

T. Matthew Evans, Ph.D.
Associate Professor
School of Civil and Construction Engineering
Oregon State University

I. EDUCATION

Ph.D. (Civil Engineering)	2005	Georgia Institute of Technology
M.S. (Civil Engineering)	2002	Georgia Institute of Technology
B.S. (Civil Engineering)	1997	University of New Mexico (<i>summa cum laude</i>)
B.A. (Physics)	1993	University of Virginia

II. EMPLOYMENT

Associate Professor	Oregon State University	Corvallis, OR	2012-present
Assistant Professor	North Carolina State University	Raleigh, NC	2006-2012
Research Assistant	Georgia Institute of Technology	Atlanta, GA	2000-2005
Senior Staff Engineer	GeoSyntec Consultants	Huntington Beach, CA	1999-2000
Staff Engineer	GeoSyntec Consultants	Huntington Beach, CA	1997-1999
Research Assistant	University of New Mexico	Albuquerque, NM	1996-1997

III. TEACHING

A. Individual Student Guidance

Ph.D. Students

Completed

Mahdi Bahador

Graduation date: August 2012

Thermal, Hydraulic, and Mechanical Response of Unbound Pavement Layers with Geosynthetics at the Subgrade-Base Course Interface (Co-Advisor: Mo Gabr)

Currently: Private Consultant

Xueliang Zhao

Graduation date: May 2009

*Discrete Numerical Study of Loading Condition Effects on Granular Material Response*¹

Currently: Lecturer (tenure-track), School of Civil Engineering, Southeast University, Nanjing, China

In Process

Zhangwei Ning

Starting Semester: Fall 2009

Graduation date: expected August 2013

Small Strain and Failure Response of Granular Assemblies

¹ Received 2009 NCSU **Graduate School Dissertation Award** for the College of Engineering.

M.S. Students

Completed

Jeremy Kress

Graduation date: May 2011

Soil-Structure Interactions: A Discrete Numerical Study

Currently: Engineer, Berkel and Company Contractors, Silver Spring, MD

Charles Cunningham

Graduation date: December 2009

Effects of Gradation on the Performance of Aggregate Base Course Materials

Currently: Staff Engineer, Duke Energy, Huntersville, NC

In Process

Daniel Simpson

Starting quarter: Fall 2012

Graduation date: expected June 2014

Behavioral Thresholds in Sand-Clay Mixtures

Shuai Zhou

Starting quarter: Fall 2012

Graduation date: expected June 2014

Thermally-Driven Mechanical Shakedown in Granular Materials

MCE Students (non-thesis)

Completed

Matt Ranando

Graduation Date: August 2013

Design Guidelines for Geosynthetic Moisture Barriers in Pavement Applications

(Primary Advisor: Mo Gabr)

Michael Batten

Graduation Date: August 2011

Foundation Optimization using In-Situ Test Results

Currently: Staff Engineer, ESP Associates, Raleigh, NC

Gargi Anandjiwala

Graduation Date: December 2007

Soil-Water Characteristic Curves for Mine Tailings

Currently: EIT, Vertical Solutions, Inc., New York

Undergraduate Students

Completed

Natasha Boger

Graduation Date: Spring 2012

Anchoring Systems for Tidal Energy Generators

Currently: M.S. student in structural engineering, North Carolina State University

John Glover

Graduation Date: Spring 2012

Anchoring Systems for Tidal Energy Generators

Currently: M.S. student in construction engineering, North Carolina State University

Christopher Markham

Graduation Date: Spring 2011

Discrete Study of Cemented Granular Assemblies

Currently: Ph.D. student in geotechnical engineering, University of California-Berkeley

Christine Nguyen

Graduation Date: Spring 2011

The Occurrence of Moonquakes and their Effects on Lunar Structures

Currently: M.S. student in structural engineering, Virginia Tech

B. Graduate Committee Membership

<u>Student</u>	<u>Degree</u>	<u>Program</u>	<u>University</u>	<u>Status</u>
Arash Dehghan	Ph.D.	CCEE (Transportation Materials)	NCSU	in progress
Teresa Morales	M.S.	CCE (Geotechnical)	OSU	in progress
Seth Reddy	Ph.D.	CCE (Geotechnical)	OSU	in progress
William White	M.S.	CCE (Geotechnical)	OSU	completed 05/2013
Greg Thibeax	M.Eng.	CCE (Geotechnical)	OSU	completed 03/2013
Stephan Stys	M.Eng.	CCE (Geotechnical)	OSU	completed 03/2013
James Puckett	Ph.D.	Physics (Granular Mechanics)	NCSU	completed 08/2012
Sangchul Pyo	Ph.D.	CCEE (Geotechnical)	NCSU	completed 07/2012
Tim Cowell	M.S.	CCEE (Geotechnical)	NCSU	completed 06/2012
Cary Caruso	M.S.	CCEE (Geotechnical)	NCSU	completed 04/2012
Hyeseon Youm	Ph.D.	CCEE (Geotechnical)	NCSU	completed 04/2012
Youngjin Park	Ph.D.	CCEE (Geotechnical)	NCSU	completed 12/2010
Juan Jose Recalde	Ph.D.	CCEE (Construction)	NCSU	completed 12/2009
Wei Gao	M.S.	CCEE (Computing and Systems)	NCSU	completed 12/2008
Naresh Muthadi	M.S.	CCEE (Transportation Materials)	NCSU	completed 09/2007
Douglas Jacobson	M.S.	CEE (Geotechnical)	SDSU	completed 11/2006

