

RODRIGO SALGADO
PROFESSOR OF CIVIL ENGINEERING
PURDUE UNIVERSITY

<http://www.ecn.purdue.edu/~rodrigo/>

I. Degrees

Ph.D. in Civil Engineering, University of California, Berkeley, 1993
M.S. in Civil Engineering, University of California, Berkeley, 1990
Engenheiro Civil, Universidade Federal do Rio Grande do Sul (UFRGS), 1986

II. Positions at Purdue

Professor of Civil Engineering, Purdue University	2003-present
Associate Professor of Civil Engineering	1999-03
Assistant Professor of Civil Engineering, Purdue University	1993-99

III. Positions at other institutions or organizations

Visiting Professor, Nottingham University	2007-08
Visiting Academic, University of Western Australia	2000
Visiting Associate Professor, University of Newcastle, Australia	2000
Visiting Fellow, Politécnico di Torino, Turin, Italy	1993
Graduate Student Researcher (GSR), UC Berkeley	1990-93
Research Assistant (RA), Case Western Reserve University	1988-89
Production Engineer, PETROBRÁS Petróleos Brasileiros S. A.	1987-88
Foundation Engineer, Geyer Estaqueamento Ltda.	1986-87
Foundation Engineering Intern, Geyer Estaqueamento Ltda.	1984-86

IV. Honors and awards

Invited Participant, NAE U.S.-China Frontiers of Engineering Program, 2009
Invited Paper to the 60th Anniversary Issue of Geotechnique
Excellent Contributions Award, IACMAG, 2008
Invited Participant, NAE Frontiers of Engineering Program, 2005
Shamsher Prakash Research Award, 2005
ASCE Walter L. Huber Research Prize, 2004
Gledden Senior Fellowship, University of Western Australia, 2000
ASCE Arthur Casagrande Professional Development Award, 1999
National Science Foundation Research Initiation Award, 1994
Brazilian Research Council Ph.D. Fellowship, 1990-93. One national award per year for geotechnical engineering
Parker-Trask Graduate Fellowship, University of California, Berkeley, 1989-90

V. Memberships in academic, professional and scholarly societies

American Concrete Institute (ACI), 1997-2000
American Society of Civil Engineers (ASCE), 1991-present
Associação Brasileira de Mecânica dos Solos (ABMS), 1994-present
Berkeley Geotechnical Society, 1989-present
British Geotechnical Society (BGS), 1994-present
Deep Foundations Institute, 2003-present
International Association for Computer Methods in Geomechanics, 1998-present
International Association of Foundation Drilling (ADSC), 1992-1996
International Society of Rock Mechanics (ISRM), 1994-present
International Soc. of Soil Mechanics and Geotechnical Engineering 1991-present
Sigma Xi, 1996-present

VI. Editorial and Review Services (past and current)

Journal Editorial Boards

ASCE Journal of Geotechnical and Geoenvironmental Engineering
ASCE International Journal of Geomechanics
Soils and Rocks
Geomechanics and Geoengineering: An International Journal

Promotion cases

Various American, Canadian and Asian universities

Theses

University of Western Australia
University of Newcastle
University of British Columbia
Dalhousie University
Federal University of Rio Grande do Sul

Research Proposals

National Science Foundation
Engineering and Physical Sciences Research Council (EPSRC)
Fullbright
Deutsche Forschungsgemeinschaft
Colorado DOT
FHWA-INDOT JTRP

VII. Conference Organization

ASCE-GI GeoFlorida 2010 (Chair of Technical Program and Keynote Lectures)

VIII. TEACHING

Courses taught at Purdue

Courses Developed and Taught at Purdue

CE383 Geotechnical Engineering I
 CE483 Geotechnical Engineering II
 CE580 Advanced Geotechnical Engineering
 CE585 Dams
 CE587 Soil Dynamics
 CE597 Piling Engineering
 CE680 Theoretical Soil Mechanics
 CE683 Advanced Foundation Engineering
 CE687 Earthquake Geotechnical Engineering
 CE689 Plasticity Theory
 CE697 Special Foundations

