno, R.J., "Defining Yielding from Bender Element Measurements in Triaxial Stress Probe Experiments," *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, accepted for publication.

Finno, R.J., Blackburn, J.T. and Roboski, J.F., "Three-dimensional Effects for Supported Excavations in Clay," *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, Vol. 133, No. 1, January, 2007.

Roboski, J.F. and Finno, R.J., "Distributions of Ground Movements Parallel to Deep Excavations," *Canadian Geotechnical Journal*, Vol. 43 (1), 2006, 43-58.

Finno, R.J., Voss, F.T., Jr., Rossow, E., and Blackburn, J.T., "Evaluating Damage Potential in Buildings Affected by Excavations," *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, Vol. 131, No. 10, October, 2005, 1119-2100.

Finno, R.J. and Chao, H.-C., "Shear Wave Velocity in Concrete Cylinders (Piles): the Universal Mode Method," *ACI Materials Journal*, ACI International, Vol. 102, No. 3, 2005, 154-162.

Finno, R.J. and Calvello, M., "Supported Excavations: the Observational Method and Inverse Modeling," *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, Vol. 131, No. 7, July, 2005, 826-836.

Finno, R.J. and Roboski, J.F., "Three-dimensional Responses of a Tied-back Excavation through Clay," *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, Vol. 131, No. 3, March, 2005, 273-282.

Finno, R.J. and Chao, H.-C., "Guided Waves in Embedded Concrete Piles," *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, Vol. 131, No. 1 January, 2005, 11-19.

Calvello, M. and Finno, R.J., "Selecting Parameters to Optimize in Model Calibration by Inverse Analysis," *Computers and Geotechnics*, Elsevier, Vol. 31, 5, 2004, 411-425.

Jung, Y.-H, Chung, C-K, and Finno, R.J., "Development of Nonlinear Cross-anisotropic Model for the Pre-failure Deformation of Geomaterials," *Computers and Geotechnics*, Elsevier, Vol. 31, 2004, 89-102.

Rechenmacher, A. and Finno, R.J., "Digital Image Correlation to Evaluate Shear Banding in Dilative Sands," *Geotechnical Testing Journal*, ASTM, Vol. 27, No.1, 2004, p. 13-22

Calvello, M. and Finno, R.J., "Modeling Excavations in Urban Areas: Effects of Past Activities," *Italian Geotechnical Journal*, Vol. 37, No. 4, p. 9-23, 2003, 9-23.

Finno, R.J. and Rechenmacher, A., "Effects of Consolidation History on Critical State of Sand," *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, Vol. 129, No. 4, April, 2003, 350-360.

Finno, R.J., Bryson, S. and Calvello, M., "Performance of a Stiff Support System in Soft Clay," *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, *Journal of Geotechnical and Geoenvironmental Engineering*, Vol. 128, No. 8, August, 2002, p. 660-671.

Finno, R.J. and Bryson, L.S., "Response of Building Adjacent to Stiff Excavation Support System in Soft Clay," *Journal of Performance of Constructed Facilities*, ASCE, Vol. 16, No. 1, February, 2002, p. 10-20.

Finno, R.J., Popovics, J.S., Hanifah, A.A., Kath, W.L., Chao, H.-C., and Hu, Y.-H., "Guided Wave Interpretation of Surface Reflection Techniques for Deep Foundations," *Italian Geotechnical Journal*, Vol. 34 (1), 2001, p. 76-91.

Gassman, S.L. and Finno, R.J., "Cutoff Frequencies for Impulse Response Tests of Existing Foundations," *Journal of Performance of Constructed Facilities*, ASCE, Vol. 14, No. 1, February, 2000, p. 11-21.

Gassman, S.L. and Finno, R.J. "Impulse Response Evaluation of Foundations using Multiple Geophones," *Journal of Performance of Constructed Facilities*, ASCE, May, 1999, pp. 82-89.

Finno, R.J. and Gassman, S.L., "Impulse Response Evaluation of Drilled Shafts," *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, Vol. 124, No. 10, October, 1998, pp. 965-975.

Mooney, M.A., Finno, R.J. and Viggiani, G., "A Unique Critical State for Sand?" *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, Vol. 124, No. 11, November, 1998, pp. 1100-1108.

Mooney, M.A., Viggiani, G., and Finno, R.J., "Quantification of Shear Band Deformation in Granular Media," *Journal of Engineering Mechanics*, ASCE, June, 1997, 577-585.

Finno, R.J., Harris, W.W., Mooney, M.A., and Viggiani, G., "Shear Bands in Plane Strain Compression of Loose Sand," *Geotechnique*, Vol 47 (1), March, 1997, 149-165.

Finno, R.J., Harris, W.W., Mooney, M.A., and Viggiani, G., "Strain Localization and Undrained Steady State of Sand," *Journal of Geotechnical Engineering*, ASCE, Vol. 122, No. 6, 1996, pp. 462-473.

Harris, W.W., Viggiani, G., Mooney, M., and Finno, R.J., "Use of Stereophotogrammetry to Analyze Development of Shear Bands in Sand," *Geotechnical Testing Journal*, ASTM, Vol. 18, No. 4, 1995, pp. 405-420.

Yin, J., Finno, R.J., Feldkamp, J.R., and Chung, K., "Coefficient of Permeability from A/C Electro-Osmosis Experiments: Theory," *Journal of Geotechnical Engineering*, ASCE, Vol. 122, No. 5, 1996, 346-354.

Finno, R.J., Chung, K., Yin, J., and Feldkamp, J.R., "Coefficient of Permeability from A/C Electro-Osmosis Experiments: Results," *Journal of Geotechnical Engineering*, ASCE, Vol. 122, No. 5, 1996, 355-364.

Sabatini, P.J. and Finno, R.J., "Effect of Consolidation on Strain Localization of Soft Clays," *Computers and Geotechnics*, 18 (4), 1996, 311-339.