C. Teaching Effectiveness (results from end-of-term surveys)

Oregon State University

Year	Term	Course	Title	# of Students	# of Evals	Question 1 ¹		Question 2 ²	
						Mean (TME/CCE)	Median (TME/CCE)	Mean (TME/CCE)	Median (TME/CCE)
12-13	F	CE 471	Foundations for Structures	11	11	5.0/4.5	5.0/4.6	5.5/4.6	5.6/4.8
	F	CE 572	Advanced Geotechnical Laboratory	13	10	5.3/4.9	5.8/5.0	5.7/5.2	5.8/5.4

¹ "This course as a whole was:"

² "The instructor's contribution to the course was:"

North Carolina State University

Code	CE342	CE548	CE342	CE548	CE593	CE342	CE342	CE342	CE548	CE793	CE342	CE548	CE342	CE548	CE342
Sem	F11	F11	S11	F10	S10	S10	F09	S09	F08	S08	F07	F07	S07	F06	S06
Enroll	39	8	64	6	14	66	54	65	7	6	31	3	47	6	38
Dept Mean ¹	4.2	4.4	4.1	4.4	4.3	4.1	4.1	4.2	4.3	4.4	4.2		4.2	4.3	3.9
Q # ³	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean
1	4.7	4.6	4.4	4.8	4.2	4.3	4.3	4.5	4.8	4.6	4.3	SEE NOTE 2	4.4	1.0	2.4
2	4.9	4.6	4.7	5.0	4.4	4.2	4.3	4.4	4.8	4.8	4.6		4.5	4.7	4.1
3	4.5	4.3	4.1	4.8	3.8	3.8	4.0	3.7	4.4	4.6	3.6		3.8	4.5	4.7
4	4.9	4.4	4.7	5.0	4.5	4.5	4.6	4.4	5.0	4.3	4.5		4.6	4.7	4.9
5	4.7	4.6	4.7	5.0	4.0	4.3	4.3	4.5	5.0	4.6	4.3		4.5	4.2	4.8
6	4.4	4.4	4.4	4.8	3.9	3.9	4.2	4.3	4.6	4.6	4.4		4.3	4.5	4.8
7	n/a	n/a	4.6	4.8	4.3	4.2	4.1	4.2	4.6	4.6	4.1		4.2	4.8	4.9
8	4.7	4.3	4.5	5.0	4.1	4.3	4.1	4.4	4.2	4.4	4.4		4.3	4.8	4.8
9	4.4	4.4	4.3	5.0	3.8	3.9	4.2	4.1	4.0	4.4	4.0		4.0	4.5	4.7
10	4.3	4.4	4.2	5.0	3.9	4.1	3.7	4.0	4.4	4.5	3.5		3.5	4.7	4.9
11	4.6	4.4	4.5	5.0	4.2	4.2	4.2	4.1	4.6	3.5	4.0		4.1	5.0	5.0
12	n/a	n/a	4.7	4.8	4.5	4.4	4.4	4.3	4.6	3.8	4.4		4.5	4.8	4.9
13	4.6	4.4	4.5	5.0	4.4	4.2	4.2	4.3	4.6	4.4	4.2		4.2	5.0	5.0
14	4.4	4.4	4.1	4.8	3.6	3.6	3.8	3.6	4.2	4.4	3.7		3.9	4.8	4.9
15	n/a	4.6	4.1	5.0	n/a	4.2	4.1	4.0	4.8	n/a	3.8		4.2	4.8	4.9
16	n/a	3.3	4.1	4.3	n/a	4.1	4.0	3.9	2.2	n/a	3.8		4.2	5.0	5.0
17	n/a	3.3	4.1	4.3	n/a	4.1	3.9	3.9	2.8	n/a	3.4		4.3	4.0	4.4
18	n/a	4.3	4.0	5.0	n/a	4.0	4.1	4.0	4.4	n/a	3.8		4.4	4.7	4.7

¹ This is the department mean to question 18 (evaluations through 2006) or to question 9 (2007 and later evaluations).

² Online evaluations were not performed for classes with fewer than six students.

³ When evaluations transitioned from paper to online between the Fall 2006 and Spring 2007 semesters, the wording and order of questions changed. Lists of questions are provided below for reference.

List of Questions for Online Evaluations (2007 forward)

1. The instructor stated course objectives / outcomes
2. The instructor was receptive to students outside the classroom
3. The instructor explained difficult material well
4. The instructor was enthusiastic about teaching the course
5. The instructor was prepared for class

6. The instructor gave prompt and useful feedback
7. The instructor effectively used instructional technology
8. The instructor consistently treated students with respect
9. Overall, the instructor was an effective teacher
10. The course readings were valuable aids to learning
11. The course assignments were valuable aids to learning
12. This course was intellectually challenging and stimulating
13. This course improved my knowledge of the subject
14. Overall, this course was excellent
15. Lab sessions contributed to mastery of course concepts
16. Lab facilities, equipment, supplies, etc. were adequate
17. The degree of lab difficulty was appropriate
18. Overall, the labs were effective learning experiences