Courses Taught in the Last Seven Years

Semester/Year	Course No.	Course Title	Credit Hours	No. of Students	Percent Responsibility
F00	CE687	Earthquake Geotechnical Engineering	3	12	100 %
F01	CE580	Advanced Geotechnical Engineering	3	12	100 %
F01	CE680	Theoretical Soil Mechanics	3	12	100 %
S02	CE683	Advanced Foundation Engineering	3	12	100 %
F02	CE580	Advanced Geotechnical Engineering	3	13	100 %
F02	CE483	Geotechnical Engineering II	3	40	100 %
S03	CE683	Advanced Foundation Engineering	3	8	100 %
F03	CE689	Plasticity Theory	3	16	100%
F04	CE483	Geotechnical Engineering II	3	65	100 %
S04	CE683	Advanced Foundation Engineering	3	9	100 %
F05	CE697	Special Topics in Foundation Engineering	3	14	100%
S05	CE687	Earthquake Geotechnical Engineering	3	25	100 %
S06	CE689	Plasticity Theory	3	21	100%
F07	CE689	Plasticity Theory	3	6	100%
F08	CE383	Geotechnical Engineering I	3	75	100%
S09	CE597	Piling Engineering	3	14	100%

Note: semesters not appearing in the table were spent on sabbaticals.

Theses and Dissertations Underway

Name	Expected Degree	Title
Tanusree Chakraborty	Ph.D.	A Method for Accounting for Pile Setup and Relaxation in Pile Design and Quality Assurance
Faraz Tehrani	Ph.D.	Deflections of Pile Groups
Sang Inn Woo	Ph.D.	Simulation of Pile Installation
Mazhar Iqbal Arshad	Ph.D.	PIV Study of Displacement Fields Around Pile Foundations

Completed Theses and Dissertations

Date	Name	Degree	Title
12/08	Aurva Kapoor	M.S.	A Method of Analysis of Single Piles and Pile Groups Subjected to Combined Loads
8/08	Dongwook Kim	Ph.D.	LRFD of Slopes and Retaining Structures
5/08	Taehoon Koh	Ph.D.	Development of a Constitutive Model for Tire Shreds mixed with Bottom Ash
12/06	Grace Abou-Jaoude	Ph.D.	A Method of Analysis of Single Piles and Pile Groups Subjected to Combined Loads
12/06	Dipanjan Basu	Ph.D.	Analysis and Design of Laterally Loaded Piles
05/06	Dimitrios Loukidas	Ph.D.	Advanced Constitutive Modeling of Sands and Applications to Foundation Engineering
05/06	Tejas Murthy ⁴	Ph.D.	Study of the Undrained Static Behavior of Sandy Soils in the Critical State Framework
05/06	Sungmin Yoon ⁴	Ph.D.	Mechanical Response of Tire Shred-Sand Mixtures and Applications to Geotechnical Structures
2005	Kwangkyun Kim	Ph.D.	Cone Penetration Test in Clayey Soil: Rate Effect and Application to Pile Shaft Resistance calculations
2005	Kevin Foye	Ph.D.	Reliability Analysis and LRFD of Foundations
2005	Jie Zhang	Ph.D.	Cavity Expansion and Penetration Resistance in Cemented Sands
5/04	Antonio Carraro	Ph.D.	Mechanical Behavior of Silty and Clayey Sands
12/03	Paola Bandini ²	Ph.D.	Applications of Limit Analysis to Stability Problems in Geotechnical Engineering
5/03	Bumjoo Kim	Ph.D.	Behavior of Fly and Bottom Ash Embankments
12/02	Bryan Scott	Ph.D.	Limit States Design of Shallow Foundations
8/02	Daehyeon Kim	Ph.D.	Effects of Super Single Tire Loadings on Road Pavements
5/99	Junhwan Lee	Ph.D.	Response of Foundations in Sand from CPT Results
8/98	Jongmin Kim	Ph.D.	Limit Analysis of Soil Slope Stability Using Finite Elements and Linear Programming
5/97	Ahmed Karim ³	Ph.D.	Building Highway Embankments of Fly/Bottom Ash Mixtures
12/96	Kwanho Lee ³	Ph.D.	The Use of Waste Materials (Air-Cooled Furnace Slag and Pyrolyzed Carbon Black) in Hot Mix Asphalt
8/96	Andres Bernal ³	Ph.D.	Laboratory Study on the Use of Tire Shreds and Rubber-Sand in Backfills and Reinforced Soil Applications
12/02	Tejas Murthy	M.S.	Critical State of Silty Sands
12/00	Dimitrios Loukidas ²	M.S.	Seismic Response of Pile Foundations
5/99	Paola Bandini	M.S.	Static Response and Liquefaction Resistance of Silty Sand
12/98	Xiaodong Luo	M.S.	Dynamic Cone Penetration for Assessment of Subgrade Soil Suitability

Undergraduate special projects directed.