Yin, J., Feldkamp, J.R., Chung, K.Y., and Finno, R.J., "Electro-osmotic Pore Pressures in Soil due to an Alternating Electrical Field," *Transport in Porous Media*, 1995.

Gnanapragasam, N., Lewis, B.G. and Finno, R.J., "Microstructural Changes in Bentonite-Sand Soils when Exposed to Aniline," *Journal of Geotechnical Engineering*, ASCE, Vol. 121, No. 2, Feb., 1995, 119-125.

Rhee, Y. and Finno, R.J., "Consolidation, Pre- and Post-Peak Data from Internally Instrumented Plane Strain Compression Apparatus," *Geotechnical Testing Journal*, ASTM, Dec., 1993.

Finno, R.J., "Analytical Interpretation of Dilatometer Penetration Through Saturated Cohesive Soils," *Geotechnique*, Vol. 43, No. 2, June, 1993, 241-254.

Chung, C.-K. and Finno, R.J., "Influence of Depositional Processes on the Geotechnical Parameters of Chicago Glacial Clays," *Engineering Geology*, 32, 1992, 225-242.

Finno, R.J., and Chung, C.-K., "Stress-Strain-Strength Responses of Compressible Chicago Glacial Clays," *Journal of Geotechnical Engineering*, ASCE, Vol. 118, No. 10, October, 1992, 1607-1625.

Finno, R.J., Harahap, I.S., and Sabatini, P.J., "Analyses of Braced Excavations with Coupled Finite Element Formulation," *Computer and Geotechnics*, Vol. 12, No.2, 1991, 91-114.

Finno, R.J., and Harahap, I.S., "Finite Element Analyses of the HDR-4 Excavation," *Journal of Geotechnical Engineering*, ASCE, Vol. 117, No. 10, October, 1991, 1590-1609.

Finno, R.J., Lawrence, S.A., Allawh, N.F., and Harahap, I.S., "Analysis of Performance of Pile Groups Adjacent to a Deep Excavation," *Journal of Geotechnical Engineering*, ASCE, Vol. 117, No. 6, June, 1991, 934-955.

Finno, R.J., and Nerby, S.M., "Saturated Clay Response During Braced Cut Construction," *Journal of Geotechnical Engineering*, ASCE, Vol. 115, No. 8, August, 1989, 1065-1085.

Finno, R.J., Atmatzidis, D.K., and Perkins, S.B., "Observed Performance of a Deep Excavation in Clay," *Journal of Geotechnical Engineering*, ASCE, Vol. 115, No. 8, August, 1989, 1045-1064.

Finno, R.J., and Schubert, W.R., "Clay Liner Compatibility in Waste Disposal Practice," *Journal of Environmental Engineering*, ASCE, Vol. 112, No. 12, December, 1986, 1070-1084.

Finno, R.J., and Clough, G.W., "Evaluation of Soil Response to EPB Shield Tunneling," *Journal of Geotechnical Engineering*, ASCE, Vol. 111, No. 2, February, 1985, 155-173.

Clough, G.W., Sweeney, B.P., and Finno, R.J., "Measured Soil Response of EPB Shield Tunneling," *Journal of the Geotechnical Engineering Division*, ASCE, Vol. 109, No. 2, February, 1983, 131-149.

#### Refereed Conference Papers

Finno, R.J. and Rechea, C., "Lessons learned from case studies of excavation support systems through Chicago glacial clays," Numerical Modeling of Construction Processes in Geotechnical Engineering for Urban Environment, Proceedings, International conference of Construction Processes in Geotechnical Engineering for Urban Environment, Th. Triantafyllidis, ed., Bochum, Germany, March, 2006, Taylor & Francis, London, 35-46.

Holman, T., and Finno, R.J., "Maximum shear modulus and incrementally nonlinear soils," Proceedings, 16th International Conference on Soil Mechanics and Geotechnical Engineering," Osaka, Japan, 2005.

Blackburn, J.T., Sylvester, K. and Finno, R.J., "Observed bracing responses at the Ford Design Center excavation," Proceedings, 16th International Conference on Soil Mechanics and Geotechnical Engineering," Japan, 2005.

Finno, R.J., Alarcon, M.A., Mooney, M.A., and Viggiani, G., "Shear bands in plane strain active tests of moist tamped and pluviated sands," Proceedings, XIVth International Conference on Soil Mechanics and Foundation Engineering, Hamburg, Germany, 1997.

Harris, W.W. and Finno, R.J., "On the Laboratory Measurement of Time-dependent At-rest Earth Pressure Coefficient," Proceedings, XIIIth International Conference on Soil Mechanics and Foundation Engineering, New Delhi, India, 1993.

Kuppusamy, T., Clough, G.W., and Finno, R.J., "Finite Element Analysis of Cofferdam with Cell Interaction," Proceedings, XI International Conference of Soil Mechanics and Foundation Engineering, Vol. IV, San Francisco, CA, August, 1985, pp. 1973-1986.

#### Invited Papers

Finno, R.J., "Predicting damage to buildings from excavation-induced ground movements," Proceedings, GeoDenver 2007, New Peaks in Geotechnics, ASCE, Denver, CO, Feb. 2007.

Finno, R.J. and Xu, T. "Selected Topics in Numerical Simulation of Supported Excavations," Numerical Modeling of Construction Processes in Geotechnical Engineering for Urban Environment, keynote lecture at the International conference of Construction Processes in Geotechnical Engineering for Urban Environment, Th. Triantafyllidis, ed., Bochum, Germany, March, 2006, Taylor & Francis, London, 3-20.

Finno, R.J., Holman, T.P., Jung, Y-H., Cho, W.J. and Katkhuda, I., "Small Strain Responses of a Freshwater Glacial Clay," Proceedings, 2<sup>nd</sup> Japan-US Workshop on Testing, Modeling and Simulation in Geomechanics, Geotechnical Specialty Publication, SPT No. 143, Kyoto, Japan, 2005.