List of Questions Prior to 2007

<i>If you cannot respond fairly to any of the following statements, please leave it blank for that item on the OpScan form.</i>		OpScan Designation									
QUESTIONS		A	B	C	D	E					
1.	My present class is	FR	SO	JR	SR	GR					
2.	In this course, I anticipate a final grade of	A	B	C	D	NC					
3.	Instructor makes clear the objectives of the course.	EXCELLENT	MORE THAN ADEQUATE	ADEQUATE	LESS THAN ADEQUATE	POOR					
4.	Instructor appears to have thorough knowledge of the subject.										
5.	Instructor presents organized lectures and is clear and understandable in explanations.										
6.	Instructor holds students' attention in class lectures and discussions.										
7.	Instructor exhibits enthusiasm and personal interest in presenting material.										
8.	Instructor speaks clearly and writes legibly.										
9.	Instructor allows class participation to the extent possible.										
10.	Instructor stimulates curiosity, independent thinking, and expression on the part of the students.										
11.	Instructor encourages student consultation and is accessible to students out of class.										
12.	Instructor has an attitude toward students which is										
13.	Did instructor explain how final grades will be determined?						YES	NO			
14.	Does instructor grade tests and other materials fairly?						YES	NO			
15.	Does instructor evaluate and return tests and papers within a reasonable time?	YES	NO								
16.	Given the opportunity, would you take another course with this instructor?	YES	NO								
<p>OVERALL RATINGS -- Use this section to evaluate overall ratings for the course and the course instructor. In completing this section, use the very best and very worst instructors and courses (including precollege) you have ever had as bases of comparison. For example, if you assign the instructor an "A", you would be rating him/her as one of the three or four best you have ever had in terms of his/her command of the subject, and an "E" would mean he/she was one of the three or four worst. A "B" would mean clearly above average and a "D" clearly below average. Most instructors and courses you have would probably deserve "C's."</p>											
		Truly outstanding A	Clearly above average B	Average C	Clearly below average D	Poor E					
17.	My overall judgment of this course is										
18.	My overall judgment of this instructor as an effective teacher is										

D. Curriculum Development

CE 471, Foundations for Structures: This course was offered for the first time in several years during the Fall quarter of 2012. It was developed from scratch using recent advances in foundation engineering and case histories. It focuses on a quantitative, scientific treatment of design that exploits the power of modern computers and software.

CE 572, Advanced Geotechnical Laboratory: This is the primary graduate laboratory course and is required of all incoming graduate students in geotechnical engineering. While this course had been offered previously, the current incarnation was developed *ab initio* to emphasize fundamental concepts. In addition, as of summer 2012, the laboratory space was in much disarray and had not been maintained for several years. Significant effort is being expended to develop a laboratory with capabilities that rival some of the best in the nation.

CE 57x, Unsaturated Soil Mechanics: This is a new course that has not been previously taught. It is a comprehensive treatment of the mechanics of partially saturated soils for advanced graduate students. There is no comparable course currently available on campus.

IV. SCHOLARLY ACCOMPLISHMENTS

A. Refereed Publications

Papers in Archival Journals

1. Bahador, M., T.M. Evans, and M.A. Gabr. (2013). "Numerical studies on the effect of temperature on the unsaturated hydraulic response of geotextiles," *Geosynthetics International*, accepted with revisions.
2. Bahador, M., T.M. Evans, and M.A. Gabr. (2013). "Modeling the Effect of Geocomposite Drainage Layers on Moisture Distribution and Plastic Deformation of Road Sections," *Journal of Geotechnical and Geoenvironmental Engineering*, in press.
3. Cunningham, C., T.M. Evans, and A.A. Tayebali. (2013). "Gradation effects on the mechanical response of crushed stone aggregate," *International Journal of Pavement Engineering*, 13(4), pp. 231-241.
4. Andrade, J.E., Q. Chen, P.H. Le, C.F. Avila, and T.M. Evans. (2012). "On the rheology of dilative granular media: bridging solid- and fluid-like behavior," *Journal of the Mechanics and Physics of Solids*, 60(6), pp. 1122-1136.
5. Kress, J., T.S. Yun, G.A. Narsillio, T.M. Evans, D.-S. Lee. (2012). "Evaluation of hydraulic conductivity in 3D random and heterogeneous particulate materials using network model." *Computers and Geotechnics*, 40(3), pp. 45-52, doi:10.1016/j.compgeo.2011.09.007.
6. Evans, T.M. and J.R. Valdes. (2011). "The microstructure of particulate mixtures in one-dimensional compression: numerical studies." *Granular Matter*, 13(5), pp. 657-669, doi: 10.1007/s10035-011-0278-z.
7. Patil, U., Valdes, J.R., and Evans, T.M. (2011) "Swell mitigation with granulated tire rubber." *ASCE Journal of Materials in Civil Engineering*, 23(5), pp. 721-727.
8. Yun, T.S. and T.M. Evans. (2011). "Evolution of At-Rest Lateral Stress for Cemented Sands: Experimental and Numerical Investigation." *Granular Matter*, 13(5), pp. 671-683, doi: 10.1007/s10035-011-0279-y.

9. Zhao, X. and T.M. Evans. (2011). "Numerical analysis of Critical State Behaviors of Granular Soils under Different Loading Conditions." *Granular Matter*, doi: 10.1007/s10035-011-0284-1².
10. Yun, T. S., and Evans, T. M. (2010). "Three-dimensional random network model for thermal conductivity in particulate materials." *Computers and Geotechnics*, 37(7-8), 991-998.
11. Evans, T.M., and J.D. Frost. (2010). "Multiscale Investigation of Shear Bands in Sand: Physical and Numerical Experiments," *International Journal of Numerical and Analytical Methods in Geomechanics*, 34(15), pp. 1634-1650.
12. Zhao, X. and T.M. Evans. (2009). "Discrete Simulations of Laboratory Loading Conditions," *International Journal of Geomechanics*, 9(4), pp. 169-178.
13. Evans, T.M., S. Chall, X. Zhao, and T-M. Rhyne. (2009). "Visualization and Analysis of Microstructure in Three-Dimensional Discrete Numerical Models," *Journal of Computing in Civil Engineering*, 23(5), pp. 277-287.
14. Frost, J.D. and T.M. Evans. (2009). "Membrane Effects in Biaxial Compression Tests", *Journal of Geotechnical and Geoenvironmental Engineering*, 135(7), pp. 986-991.
15. Valdes, J.R. and T.M. Evans (2008) "Sand-Rubber Mixtures: Experiments and Numerical Simulations", *Canadian Geotechnical Journal*, 45(4), pp. 588-595.
16. Jacobson, D.E., J.R. Valdes, and T.M. Evans. (2007). "A numerical view into direct shear specimen size effects", *Geotechnical Testing Journal*, 30(6), pp. 512-516.
17. Stormont, J.C., C. Ray, and T.M. Evans. (2001). "Transmissivity of a Nonwoven Polypropylene Geotextile Under Suction", *Geotechnical Testing Journal*, 24(2), pp. 164-171.
18. Stormont, J.C., K.S. Henry, and T.M. Evans. (1997). "Water Retention Functions of Four Nonwoven Polypropylene Geotextiles", *Geosynthetics International*, 4(6), pp. 661-672.