Mr. James Brown worked on soil and coal ash compaction under Prof. Salgado's supervision.

Mr. Ryan Hebbe worked on an NSF project on liquefaction of sands.

Mr. Bryan Scott worked on laboratory testing of silty sands.

Mr. Hong Wei Chee worked on laboratory testing of silty sands.

Mr. Arjun Sondhi (summer intern from India) worked on grain size studies.

Adyithia Soendjojo is working on theoretical and experimental aspects of piles loaded in multiple directions.

IX. RESEARCH

Ph.D. Students

Current

Faraz Tehrani

Sang Inn Woo

Tanusree Chakraborty

Mazhar Iqbal Arshad

Alumni

Name	Year	Current Position
Dongwook Kim	2008	Visiting Scholar, Civil Engineering, Purdue
Taehoon Koh	2008	Scientist, Railway Research Institute, South Korea
Grace Abou-Jauode	2007	Assistant Professor, Notre Dame University, Lebanon
Dipanjan Basu	2007	Assistant Professor, University of Connecticut
Dimitrios Loukidis	2006	Assistant Professor, Cyprus University, Cyprus
Sungmin Woon	2006	Research Engineer, Louisiana State University
Tejas Murthy	2006	Visiting Scholar, Mechanical Engineering, Purdue
Kwangkyun Kim	2005	Project Engineer, Houston
Kevin Foye	2005	Senior Staff Engineer, CTI and Associates, Inc.
Jie Zhang	2005	Assistant Professor, New Mexico State University
Antonio Carraro	2004	Assistant Professor, Colorado State University
Paola Bandini	2003	Associate Professor, New Mexico State University
Bumjoo Kim	2003	Assistant Professor
Bryan Scott	2002	Staff Engineer, Thelen Associates, Inc.
Daehyeon Kim	2001	Assistant Professor
Junhwan Lee	1999	Professor, Yonsei University
Jongmin Kim	1998	Associate Professor, Sejong University
Ahmed Karim	1998	Consultant
Kwanho Lee	1996	Professor, Kyungsoong Univ., Korea

Visiting Faculty and Scholars

- Dr. H.S. Yu, Senior Lecturer, University of Newcastle, Newcastle, Australia. Research on upper and lower bound analysis of slopes when Dr. Yu visited Purdue University (1995).
- Dr. Mike Riemer, Adjunct Professor, U.C. Berkeley. Laboratory measurement of shear wave velocities in soil (1996).
- Dr. Ahmed Karim, Egypt, Post-Doctoral Associate. Triaxial and bender element testing of silty sand (1997).
- Dr. Jongmin Kim, Korea, Post-Doctoral Associate. Stability analysis of soil slopes (1998).
- Dr. Cassia Galvão, Brazil, Visiting Scholar. Bender element testing (July, 1999).
- Dr. Junhwan Lee, Research Associate. CPT studies (1999-2001).
- Prof. Kyuho Paik, Korea, Visiting Scholar. Studies on bearing capacity and load-response of pipe piles (2000-01).
- Prof. Woojin Lee, Korea, Visiting Scholar (3/02-3/03). Use of fiber optics sensors to assess load transfer in piles.
- Prof. Kentaro Yamamoto, Japan, Visiting Scholar (3/02-3/03). Stability analysis of eccentrically loaded footings.
- Dr. Marcelo Rigo, Brazil, Visiting Scholar (3/03-9/03). Behavior of structured Brazilian soils.
- Dr. Won-Je Lee, Korea, Visiting Scholar (7/03-12/04). Set-up effects in piles.
- Dr. Andrei Lyamin, University of Newcastle, Australia (2004 and 2007). Limit analysis of foundations
- Dr. Antoinette Tordesillas, University of Melbourne, Australia (2006). Constitutive modeling.
- Dr. Adriano Bica, Federal University of Rio Grande do Sul. Residual soils.