Finno, R.J. and O'Neill, M.W., "Summary of Discussion Session 2.2: Recent Developments in design and construction of pile foundations," Proceedings, 15<sup>th</sup> International Conference on Soil Mechanics and Geotechnical Engineering, Vol. 4, Istanbul Turkey, 2001

Finno, R.J., Gassman, S.L., and Calvello, M., "The NGES at Northwestern University," National Geotechnical Experimentation Sites, Geotechnical Specialty Publication 93, ASCE, J. Benoit and A. J. Luttenegger, eds., April, 2000, p. 130-159.

Finno, R.J. and Budyn, E.R., "Design Parameters for Drilled Shafts in Intermediate Geomaterials," Proceedings of the Second International Symposium on Hard Soils - Soft Rocks, Vol. 3, Naples, Italy, A. Evangelista and L. Picarelli, eds., A.A. Balkema, Rotterdam, Nov. 2000, 1499-1506.

Finno, R.J., Viggiani, G., Harris, W.W. and Mooney, M.A., "Localization of Strains in Plain Strain Compression of Sand," Proceedings, 4th International Workshop on Localization and Bifurcation Theory for Soils and Rocks, Balkema, Gifu, Japan, September, 1998.

Finno, R.J., Prommer, P.J. and Gassman, S., "Non-destructive Evaluation of Existing Deep Foundations," Proceedings, US/Taiwan Geotechnical Engineering Collaboration Workshop, Jan. 1995.

Viggiani, G., Finno, R.J., and Harris, W.W., "Experimental Observations of Strain Localisation in Plane Strain Compression of a Stiff Clay," Proceedings, 3rd International Workshop on Localisation and Bifurcation Theory for Soils and Rocks, Aussois, France, 1994.

Finno, R.J., "Deep Cuts and Ground Movements in Chicago Clays," Proceedings of the specialty session Excavation and Support for the Urban Infrastructure, ASCE, New York, NY, September, 1992

Finno, R.J., "Limitations of Predicting Deformations during Excavation in Soft Clay," Proceedings, Deep Foundations Institute Annual Meeting, Chicago, IL, October, 1991.

Finno, R.J., "Field Measurements of Strain Localization in Soft Clay," Strain Localization and Size Effect Due to Cracking and Damage, Elsevier Applied Science Publishers, Inc., 1988.

Clough, G.W., Finno, R.J., and Sweeney, B.P., "Ground Deformations Induced by an Earth Pressure Balance Shield in Silts and Clays," Tunneling Technology Newsletter, National Research Council, U.S. National Committee on Tunnel Technology, December, 1982.

#### Conference Proceedings Papers

Tu, X and Finno, R.J., "Modeling Shear and Volumetric Responses in Stress Probe Tests," Proceedings, GeoDenver 2007, New Peaks in Geotechnics, ASCE, Denver, CO, Feb., 2007.

Finno, R.J. and Hashash, Y.M.A., "Integrating Tools to Predict, Monitor and Control Deformation due to Excavations," Proceedings, GeoCongress 2006, Geotechnical Engineering in the Information Technology Age, ASCE, Atlanta GA, 2006

Blackburn, J.T. and Finno, R.J. "Representing internal bracing systems in 3-D models of deep excavations," Proceedings, GeoCongress 2006, Geotechnical Engineering in the Information Technology Age, ASCE, Atlanta GA, 2006

Finno, R.J. and Rechea, C. "Use of lateral movements and strut loads in inverse analysis of supported excavations," Proceedings, GeoCongress 2006, Geotechnical Engineering in the Information Technology Age, ASCE, Atlanta GA, 2006

Finno, R.J., Wang, H, and Lynch, J. "Flexural waves in nondestructive evaluation of drilled shafts," Proceedings, Conference on QA/QC and Verification for Drilled Shafts, Anchors and Micropiles, ADSC, Dallas, TX, 2005.

Hashash, Y.M.A. and Finno, R.J. "Development of new integrated tools for predicting, monitoring and controlling ground movements due to excavations," Proceedings, Underground Construction in Urban Environments, ASCE Metropolitan Section Geotechnical Group, New York, NY, 2005.

Finno, R.J. and Blackburn, J.T., "Automated monitoring of supported excavations," Proceedings, 13<sup>th</sup> Great Lakes Geotechnical and Geoenvironmental Conference, Geotechnical Applications for Transportation Infrastructure, GPP 3, ASCE, Milwaukee, WI., May, 2005, 1-12.

Hoffman, J., Roboski, J. and Finno, R.J., "Ground movements caused by caisson installation at the Lurie Excavation Project," Proceedings, Geotrans, 2004, ASCE, Los Angeles, CA, 2004, 1290-1289.

Glatt, J., Roboski, J. and Finno, R.J., "Sheetpile-induced vibrations at the Lurie Excavation Project," Proceedings, Geotrans, 2004, ASCE, Los Angeles, CA, 2004, 2130-2138.

Wang, H. and Finno, R.J., "A Modified Impulse Response Method to Evaluate Foundations of Overwater Structures," Proceedings, The 10<sup>th</sup> Taiwan Geotechnical Conference, Taipei County, Taiwan, Oct., 2003

Rechenmacher, A.L. and Finno, R.J., "Shear Band Displacements and Void Ratio Evolution to Critical state in Dilative Sands," Proceedings, International Workshop on Bifurcations and Instabilities in Geomechanics, J. Labuz and A. Drescher, eds., St. Johns University, Collegeville, MN, June 2-5, 193-206.

Calvello, M. and Finno, R.J., "Calibration of Soil Models by Inverse Analysis," Proceedings, International Symposium on Numerical Models in Geotechnical Engineering, NUMOG VIII, G.N. Pande and S. Pietruszczak eds., Rome, April, 2002, 107-114.