Refereed Journal Publications in Final Preparation

1. Ning, Z. and T.M. Evans. "DEM Study of Shear Wave Propagation in Granular Soils," to be submitted to *Granular Matter* in 2013.
2. Evans, T.M., Z. Ning, and C.D.P. Baxter. "Small- and Large-Strain Response in Cemented Granular Assemblies," to be submitted to *Canadian Geotechnical Journal* in 2013.
3. Ning, Z., T.M. Evans, and J.E. Andrade. "Particulate Studies of Drained Diffuse Instability," to be submitted to *International Journal for Numerical and Analytical Methods in Geomechanics* in 2013.
4. Kress, J.G. and T.M. Evans. "Discrete Element Method Simulation of Geostructures," to be submitted to *ASCE Journal of Geotechnical and Geoenvironmental Engineering*.
5. Evans, T.M., H. Mojarrad, and A.A. Tayebali. "Grain size distribution effects on the response of granular assemblies," to be submitted to *Geotechnical and Geological Engineering*.
6. Evans, T.M., T.S. Yun, and C.S. Markham. "Simulation of cemented granular assemblies," to be submitted to *Computers and Geotechnics*.
7. Kress, J.G. and T.M. Evans. (2012). "Effects of reduced gravity on particle-continuum interface behavior: numerical studies," to be submitted to the *ASCE Journal of Aerospace Engineering*.

² Published online 09/14/2011; **most downloaded** article in *Granular Matter* for the fourth quarter of 2011.

Geotechnical Special Publications³

1. Ning, Z.⁴, T.M. Evans, and J. Andrade. (2013). "Particulate Study of Drained Diffuse Instability in Granular Material," ASCE GeoCongress 2013, *Geotechnical Special Publication No. 231: Stability and Performance of Slopes and Embankments III*, San Diego, CA, pp. 1290-1299.
2. Frost, J.D., T.M. Evans, Y. Lu, and X. Zhao. (2012). "Selected observations from 3-D experimental and numerical studies of shear banding in biaxial shear tests," ASCE GeoCongress 2012, to be presented at the special session honoring Jerry Yamamuro, *Anisotropy and Shear Banding in Sands*.
3. Bahador, M., T.M. Evans, and M.A. Gabr. (2011). "Numerical Simulation of Geotextile Drains in Road Sections." ASCE GeoFrontiers 2011, *Geotechnical Special Publication No. 211: Advances in Geotechnical Engineering*, Dallas, TX, pp. 1862-1871.
4. Evans, T.M. and J.G. Kress⁵. (2011). "Discrete simulations of particulate-structure interactions." ASCE GeoFrontiers 2011, *Geotechnical Special Publication No. 211: Advances in Geotechnical Engineering*, Dallas, TX, pp. 4252-4262.
5. T.M. Evans, Z. Ning, and M.A. Gabr. (2011). "Sensors, Monitoring, and Health Assessment in the Undergraduate Curriculum." ASCE GeoFrontiers 2011, *Geotechnical Special Publication No. 211: Advances in Geotechnical Engineering*, Dallas, TX, pp. 1763-1773.
6. Evans, T.M., H. Mojarrad, C.N. Cunningham, and A.A. Tayebali. (2009). "Grain Size Distribution Effects in 2D Discrete Numerical Experiments," International Foundation Conference and Equipment Expo (IFCEE09), *Geotechnical Special Publication No. 186: Contemporary Topics In Situ Testing, Analysis, and Reliability of Foundations*, Orlando, FL, pp. 58-65.
7. Evans, T.M. and J.D. Frost. (2008). "Membrane Effects on Microstructure Evolution in 2D DEM Experiments", ASCE-GI GeoCongress 2008, *Geotechnical Special Publication No. 179: Characterization, Monitoring, and Modeling of GeoSystems*, New Orleans, LA, pp. 958-965.
8. Evans, T.M. and J.D. Frost. (2007). "Shear Banding and Microstructure Evolution in 2D Numerical Experiments", ASCE-GI GeoDenver 2007, *Geotechnical Special Publication No. 173: Advances in Measurement and Modeling of Soil Behavior*, Denver, CO, 10 pp.

Refereed Conference Papers (at least 2 reviews of complete papers)

1. Ning, Z. and T.M. Evans. (2013). "Discrete Element Method Study of Shear Wave Propagation in Granular Soil," in *Proceedings of 18th International Conference on Soil Mechanics and Geotechnical Engineering*, Paris, France.
2. Evans, T.M. and Z. Ning. (2013). "Wave Propagation in Assemblies of Cemented Spheres," in *Proceedings of Powders and Grains 2013*, American Institute of Physics, Sydney, Australia.
3. Evans, T.M., T.S. Yun, and J.R. Valdes. (2011). "Effective Thermal Conductivity in Granular Mixtures: Numerical Studies," *IS-Seoul: Fifth International Symposium on Deformation Characteristics of Geomaterials*, Seoul, Korea, August 31-September 3, 6 pp.