Grants and contracts

Notes:

1. JTRP is the Joint Transportation Research Program (JTRP) of Purdue University.
2. FHWA = Federal Highway Administration; INDOT = Indiana Department of Transportation; NSF = National Science Foundation; PGI = Purdue Global Initiatives; PRF = Purdue Research Foundation, KRRI = Korea Railroad Research Institute

Title: Cone Penetration Test for Soil State Determination and Geotechnical Design

Sponsor: PRF

Role: PI

Starting Date: 8/94

Ending Date: 7/ 96

Amount: \$20,400

Title: Building Embankments of Fly/Bottom Ash Mixtures

Sponsor: JTRP (FHWA-INDOT)

Role: PI

Starting Date: 8/94

Ending Date: 12/96

Amount: \$65,400

Title: Liquefaction Potential Assessment Using the Seismic Cone Penetrometer

Sponsor: NSF

Role: PI

Starting Date: 10/94

Ending Date: 9/97

Amount: \$99,978

Title: Limit Analysis of Slopes
Sponsor: PGI
Role: PI
Starting Date: 1/95
Ending Date: 6/95
Amount: \$2,500

Title: CPT for Subgrade Soil Suitability Assessment
Sponsor: JTRP (FHWA-INDOT)
Role: PI
Starting Date: 1/96
Ending Date: 5/98
Amount: \$85,006

Title: CPT for Pile Analysis and Design
Sponsor: JTRP (FHWA-INDOT)¹
Role: PI
Starting Date: 8/96
Ending Date: 12/98
Amount: \$80,000

Title: 3-D Effective Stress Limit Analysis of Soil Slopes
Sponsor: PRF
Role: PI
Starting Date: 8/97
Ending Date: 7/99
Amount: \$21,000

Title: An Integrated System for the Simulation of Analysis of Soil-Structure-Water Interaction Under Earthquake Loadings
Sponsor: INTEL
Role: Co-PI (with Chen and Sotelino)
Starting Date: 8/97
Ending Date: 7/00
Amount: \$65,806

Title: Limit States Design of Foundations
Sponsor: JTRP (FHWA-INDOT)
Role: PI
Starting Date: 8/99
Ending Date: 7/02
Amount: \$160,000

Title: Subgrade Response to Super Tire Loadings
Sponsor: JTRP (FHWA-INDOT)
Role: PI
Starting Date: 8/99
Ending Date: 7/02
Amount: \$100,000

Title: Pile Damage Potential During Earthquakes
Sponsor: JTRP (FHWA-INDOT)
Role: PI (with A. Bobet)
Starting Date: 8/99
Ending Date: 7/00
Amount: \$25,000

Title: Pile Load Tests for Development of CPT-Based Pile Design Method
Sponsor: JTRP (FHWA-INDOT)
Role: PI
Starting Date: 3/00
Ending Date: 7/00
Amount: \$28,146

Title: Construction of Tire-Shred Embankment
Sponsor: JTRP (FHWA-INDOT)
Role: PI
Starting Date: 6/00
Ending Date: 12/02
Amount: \$37,935

Title: Cone Penetrometer (CPT) Training
Sponsor: JTRP (FHWA-INDOT)
Role: PI
Starting Date: 3/00
Ending Date: 12/00
Amount: \$10,000

Title: DCPT for Subgrade Assessment
Sponsor: JTRP (FHWA-INDOT)
Role: PI
Starting Date: 1/00
Ending Date: 12/00
Amount: \$29,525

Title: Load Response of Non-Textbook Soils
Sponsor: PRF
Role: PI
Starting Date: 5/02
Ending Date: 1/03
Amount: \$26,140

Title: Determination of Ash Mixture Properties and Construction of Test Embankment
Sponsor: IN Dept Comm / JTRP
Role: PI
Starting Date: 7/01
Ending Date: 5/03
Amount: \$161,894

Title: Analysis of Laterally Loaded Piles
Sponsor: JTRP (FHWA-INDOT)
Role:
Starting Date: 5/02
Ending Date: 12/07
Amount: \$154,983

Title: LRFD of Slopes and Retaining Structures
Sponsor: JTRP (FHWA-INDOT)
Role: PI
Starting Date: 5/02
Ending Date: 8/07
Amount: \$159,515

Title: Assessment of INDOT pile design methods
Sponsor: JTRP (FHWA-INDOT)
Role: PI
Starting Date: 12/03
Ending Date: 12/06
Amount: \$160,000

Title: Tire-Shred Backfill in MSE Wall Applications
Sponsor: JTRP (FHWA-INDOT)
Role: Co-PI (with Monica Prezzi)
Starting Date: 1/04
Ending Date: 10/08
Amount: \$95,000

Title: Initiative for Formulating a Long-Range Research Plan for INDOT
Sponsor: JTRP (FHWA-INDOT)
Role: PI
Starting Date:
Ending Date:
Amount: \$8,000

Title: Assessment of Axially-Loaded Pile Dynamic Design Methods and Review of INDOT Axially-Loaded Pile Design Methods
Sponsor: JTRP (FHWA-INDOT)
Role: PI
Starting Date: 1/05
Ending Date: 6/08
Amount: \$200,000