Finno, R.J., Scherer, S.D., Paineau, B. and Roboski, J., "Load Transfer Characteristics of Micropiles in Dolomite," Proceedings, International Deep Foundation Congress, ASCE, Orlando, FL., Feb., 2002.

Finno, R.J., Chao, H.-C., Gassman, S.L. and Zhou, P., "Non-destructive Evaluation of Drilled Shafts at the Amherst NGES Test Section," Proceedings, International Deep Foundation Congress, ASCE, Orlando, FL., Feb., 2002.

Gassman, S.L. and Finno, R.J., "Anomaly Detection in Drilled Shafts," Proceedings, National Geotechnical Experimentation Sites, Geotechnical Special Publication 93, ASCE, J. Benoit and A.J. Lutenegeger, eds., 2000, p. 221-234.

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Finno, R.J., and Chao, H.-S., "Nondestructive Evaluation of Drilled Shafts at the Central Artery/Tunnel Project, Proceedings, Structural Materials Technology IV: an NDT Conference, Atlantic City, New Jersey, Feb. 2000, 81-88.

Finno, R.J. and Gassman, S.L., "Limitations of Impulse Response Tests of Drilled Shafts," Proceedings, 6th Great Lakes Geotechnical and Geoenvironmental Conference, The Design and Construction of Drilled Deep Foundations, Indianapolis, IN, May 1998.

Finno, R.J. and Gassman, S.L. "Evaluation of Bridge Foundations by Impulse Response Methods," Proceedings, Structural Materials Technology Conference on Bridges and Highways, The International Society for Optical Engineering, San Antonio, TX, March, 1998.

Sabatini, P.J. and Finno, R.J. "Analysis of Localized Deformation in an Internally Braced Excavation," Proceedings, International Symposium on Deformation and Progressive Failure in Geomechanics, IS Nagoya 97, Nagoya, Japan, Elsevier Science, Ltd., Oxford, October, 1997.

Mooney, M.A., Viggiani, G. and Finno, R.J., "The Nature of Strain Softening Exhibited by Dense Sand," Proceedings, 6th International Conference of Plasticity and its Current Applications, A.S. Khan, ed., Juneau, Alaska, 1997.

Finno, R.J., Gassman, S.L., and Osborn, P.W., "Shear and Compressive Wave Velocities at the NGES at Northwestern University, Proceedings, 5th Great Lakes Geotechnical/ Geoenvironmental Conference on Site Characterization for Geotechnical and Geoenvironmental Problems, University of Michigan, Ann Arbor, MI, May 1997.

Finno, R.J., Gassman, S.L., and Prommer, P., "Effects of Intervening Structure on Impulse Response Signals," Proceedings, Fifth International Conference on the Application of Stress-Wave Theory to Piles, Orlando, FL, Sept, 1996, pp. 708-720.

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Yin, J. Finno, R.J., and Feldkamp, J.R., "Electro-Osmotic Mobility Measurement for Kaolinite Clay," Proceedings, Geoenvironment 2000, ASCE Specialty Conference, New Orleans, LA, 1995.

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Finno, R.J., Klein, G.J., and Sabatini, P.J., "Damage Evaluation of Building on Piers in Expansive Clays," Proceedings, Settlement 94, ASCE Specialty Conference on Geotechnical Engineering, College Station, Texas, 1994.

Finno, R.J., Riccobono, A.S., Ehasz, J., Cannon, R. Chung, C.-K., and Tandeles, N.K., "Experimental Evaluation of Reservoir Bottom Remediation Material," Proceedings, Geotechnical Practice in Dam Rehabilitation," L. Anderson, ed., ASCE, Raleigh, NC, April, 1993, pp. 740-754.

Finno, R.J. and Rhee, Y., "Kinematically Unconstrained Compression of Soft Clay," Proceedings, Stability and Performance of Slopes and Embankments - II, ASCE, University of California at Berkeley, June, 1992.

Finno, R.J., Benoit, J., and Chung, C.K., "Field and Laboratory Measured Values of  $K_0$  in Chicago Clays," Proceedings, Third International Symposium on Pressuremeters, Oxford University, 1990.

Finno, R.J., Achille, J., Chen, H-C, Cosmao, T., Park, J.B., Picard, J.-N., Smith, D.L., and Williams, G.P., "Summary of Pile Capacity Predictions and Comparison with Observed Behavior," Predicted and Observed Axial Behavior of Piles, Results of a Pile Prediction Symposium, ASCE, R.J. Finno, ed., 1989.

Finno, R.J., Cosmao, T., and Gitskin, B., "Results of Foundation Engineering Congress Pile Load Tests," Predicted and Observed Axial Behavior of Piles, Results of a Pile Prediction Symposium, ASCE, R.J. Finno, ed., 1989.

Finno, R.J., "Subsurface Conditions and Pile Installation Data: 1989 Foundation Engineering Congress Test Section," Predicted and Observed Axial Behavior of Piles, Results of a Pile Prediction Symposium, ASCE, R.J. Finno, ed., 1989.

Finno, R.J., Nerby, S.M., and Perkins, S.B., "Soil Parameters Implied by Braced Cut Behavior," Symposium on Soil Properties Evaluation from Centrifugal Models and Field Performance, ASCE, 1988, pp. 71-87.

Finno, R.J., and Krizek, R.J., "Evaluating Ground Response to Tunneling with F.E.M.," Proceedings, International Symposium on Tunneling for Water Resources and Power Projects, New Delhi, 1988.

Finno, R.J., Atmatzidis, D.K., and Nerby, S.M., "Ground Response to Sheet-pile Installation in Clay," Proceedings, Second International Conference on Case Histories in Geotechnical Engineering, St. Louis, MO, 1988.

Clough, G.W., Shirasuna, T., and Finno, R.J., "Finite Element Analysis of Advanced Shield Tunneling in Soils," 5th International Conference of Numerical Methods in Geomechanics, Nagoya, Japan, April, 1985.