³ From the Preface of ASCE GSP's: "All papers included in this publication were peer-reviewed for technical quality and content. Each paper received two positive reviews before being accepted and was revised to conform to any mandatory revisions of the reviewers. All of the papers are eligible for discussion in the *Journal of Geotechnical and Geoenvironmental Engineering* and are eligible for ASCE and Geo-Institute awards."

⁴ Received one of three **USUCGER Student Travel Awards** (out of 13 applicants) to attend the GeoCongress in San Diego, CA.

⁵ Received one of three **USUCGER Student Travel Awards** (out of 33 applicants) to attend the GeoFrontiers Conference in Dallas, TX.

4. Kress, J.G. and T.M. Evans. (2010). "Analysis of pile behavior in granular soils using DEM." *Proceedings of the 35th Annual Deep Foundations Institute Annual Conference*, Hollywood, CA, October 12-15⁶.
5. Narsilio, G.A., T.S. Yun, J. Kress, and T.M. Evans. (2010). "Hydraulic and thermal conduction phenomena in soils at the particle-scale: Towards realistic FEM simulations." *Mini-symposium in Computational Geomechanics, 9th World Congress on Computational Mechanics*, Sydney, Australia, July 19-23.
6. Evans, T.M. and X. Zhao. (2008). "A discrete numerical study of the effect of loading conditions on granular material response," *IS-Atlanta: Fourth International Symposium on Deformation Characteristics of Geomaterials*, Atlanta, GA, September 22-24, 7 pp.
7. Valdes, J.R., T.M. Evans, S.-H. Liang, and R. Yazdanifard. (2006). "Evaluating Microstructure Properties of Sand-Rubber Mixtures", *Proceedings of the XXIII Southeastern Conference on Theoretical and Applied Mechanics: Applications of Applied Mechanics in Infrastructure*, Mayaguez, Puerto Rico, 9 pp.
8. Frost, J.D., G.L. Hebler, T.M. Evans, and J.T. DeJong. (2004). "Interface Behavior of Granular Soils", *Proceedings of the 9th ASCE Aerospace Division International Conference on Engineering, Construction, and Operations in Challenging Environments*, Houston, TX, USA, pp. 65-72.
9. Frost, J.D., T.M. Evans, G.L. Hebler, and J.P. Giroud. (2002). "Influence of Wear Mechanisms on Geosynthetic Interface Strengths", *Proceedings of the 7th International Conference on Geosynthetics*, Nice, France, Vol. 4, pp. 1325-1328.
10. Evans, T.M., D.K. Meyers, K.M. Gharios, T. Hadj-Hamou, and E. Kavazanjian. (2000) "The Use of a Capillary Barrier Final Cover for Reclamation of a Closed Municipal Solid Waste Landfill", *Proceedings of the Third Annual SWANA Arid Climate Symposium*, Albuquerque, NM, pp. 16.1-16.9.
11. Stormont, J.C., T.M. Evans, T. Stockton, and C. Ray. (1998). "Unsaturated Hydraulic Properties of a Nonwoven Polypropylene Geotextile", *Joint Conference on the Environment, Waste-management Education and Research Consortium*, Albuquerque, NM, pp. 213-216.

B. Other Publications

Conference Presentations and Posters

1. Feng, K.⁷, B.M. Montoya, and T.M. Evans. (2013). "Mechanical Response of Microbial Induced Cemented Sands under Varying Stress Paths: Physical and Numerical Experiments," ASCE Geocongress Student Poster Competition, San Diego, CA, March 3-6.
2. Kato, K.⁸ and T.M. Evans. (2013). "Estimating the Applicability Limit of Relative Density for Sand Containing Clay Using Activity," ASCE Geocongress Student Poster Competition, San Diego, CA, March 3-6.
3. Feng, K., B.M. Montoya, and T.M. Evans. (2012). "Mechanical Response of Microbial Induced Cemented Sands Under Varying Stress Paths: Physical and Numerical Experiments." Presented at the *49th Annual Meeting of the Society of Engineering Science*, Atlanta, GA, October 10-12.
4. Evans, T.M., H. Mojarrad, and A.A. Tayebali. (2012). "Grain Size Distribution Effects on the Mechanical Response of a 2D Granular Material." Presented at the *49th Annual Meeting of the Society of Engineering Science*, Atlanta, GA, October 10-12.

⁶ Paper won the Deep Foundations Institute **8th Annual Student Paper Competition**.

⁷ Finalist, 2013 ASCE Student Poster Geo-Challenge

⁸ Finalist, 2013 ASCE Student Poster Geo-Challenge

5. Evans, T.M., Z. Ning, M.A. Gabr, and C.S. Markham. (2011). "CCLI: Integration of Sensor Technologies into the Civil Engineering Curriculum." NSF CCLI-TUES PIs Conference, Washington, D.C., January 26-28.
6. Evans, T.M. and X. Zhao. (2009). "Shear Strength of Granular Assemblies: Plane Strain, Axisymmetric Compression, and Direct Shear," *Deformation and Failure of Geomaterials*, Bari, Italy.
7. Zhao, X. and Evans, T.M. (2008). "Discrete Numerical Investigations of Granular Material Response to Laboratory Loading Conditions." *Third Annual NC State University Graduate Student Research Symposium*, Raleigh, NC.
8. Evans, T.M. and J.D. Frost (2004). "Digital Quantification of Microstructure Evolution in Sands", *Microscopy and Microanalysis 2004*, Savannah, GA, USA, August 1-5 (Invited Presentation, extended abstract published in proceedings).
9. Evans, T.M., and J.D. Frost. (2004). "Experimental Investigation of Boundary Effects on Shear Banding in Granular Soils Subjected to Plane Strain Compression", *3rd Annual George Sowers Symposium*, Atlanta, Georgia, May.
10. Evans, T.M., and J.D. Frost. (2003). "Discrete Element Method (DEM) Modeling of Granular Assemblies", *2nd Annual George Sowers Symposium*, Atlanta, Georgia, May.
11. Evans, T.M., and J.D. Frost. (2002). "Preliminary Studies on the Quantification of Microstructure Evolution in Sands", *1st Annual George Sowers Symposium*, Atlanta, Georgia, May.
12. Evans, T.M. (2002). "Digital Quantification of Microstructure Evolution in Sands", *13th Annual ACBM/NIST Computer Modeling Workshop*, Gaithersburg, MD, June 10-13.
13. Evans, T.M., S.M. Keller, L.N. Germanovich, and J.D. Frost. (2000). "Direct Visualization of 3-D Brittle Fracture Propagation in Uniaxial Compression", *Fall 2000 Meeting of the American Geophysical Union*, San Francisco, CA, December 14-19.

White Papers

1. Evans, T.M. (2009). "Granular Materials and Continuous Solids: Simulating the Interface." In response to the National Research Council's Decadal Survey on Biological and Physical Sciences in Space, <http://www8.nationalacademies.org/SSBSurvey/PublicViewMicro.aspx>.
2. Evans, T.M. (2007) "Generating Polar Histograms in Mathcad," lead story in the *PTC Express Newsletter*, http://www.imakenews.com/ptcexpress/e_article000946858.cfm?x=b11,0,w, November (*Submission invited by PTC, publisher of Mathcad*).

Reports

1. Evans, T.M. and J.G. Kress (2010). "A Discrete Numerical Investigation into Soil-Structure Interaction with Extraterrestrial Applications." Report submitted to the North Carolina Space Grant Consortium.
2. Evans, T.M., A.A. Tayebali, C.N. Cunningham, and H. Mojarrad. (2009). "Effect of Gradation on Predicted Performance of Aggregate Base Course," Final Report submitted to North Carolina Department of Transportation.
3. Zhao, X. and T.M. Evans (2007). "Geotechnical Investigation and Slope Stability Analysis, Ore Knob Tailings Impoundment," Final Report submitted to Dr. Bob Borden, acting as representative of the North Carolina Department of Environment and Natural Resources.

Research Featured in Popular Literature

1. Evans, T.M. (2010). "Discrete Simulations for Design of Geostrutures." *Natural Hazards Observer*, May.
2. Brown, J.L. (2010). "Soil Simulations May Simplify Design of Lunar Structures." *Civil Engineering Magazine*, November, pp. 44-45.
3. Rotter, A. (2010). "Grundstücke auf dem Mond." *WirtschaftsBlatt*, October 29, p. 20.

C. Presentations

Invited Seminars/Lectures

1. Invited lecture on "Soil Mechanics and Geotechnical Engineering at the Grain Scale," University of South Carolina, Columbia, SC, March 2012.
2. Invited lecture on "Thermal and Mechanical Behavior of Granular Mixtures," Georgia Institute of Technology, Atlanta, GA, December 2011.
3. Invited lecture on "Granular Mixtures in Geotechnical Engineering," Korea University, Seoul, Korea, August 2011.
4. Invited seminar (3-hr.) on "Geotechnical Engineering at the Grain Scale," Southeast University, Nanjing, China, July 2011.
5. Invited lecture on "Micromechanics and Discrete Modeling in Geotechnical Engineering," University of New Mexico, February 2011.
6. Invited lecture on "Micromechanics and Discrete Modeling in Geotechnical Engineering," University of Missouri-Rolla, December 2010.
7. Evans, T.M. "Micromechanics and Discrete Modeling." Presented during NCSU site visit by Northrop-Grumman, November 2009.
8. Invited lecture on "Micromechanics and Discrete Modeling of Granular Materials." *2009 US-Korea Conference on Science, Technology and Entrepreneurship*, Raleigh, NC, July 2009.
9. Invited lecture on "Micromechanics and Shear Banding in Granular Soils," University of Puerto Rico-Mayaguez, October 2008.
10. Invited lecture on. "The RENCi 3D Slicer for Use in the Study of Granular Material Microstructure," RENCi-NCSU site visit by Terri Lomax, NCSU Interim Vice Chancellor for Research and Graduate Studies, and Tony Waldrop, UNC-CH Vice Chancellor for Research and Economic Development, August 26, 2008.
11. Invited lecture on "Numerical Simulation of Consolidation," NCSU Summer Practicum for Venezuelan CE students from Universidad Catolico Andres Bello (UCAB), Caracas, Venezuela, June 2006, June 2008.
12. Invited panelist/presenter, "Mentoring Young Faculty and Outreach Issues," Sixth Annual USUCGER National Workshop, Sacramento, CA, May 2008.
13. Invited lectures (2) on "Discrete Modeling in Geotechnical Engineering," CE 793N: Modeling and Computing in Geomechanics, Dr. Shamim Rahman, April 2008.
14. Invited lecture on "Slope Stability in Solid Waste Landfills," CE 477/577: Principles of Solid Waste Engineering, Dr. Mort Barlaz, March 2008.
15. Invited lecture on "Microscale Physical and Numerical Investigations of Shear Banding in Granular Soils," Duke University Department of Civil and Environmental Engineering Seminar Series, November 14, 2007.
16. Invited lecture on "Micromechanics and Discrete Modeling in Geotechnical Engineering," ASCE North Carolina Section Annual Meeting, September, 2007.

17. Invited lecture on “Micromechanics of Shear Banding in Granular Soils,” Daniels Nonlinear Lab Research Group (Karen Daniels, NCSU Physics and Michael Shearer, NCSU Math), November, 2006.