Clough, G.W., Finno, R.J., and Shirasuna, T., "Observed and Predicted Ground Deformation due to Earth Pressure Balance Shield Tunneling through San Francisco Bay Mud," Proceedings, Japan Symposium on Effect of Shield Tunneling on Surrounding Ground, Nov., 1984 (in Japanese).

Schubert, W., Harrington, T., and Finno, R.J., "Glacial Clay Liners in Waste Disposal Practice," Proceedings, Specialty Conference on Environmental Engineering, ASCE, Los Angeles, CA, June, 1984, pp. 36-41.

Holloway, D.M., Moriwaki, Y., Finno, R.J., and Green, R.K., "Lateral Load Response of a Pile Group in Sand," Proceedings, 2nd International Conf. on Numerical Methods in Offshore Piling, Austin, TX, April, 1982, pp. 441-456.

## Reports

Molnar, K.M., Finno, R.J., and Rossow, E.C., "Analysis of Effects of Deep Braced Excavations on Adjacent Buried Pipelines," Final Report to the Infrastructure Technology Institute, December, 2003, Northwestern University, 158 pp.

Finno, R.J. and Voss, F., "Evaluating Damage Potential in Buildings Affected by Excavations," Final Report to the Infrastructure Technology Institute, December, 2002, Northwestern University, 166 pp.

Finno, R.J. Calvello, M., and Bryson, S.L., "Analysis and Performance of the Excavation for the Chicago-State Subway Renovation Project and its Effects on Adjacent Structures," Final Report to the Infrastructure Technology Institute, September, 2002, Northwestern University, 347 pp.

Finno, R.J., "Evaluation of Capacity of Micropiles Embedded in Dolomite," Final Report to the Infrastructure Technology Institute, Northwestern University, September 2002, 79 pp.

Finno, R.J. and Bryson, S.L., "Performance of the Excavation for the Chicago-State Subway Renovation Project and Response of the Adjacent Frances Xavier Warde School," Dep't. of Civil Engineering Report No. CEE-2002-1, September, 2002, Northwestern University, 287 pp.

Finno, R.J., Chou, H.-C. and Lynch, J., "Non-Destructive Evaluation of *In situ* Concrete Piles at the Advanced Waterfront Technology Test Site, Port Hueneme, California," Final Report, Naval Facilities Engineering Service Center, Washington, D.C., October 2001, 52 pp.

Finno, R.J., Gassman, S.L. and Osborn, P.W., "Non-Destructive Evaluation of a Deep Foundation Test Section at the Northwestern University National Geotechnical Experimentation Site," Final Report, Federal Highway Administration, Contract DTFH61-95-P-0816, June 1997, 336 pp.

Finno, R.J., Klein G.J., and Hill, H., "Metro Red Line, Segment 2, Contract B251, Investigation of Tunnel Collapse and Sinkhole," report for the Los Angeles County Metropolitan Transportation Authority, Oct., 1995.

Klein, G.J., Finno, R.J., Fiero, E.A., Kristie, R.J., Johnson, A.P., and Shotwell, L.B., "Metro Red Line, Segment 2, Contract B251, Structural Investigation of Wood Wedge Expansion Gap System," report for the Los Angeles County Metropolitan Transportation Authority, Dec., 1994.

Finno, R.J., "Experimental Evaluation of Reservoir Bottom Remediation Materials: Ludington Pumped Storage Facility, Report to Ebasco Services Inc., Greensboro, NC, January, 1992

Finno, R.J., "Final Report: Effects of LCC Vault Construction on Main Column Pile Groups, CBI Nuclear Building, President's Island Tennessee, Report to The Ralph M. Parsons Company, Pasadena, CA, January, 1990

Finno, R.J., and Gausseres, R.F., "Measurement of Creep-Induced Effective Stress Changes of Kaolinite," Report prepared for the Engineering Foundation, Illinois Institute of Technology, Chicago, IL, June, 1986.

Finno, R.J., "Response of Cohesive Soil to Advanced Shield Tunneling," Ph.D. Dissertation, Stanford University, Stanford, CA, August, 1983.

Clough, G.W., Finno, R.J., Sweeney, P.B., and Kavazanjian, E., "Development of a Design Technology for Ground Support for Tunnels in Soil, Volume III, Observed Behavior of an Earth Pressure Balance Shield in San Francisco Bay Mud," Report prepared for the U.S. Department of Transportation, Stanford University, June, 1982.

Woodward, R.J., Finno, R.J. and Baker, G.L., "Geotechnical Evaluation of Subsurface Conditions at Conservation Services Inc., Disposal Facility," prepared for Waste Management, Inc., Oak Brook, IL, February, 1980.

Woodward, R.J., and Finno, R.J., "International Pollution Control, Inc., Site Geotechnical Evaluation," prepared for Chemical Waste Management, Inc., Houston, TX, November, 1979.

Woodward, R.J., and Finno, R.J., "Geotechnical Evaluation of Lowry Landfill," prepared for Chemical Waste Management, Inc., Long Beach, CA, October, 1979.

Woodward, R.J., and Finno, R.J., "Geotechnical Evaluation of Waste Disposal Site at Carlyss, Louisiana, Phase I Report," prepared for Waste Management Inc., Oak Brook, IL, June 1979.

Woodward, R.J., and Finno, R.J., "Slurry Trench Evaluation, Waste Disposal Site at Carlyss, Louisiana, Phase II Report," prepared for Waste Management, Inc., Oak Brook, IL, June, 1979.

### **INVITED LECTURES AND PAPER PRESENTATIONS**

Tempe, AZ, Arizona State University., "Adaptive Management of Excavation-induced Ground Movements: automating the observational approach," November 2006.

Seattle, Washington, Seattle University, "Excavation Support in Urban Environments," October 2006.

Washington, D.C., Schnabel Foundation Company, "Predicting and Measuring Responses of Supported Excavations," September 2006.