V. PROFESSIONAL DEVELOPMENT

1. NSF-sponsored participant, *International Workshop on Thermoactive Geotechnical Systems for Near-Surface Geothermal Energy: From Research to Practice*, Lausanne, Switzerland, 03/25/2013-03/27/2013.
2. NSF-sponsored participant, *GeoX 2010: 3rd International Workshop on x-Ray CT for Geomaterials and the Introduction to Computed Tomography (CT) and Neutron Tomography (NT) Short Course*, New Orleans, LA, 02/28/2010-03/03/2010.
3. NSF-sponsored participant, *Workshop on Deformation and Failure of Geomaterials*, Bari, Italy, 06/13/2009-06/19/2009.
4. NSF-sponsored participant, *2nd International Workshop: Microstructure and Micromechanics of Stone Based Infrastructure Materials*, Beijing, China, October 2008.
5. Sponsored Attendee, *Association of Drilled Shaft Contractors (ADSC) Summer Faculty Workshop*, Chattanooga, TN, June 2008.
6. Attended Assistant Professors’ Learning Community Discussion Group, “Discussion on Directing Graduate Student Research,” Dr. Marie Davidian, Williams Neal Reynolds Professor of Statistics, April 2007.
7. Attended Assistant Professors’ Learning Community Discussion Group, “Pacing a Presentation for High Impact,” Dr. Jose Picart, Vice Provost for Diversity and African American Affairs and Professor of Counselor Education, September 2006.
8. Attended New Faculty Workshop Follow-up Session, “Ask the Experts: A Panel on Working with Government Research Funding Agencies,” Moderated by Richard Felder, April 2006.
9. Attended New Faculty Workshop Follow-up Session, “So You Want to Win a CAREER Award,” Richard Felder and recent CAREER Award winners, March 2006.
10. Attended New Faculty Workshop Follow-up Session, “A Trip to the Crisis Clinic: Common Teaching Problems and What to Do about Them,” Richard Felder and Rebecca Brent, February 2006.
11. Attended the *NCSU College of Engineering New Faculty Workshop*, a five-day intensive workshop presented by Richard Felder and Rebecca Brent, August 2005.
12. Participant, *13th Annual ACBM/NIST Computer Modeling Workshop*, Gaithersburg, MD, June 10-13, 2002.
13. Participant, *International Workshop on Bifurcations and Instabilities in Geomechanics*, St. Cloud, MN, June 2-5, 2002.
14. Participant, *Designing and Implementing Alternative Earthen Final Covers for Waste Containment Facilities*, University of Wisconsin, Madison Continuing Education Course, taught by Craig H. Benson and Mark D. Ankeny, February 1999.

VI. SERVICE

A. Professional Contributions

Organization and Chairmanship of Technical Meetings

Co-Chair and moderator, “Mechanics of Substructure Materials” session at 49th Annual Technical Meeting of the Society of Engineering Science, Atlanta, GA, 10/2012.

Co-Chair and moderator, “Laboratory and Physical Modeling for Use in Numerical Analysis” session at 2012 ASCE GeoCongress, Oakland, CA, 03/2012.

Co-Chair and moderator, “Hands-On Computational Geotechnics” session at 2008 ASCE GeoCongress, New Orleans, LA, 03/2008.

Professional Committee Service

United States Universities Council on Geotechnical Education and Research, Member, 2006 to present.

USUCGER Webmaster, email list manager, 2006-present.

USUCGER Election Nominating Committee Chairman, 2007 elections.

USUCGER Student Travel Grant program, initiator and chair, 2009-present.

American Society of Civil Engineers (ASCE), Associate Member, 2006 to present.

ASCE Geo-Institute Soil Properties and Modeling Committee

Vice Chair, August 2011 to present

Member, 2007 to present.

ASCE Geo-Institute Computational Geotechnics Committee

Member, 2006 to present.

American Society for Engineering Education (ASEE), Member, 2006-2008.

American Society for Testing and Materials (ASTM), Student Member, 2004-2005.

Review Work for Technical Journals

Acta Geotechnica

ASCE International Journal of Geomechanics

ASCE Journal of Aerospace Engineering

ASCE Journal of Computing in Civil Engineering

ASCE Journal of Engineering Mechanics

ASCE Journal of Environmental Engineering

ASCE Journal of Geotechnical and Geoenvironmental Engineering

ASCE Journal of Materials in Civil Engineering

ASTM Geotechnical Testing Journal

ASTM Journal of Testing and Evaluation

Computers and Geotechnics

Geotechnical and Geological Engineering

Granular Matter

International Journal for Numerical and Analytical Methods in Geomechanics

Journal of Contaminant Hydrology

Risk Analysis

Soil & Sediment Contamination: An International Journal

Reviewer Work for National and International Conferences

ASCE GeoCongress 2014
ASCE GeoFrontiers 2012 Conference
ASME 2011: 30th International Conference on Ocean, Offshore and Arctic Engineering
ASCE GeoFrontiers 2011 Conference
ASCE GeoFlorida 2010 Conference
International Foundations Congress and Equipment Expo 2009
ASCE GeoCongress 2008 Conference
ASCE 7th International Symposium on Field Measurements in Geomechanics Conference, 2007
ASCE GeoDenver 2007 Conference

Professional Registration

Professional Engineer-in-Training #5314, New Mexico, 1997.