Chicago, Il. , Illinois Section ASCE, Geotechnical Group, "Assessing the effects of excavation-induced ground movements on adjacent buildings," September 2006.

Chicago, IL, Combined Chicago Geotechnical Lectures Series and 14<sup>th</sup> Annual Great Lakes Geotechnical and Geoenvironmental Conference, "Inverse Analysis to Update Deformation Predictions for Braced Excavations," May 2006.

Bochum, Germany, (keynote lecture) International conference of Construction Processes in Geotechnical Engineering for Urban Environment, "Selected Topics in Numerical Simulation of Supported Excavations," March, 2006.

Bochum, Germany, International conference of Construction Processes in Geotechnical Engineering for Urban Environment, "Lessons learned from case studies of excavation support systems through Chicago glacial clays," March, 2006

New York, NY, 31<sup>st</sup> Kapp Lecture, ASCE Metropolitan Section, "Developments in the Observational Approach for Controlling Excavation-induced Ground Movements, December 2005.

Rensselaer Polytechnic Institute, Rensselaer, NY, "Automating the Observational Approach for Controlling Excavation-induced Ground Movements," October 2005.

Kyoto, Japan, US-Japan Workshop on Testing, Modeling and Simulation in Geomechanics, "Small Strain Responses of a Freshwater Glacial Clay," September, 2005.

Osaka, Japan, 16<sup>th</sup> International Conference on Soil Mechanics and Geotechnical Engineering, "Maximum shear modulus and incrementally nonlinear soils," September, 2005.

Osaka, Japan, 16<sup>th</sup> International Conference on Soil Mechanics and Geotechnical Engineering, "Observed bracing responses at the Ford Design Center excavation," September, 2005.

Colorado School of Mines, Golden, CO, "Predicting, Monitoring and Controlling Ground Movements caused by Deep Excavations," May 2005

Great Lakes Geotechnical and Geoenvironmental Conference, Milwaukee, WI, "Automated Monitoring of Supported Excavations," May 2005

Association of Engineering Geologists, Chicago, IL., "Lessons learned from performance monitoring of supported excavations in Chicago," May 2005

Midwest Bridge Working Group, Chicago, IL., "Ground Movements Associated with Deep Excavations," May 2004.

Seattle, Washington, ASCE Seattle Geotechnical Group, "Lessons Learned from Performance of Excavation Support Systems in Soft Clays," January 2004.

University of Washington, "Updating Predictions of Performance of Supported Excavations," January 2004.

Delft, Netherlands, "Development of new integrated tools for predicting, monitoring and controlling ground movements due to excavations," April 2003

Johns Hopkins University, "Prediction and Performance of the Excavation for the Chicago-State Subway Renovation," March 2003

Purdue University, "Prediction and Performance of Deep Excavations," October 2002

Seoul, Korea, Seoul National University, "Prediction and Performance of the Excavation for the Chicago-State Subway Station Renovation," July 2002

Seoul, Korea, Yonsei University, "Performance of a Stiff Support System in Soft Clay," July 2002

Seoul, Korea, Hanyang University, "Guided Wave Interpretation of Surface Reflection Techniques for Deep Foundations," July 2002

Atlanta, GA, Invited lecture at the Sowers Symposium, "Prediction and Performance of the Excavation for the Chicago-State Subway Station Renovation," May 2002

Chicago, IL, Illinois Section of ASCE, "Ground Movements Associated with Supported Excavations: Prediction and Update Based on Field Performance Data" April, 2002

Minneapolis, MN, University of Minnesota, "Effects of Excavation-Induced Ground Movements on Adjacent Structures," June 2001

Chicago, IL, TCDI- Hayward Baker Ground Modification Seminar, "Performance of the Chicago Avenue -State Street Subway Renovation Excavation," May 2001

St. Paul, MN, TCDI- Hayward Baker Ground, Modification Seminar, "Performance of the Chicago Avenue -State Street Subway Renovation Excavation," May 2001

Chicago, IL, Illinois Section of ASCE, "Performance of the Excavation for the Chicago-State Subway Renovation," February 2001

Chicago, IL., University of Illinois, "Evaluating Movements associated with Supported Excavations," February 2001

Amherst, MA, Performance Confirmation of Constructed Geotechnical Facilities, Geo-Institute Specialty Conference, ASCE, "The National Geotechnical Experimentation Site at Northwestern University," April 2000

Madison, WI, Nondestructive Evaluation of Bridge Conditions Short Course, "Nondestructive Evaluation of Existing Deep Foundations," December 1999

Urbana, IL, Third National Conference of the GeoInstitute, ASCE, "Summary of Current Research, " Workshop on Research Needs and Opportunities for Urban Underground Facilities, June 1999.

Green Bay, WI, ITI Bridge NDE Users Group Meeting, "Non-destructive Evaluation of Deep Foundations," April 1999.

Newport, RI, US University Council on Geotechnical Engineering Research Workshop, "The National Geotechnical Experimentation Site at Northwestern University," November 1998.