B. Campus Contributions

1. Faculty Advisor, NCSU Engineers Without Borders, 2009 – 2012.
2. Member, NCSU Engineers Without Borders Technical Advisory Committee, 2006 – 2009.
3. Member, NCSU Mechanics and Materials Working Group, 2006 – 2012.
4. NCSU Graduate School Representative to Research Committees, 2006 – 2012.
5. Inaugural Member, NCSU CCEE Publicity Committee, 2010 – 2012.
6. Inaugural Member, NCSU CCEE Sustainability Task Force, 10/2007 – 2012.
7. Member, NCSU CCEE Undergraduate Programs Committee, 09/2007 – 08/2011.
8. Member, NCSU CCEE ABET Design Committee, 08/2007 – 2012.
9. Member, NCSU CCEE Seminars Committee, 01/2007 – 08/2011.
10. NCSU CCEE Library Representative, 01/2007 – 10/2010.
11. Participant, NCSU Engineering Open House, 04/2006, 10/2006, 10/2007.

C. Other Contributions

Consulting

Senior Staff Engineer, GeoSyntec Consultants, Huntington Beach CA, 1999-2000.

Staff Engineer, GeoSyntec Consultants, Huntington Beach CA, 1997-1999.

Landfill Design

- Unsaturated flow modeling and design of alternative final covers
- Confirmatory numerical modeling of an instrumented, in-place alternative cover
- Subsurface geotechnical investigations
- Erosion mechanics and slope protection
- Surface water hydrology analyses and hydraulic design
- Forensic investigations of failures and litigation support

Regulatory Compliance

- Groundwater well installation and monitoring
- Subsurface environmental investigations

- Gas probe installation and monitoring
- Database management and analysis of laboratory analytical results

Project Management

- Day-to-day management and control of three alternative cover design projects
- Management of subconsultants and subcontractors
- Regulatory negotiations, client interface, report preparation and review

Other Professional Activities

1. Proposal Reviewer, TEC 21: The Engineering of Complexity (France) (2013)
2. Review Panelist, National Science Foundation (2009, 2012)
3. Proposal Reviewer, National Science Foundation (2008, 2009)
4. Proposal Reviewer, South African National Research Foundation (2002)

VII. GRANTS AND CONTRACTS

Funded

Development of Algorithms for the Quantification and Simulation of Three-Dimensional Microstructure in Granular Materials

National Science Foundation

Principal Investigator, \$80,874, 08/01/2012-07/31/2013

Reliable Interpretation of Augered Cast-In-Place Pile Capacity Using Load Tests

Deep Foundations Institute

Co-Principal Investigator (PI: A.W. Stuedlein), \$17,000, 05/30/2013-11/30/2013

Ocean Energy: Assessment of Energy Storage Aspects Including Control and Grid Connection Off the North Carolina Coast

North Carolina Coastal Studies Institute

Co-Principal Investigator, \$20,410, 07/01/2011-06/30/2012

Hydrokinetic Energy System

North Carolina Coastal Studies Institute

Subcontractor, Anchoring and Shoring, \$3,000, 07/01/2011-06/30/2012

A Discrete Numerical Investigation into Soil-Structure Interaction with Extraterrestrial Applications

North Carolina Space Grant Consortium

Principal Investigator, \$15,000, 03/15/2009-03/14/2010.

Course, Curriculum, and Laboratory Improvement: Integration of Sensor Technologies into the Civil Engineering Curriculum

National Science Foundation

Principal Investigator (Co-PI: M.A. Gabr), \$150,000, 01/01/2009-07/31/2012.

Design Guidelines for Geosynthetic Moisture Barriers in Pavement Applications

Federal Highway Administration

Co-Principal Investigator (PI: M.A. Gabr), \$52,000, 09/01/08-03/31/10

*Why is there a bump at the end of the bridge?*⁹

North Carolina Department of Transportation

Principal Investigator (Co-PI: M.A. Gabr), \$170,233, 08/16/08-05/31/10

Nanoscale Modeling of the Behavior of Natural and Augmented Clays

NCSU College of Natural Resources Extramural Proposal Development Fund

Co-Principal Investigator (PI: O. Rojas, Co-PI's: J. Baugh, M. Guddati), \$8,000, 02/01/2008.

Effect of Gradation on Predicted Performance of Aggregate Base Course

North Carolina Department of Transportation

Principal Investigator (Co-PI: A.A. Tayebali), \$82,490, 01/01/08-12/31/08.

Design and Fabrication of a "Spring Analogy" Device for Teaching the Theory of Consolidation

NCSU Faculty Center for Teaching and Learning

Principal Investigator, \$965, 2006-2007.

Pending

An integrated physical-numerical approach for predicting pore pressure generation and dissipation during coupled earthquake-tsunami events

National Science Foundation, Geomechanics and Geomaterials

Co-Principal Investigator (PI: H.B. Mason, co-PI: H. Yeh), \$417,336

Particulate Modeling of Cyclic and Post-Cyclic Response of Seafloor Anchors for Wave Energy Generation

Sound & Sea Systems (Prime sponsor: Department of Defense)

Principal Investigator, \$159,891 (subcontract from \$2M+ proposal)

Revolutionizing the Science and Engineering of Clays Through Integrated Simulations and Experiments Across Multiple Length Scales

National Science Foundation (INSPIRE competitive pre-proposal in review)

Principal Investigator (co-PIs: J.W. Baugh, M.N. Guddati, M.A. Pasquinelli, O. Rojas), \$997,852

VIII. HONORS AND AWARDS

1. George F. Sowers Distinguished Graduate Student Award, Georgia Tech Geosystems Group, 2006
2. NSF Graduate Research Fellowship, 2001 – 2004
3. Georgia Institute of Technology President's Fellowship, 2000 – 2004
4. Tau Beta Pi (University of New Mexico chapter, 1997, currently inactive)
5. Chi Epsilon (University of New Mexico chapter, 1996 – 1997, currently inactive)

⁹ Project funded on technical merit but cancelled (along with 12 other funded proposals) two weeks prior to the begin date due to NCDOT budgetary shortfalls.