Naples, Italy, Second International Symposium on Hard Soils - Soft Rocks, "Design Parameters for Drilled Shafts in Intermediate Geomaterials," October 1998

Indianapolis, IN., Sixth Great Lakes Geotechnical/Geoenvironmental Conference, "Limitations of Impulse Response Tests of Drilled Shafts," May 1998

Madison, WI, Nondestructive Evaluation of Bridge Conditions Short course, "Nondestructive Evaluation of Existing Deep Foundations," December 1997

Chicago, IL, Illinois Section of ASCE, "Forensic Evaluation and Repair of Damaged Columns in Building Constructed in Expansive Clays," November 1997

Chicago, IL, Fifth Great Lakes Geotechnical/Geoenvironmental Conference, "Shear and Compression Wave Velocities at the NGES at Northwestern University," May 1997

Washington DC, ASCE Annual Convention, "Lateral Earth Pressures for Supported Excavations," October, 1996

Absecon, N.J., Fourth ITI Bridge NDE Users Group Conference, "Nondestructive Evaluation of Existing Foundations" November, 1995

San Diego, CA, Structural Materials Technology NDE Conference, "Impulse Response Evaluation of Drilled Shafts", March, 1995

Northbrook, IL, Wiss, Janney, Elstner Associates, Inc. Technical Symposium, "Effects of Tunneling Procedures on Ground Movements and Liner Loads," February, 1995

Chicago, IL., Illinois Section ASCE Geotechnical Group, "Effects of Hydrocompression at Twin Tunnels," February 1995

Washington, D.C., Transportation Research Board Annual Meeting, "National Geotechnical Experimentation Site at Northwestern University," January 1995

SIMECSOL, Le Plessis Robinson, France, "Ground Movements During Construction of a Braced Excavation in Clay," June 1994

Texas Tech University, Lubbock, Texas, "Finite Elements in Geotechnics: Elegance versus Practicality, an Overview of Three Case Studies," April 1994

University of Rome "La Sapienza", Rome, Italy, "Evaluation of the State of the Art of Braced Excavations in Soft Clay," November, 1993

Minneapolis, MN, Fortieth Annual Geotechnical Engineering Conference, "Limitations of the Accuracy of Deformation Predictions in Soft Clay," 1992

Purdue University, West Lafayette, IN., "Limitations of Predicting Deformations during Excavation in Soft Clay," 1992

Chicago, IL, Deep Foundations Institute Annual Meeting, "Limitations of Predicting Deformations during Excavations in Soft Clay," 1991

Foundation Engineering Congress, Evanston, "Overview of Pile Capacity Prediction Event," 1989

Foundation Engineering Congress, Evanston, " Results of Axial Load Tests and Evaluation of Predictions," 1989

Nashville, Tennessee, ASCE National Convention, "Soil Parameters Implied by Braced Cut Observations," 1988

Paris, France, NSF Workshop on Strain Localization and Damage, "Field Observations of Strain Localization in Soft Clay," 1988

University of California, Berkeley, "Finite Element Analyses of EPB Shield Tunneling," 1985

University of Illinois, Urbana, "Analyses of Deformations Associated with Advanced Shield Tunneling," 1983

Johns Hopkins University, "Controlling Deformations with Earth Pressure Balance Shield Tunneling," 1982

### **GRADUATE STUDENT SUPERVISION**

#### Ph.D.

R.F. Gausseres, "Generalized Time-Dependent Behavior of Clays Consolidated Under Different Stress Ratios," May 1988 (Illinois Institute of Technology)

I.S. Harahap, "Numerical Evaluation of the Performance of the HDR-4 Excavation," August, 1990

C.K. Chung, "Laboratory Investigation of Stress-Strain-Strength Behavior of Compressible Chicago Glacial Clay Tills" June, 1991

Y.H. Rhee, "Laboratory Investigation of Strain Localization in Soft Clay" December, 1991

M. Mahmoud, "Evaluation of Dilatometer Penetration in Saturated Clays," December, 1991

Nirmala Gnanapragasm, "Degradation of Bentonite by Selected Organic Solvents" (co-advisor with BA Lewis) December 1993

K.Y. Chung, "Coefficients of Consolidation and Permeability by Alternating Current Electro-osmosis Tests" December 1993

J. Yin, "Theoretical Evaluation of Coefficient of Permeability from Alternating Current Electro-Osmosis Experiments" December 1993

W.W. Harris, "Localization of Loose Granular Soils and its Effect on Undrained Steady State Strength Soils," June 1994

P.J. Sabatini, "Finite Element Analysis of Localized Deformation for a Normally Consolidated Clay," December 1994

M. A. Mooney, "An Experimental Study of Strain Localization and the Mechanical Behavior of Sand," June 1996

S. L. Gassman, "Nondestructive Evaluation of Deep Foundations," June 1997

A. Hanifah , "A Theoretical Evaluation of Guided Waves in Deep Foundations," June 1999



M.A. Alarcon, "Constitutive Modeling of Direct Measures of Strain in Simulated Fault Gouge," June 2000 (co-advise with John Rudnicki)

A.L. Rechenmacher, "Effects of Consolidation History and Shear Rate on the Critical State of Two Sands," December 2000.

L.S. Bryson, "Performance of Stiff Excavation Support Systems in Soft Clays and the Response of Adjacent Buildings," September 2002

M. Calvello, "Inverse Analysis of a Supported Excavation through Chicago Glacial Clays," September 2002

Hsiao-Chou Chao, "An Experimental Model for Pile Integrity Evaluation using a Guided Wave Approach," December 2002

Jill F. Roboski, "Three-dimensional Performance and Analyses of Deep Excavations," December 2004

Helsin Wang, "Theoretical Evaluations of Embedded Plate-like and Solid Cylindrical Concrete Structures with Guided Waves," 2004

James Lynch, "Experimental Evaluation of Concrete Piles subjected to Flexural Guided Waves," 2007

Terence P. Holman, "Small strain behavior of compressible Chicago glacial clay," 2005

J. Tanner Blackburn, "Automated remote sensing and three-dimensional analysis of internally braced excavations," 2005.

Cecilia Rechea Bernal, "Inverse analysis of excavations in urban environments," 2006.

X. Tu, "An incrementally non-linear model for clays with directional stiffness and a small strain emphasis," 2007

#### Post-Doctoral Fellows

C.-K. Chung (1991-1992)  
Y.H. Rhee (1991-1992)  
G. Viggiani (1994-1995)  
A. Alarcon (2000-2001)  
H.C-Chou (2002-2003)  
Y. H. Jung (2005-2007)

#### M.S.

W.R. Shubert, "Chemical Compatibility of Clay Liners in Waste Disposal Practice," May, 1985 (Illinois Institute of Technology)

M-A Kamel, "Evaluation of Design Pressures for Shaft Construction Through Sands," June, 1988

S.B. Perkins, "Observed Performance of a Deep Braced Cut in Clay," June 1988

S.M. Nerby, "Analysis of Field Observations of a Braced Excavation Through Clay," June 1988

L. Smith, "Performance of an Automated Research Engineering Direct Simple Shear Device," Dec. 1989

T. Cosmao, "Analyses of Axial Load Tests of Four Piles," December, 1989

B. Gitskin, "Axial Load Tests of Four Piles: Procedures and Results," June, 1990

J. Merl, "Development of Experimental Setup and Procedures for Constant Head Hydraulic Conductivity Testing with Hazardous Permeants," December, 1990

C. Bonczkiewicz, "Evaluation of Soil-Reinforcement Parameters by Large Scale Pullout Test," June 1991

W.W. Harris, "Evaluation of Time-Dependent Behavior of Clays Under  $K_0$  conditions" December, 1991

P.A. Sabitini, "Effects of Sheet-pile Installation on Computed Response of Braced Excavations in Soft to Medium Clay," December, 1991

N. Tandeles, "Experimental Evaluation of Silts as Filter Protected Soils Based on Permeability and Piping Potential," December 1992

W.M. Sabra, "Non-Destructive Evaluation of Foundations and Soil Parameters," Dec., 1992

N.A. Stiber, "Undrained Steady State Strength of Fine Sands under Axisymmetric Conditions," December 1992

M. Berrebi, "Review of Failure Mechanisms in Stiff Overconsolidated Clays" December 1993

C. Pierce, "Evaluation of Flow Rules for Chicago Glacial Clays in Compression" December 1993

S. Gassman, "Undrained Steady State Shear Strength and Instabilities of Fine Sands," June 1994

P. Prommer, "Non-destructive Evaluations of Existing Deep Foundations," December 1994

M. Bauer, "Measurement of the Coefficient of Permeability of Clay Soils using Alternating Current Electroosmosis," December 1995

A. Shaer, "Strain behavior of sand specimens in the presence of shear bands," December 1996

R. Austin, "Earth pressures from clayey backfills," June 1997

P. Osborne, "Parallel Seismic Evaluation of the NDE test section at the NU NGES," December 1997

C. Orozco, "Evaluation of Compaction Grouted Minipiles at the NU NGES," December 1997

P. Champy, "Cross Hole Sonic Logging Evaluation of Drilled Shafts at the NGES," December 1997

E. Budyn, "The Design of Drilled Shafts in Intermediate Geomaterials: A Review," December 1997

K. Kawamura, "Hardening Soil Parameters for Compressible Chicago Glacial Clays," December 1999

Y.-H. Hu, "Interpretation of Impulse Response Test using a Guided Wave Approach," December 1999

D.J. Priest, "Analysis of Mechanically Stabilized Earth Retaining Wall with Clay Backfill," December 2000

B. Paineau, "Evaluation of Capacity of Micropiles in Rock," December 2000

J. Roboski, "Development of Soil Parameters for Constitutive Modeling of Compressible Chicago Glacial Clays, June 2001

F. Voss, "Evaluating Damage Potential in Buildings Affected by Excavations," June 2003

K.M. Molnar, "Analysis of effects of Deep Braced excavations on Adjacent Buried Pipelines," June 2003

X. Tu, "Observations and Calculation of Creep Movements of Supported excavations in Chicago Clays," December 2003

G.E. Andrianis, "Excavation-induced Strains and Cantilever Deflections in Compressible Clays," June 2006

L.B. Erickson, "Plane Strain Responses of Compressible Chicago Clay," June 2006

A. Morgan, "A Parametric Study of a Supported Excavation and Tunnel Connection through Chicago Glacial Clays," June 2006

Current Advising 4 Ph.D. students, 2MS students

#### **UNIVERSITY COMMITTEES AND ACTIVITIES:**

##### ILLINOIS INSTITUTE OF TECHNOLOGY: (1983-1986)

<u>University:</u>	Graduate Study Committee
<u>Civil Engineering Department:</u>	Department Coordinator, responsible for scheduling all department classes, advising graduate students and coordinating groups' activities Secretary, Faculty Meetings Arranged Geotechnical Graduate Seminars

##### Semester Courses Taught:

Graduate:	Mechanical Behavior of Soils Advanced Soil Mechanics Rock Mechanics Numerical Methods in Geotechnical Engineering Design of Embankments and Earth Structures Tunnels and Underground Structures
Undergraduate:	Engineering Geology Introduction to Geotechnical Engineering

##### NORTHWESTERN UNIVERSITY: (1986-present)

<u>University:</u>	Committee on Athletics and Recreation member (1993-1999) GFC Subcommittee on Research Affairs member (1993-1996) Selection committee member for McCormick Professors and University Distinguished Lectureship (1994)
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<u>McCormick School:</u>	Freshman Advisor (1987-1997)
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Committee on our Future member (1993-1994, 1997-1998)  
Promotion and Tenure committee (1997-1999)

Civil Engineering  
Department:

Secretary, Department Faculty Meetings (1986-1992)  
Geotechnical Admissions Correspondent  
Undergraduate Advisor (1998-present)  
Research Committee member (1990-present)  
Executive Committee (1995-1997)  
Chair, Curriculum Committee (2006-present)

Courses Taught:

Undergraduate:

Foundation Engineering  
Introductory Soil Mechanics  
Engineering Properties of Soils

Graduate:

Soil Mechanics I – Mechanical Properties of Soils  
Soil Mechanics II – Foundation Engineering  
Soil Mechanics III – Earth Structures and Slope Stability  
Soil Rheology – Constitutive Properties of Soils  
Underground Construction  
Soil Dynamics  
Environmental Geotechnics  
Engineering Properties of Soils  
Graduate Seminar in Geotechnical Engineering