Title: A Method for Accounting for Pile Setup and Relaxation in Pile Design and Quality Assurance
Sponsor: JTRP (FHWA-INDOT)
Role: PI
Starting Date: 1/06
Ending Date: 6/09
Amount: \$100,000

Title: Use of DCP and Clegg Hammer Tests for Quality Control of Roadway Compaction
Sponsor: JTRP (FHWA-INDOT)
Role: Co-PI (with Monica Prezzi)
Starting Date: 1/06
Ending Date: 6/08
Amount: \$98,936

Title: Research and Development of More Economical Mixtures of Tire Shreds and Sand
Sponsor: IDEM
Role: Co-PI (with Monica Prezzi)
Starting Date: 5/04
Ending Date: 11/07
Amount: \$50,000

Title: Design Planning and Implementation of CE Applications for Tire Shreds
Sponsor: IDEM
Role: Co-PI (with Monica Prezzi)
Starting Date: 5/04
Ending Date: 11/07
Amount: \$125,000

Title: Field Implementation of Compaction Techniques for Tire Shred-Granular Material Mixtures
Sponsor: IDEM
Role: PI
Starting Date: 1/05
Ending Date: 12/08
Amount: \$75,000

Title: Development of LRFD Framework for Foundation Design
Sponsor: JTRP (FHWA-INDOT)
Role: PI
Starting Date: 1/07
Ending Date: 12/09
Amount: \$150,000

Title: Development of a Constitutive Model for Tire Shreds Mixed with Bottom Ash
Sponsor: KKRI
Role: PI (with Monica Prezzi)
Starting Date: 2/06
Ending Date: 8/06
Amount: \$42,160

Title: Development of a Constitutive Model for Tire Shreds Mixed with Bottom Ash
Sponsor: KKRI
Role: PI (with Monica Prezzi)
Starting Date: 9/06
Ending Date: 7/07
Amount: \$51,918

Title: Development of a Constitutive Model for Tire Shreds Mixed with Bottom Ash
Sponsor: KKRI
Role: PI (with Monica Prezzi)
Starting Date: 8/07
Ending Date: 5/08
Amount: \$31,000

Title: A Novel Method of Analysis of Single Piles and Pile Groups Subjected to Lateral Loads
Sponsor: NSF
Role: PI (with Monica Prezzi)
Starting Date: 7/06
Ending Date: 12/09
Amount: \$315,000

Title: Development of SPT-T Technology
Sponsor: JTRP (FHWA-INDOT)
Role: PI (with Monica Prezzi)
Starting Date: 1/09
Ending Date: 12/11
Amount: \$198,947

Title: Implementation of Analysis of Laterally Loaded Piles in Multi-Layered Soils
Sponsor: JTRP (FHWA-INDOT)
Role: Co-PI (with Monica Prezzi)
Starting Date: 6/08
Ending Date: 8/09
Amount: \$63,898

Title: Assessment of the Performance of MSE Abutment Walls in Indiana
Sponsor: JTRP (FHWA-INDOT)
Role: Co-PI (with Monica Prezzi)
Starting Date: 1/09
Ending Date: 12/11
Amount: \$185,350

Title: Limit States and Load and Resistance Design of MSE Walls
Sponsor: JTRP (FHWA-INDOT)
Role: PI
Starting Date: 9/09
Ending Date: 4/11
Amount: \$45,000

Title: Limit States and Load and Resistance Design of Slopes
Sponsor: JTRP (FHWA-INDOT)
Role: PI
Starting Date: 9/09
Ending Date: 4/11
Amount: \$45,000

Title: Static Pile Resistance Calculation Methods
Sponsor: JTRP (FHWA-INDOT)
Role: PI
Starting Date: 10/09
Ending Date: 5/11
Amount: \$45,000

Title: Pile Drivability Methods
Sponsor: JTRP (FHWA-INDOT)
Role: PI
Starting Date: 10/09
Ending Date: 5/11
Amount: \$45,000

Publications

Full articles in refereed journals

1. Fretti, C., Lo Presti, D., and Salgado, R. (1993). "The Research Dilatometer: In-situ and Calibration Test Results." *Rivista Italiana di Geotecnica*, XXVI(4), 237-243.
2. Sitar, N. and Salgado, R. (1994). "Behavior of Young Bay Mud from the Marina District of San Francisco Under Static and Cyclic Simple Shear." Loma Prieta Professional Paper 1551-A, *U.S. Geological Survey*, A145-A153.
3. Salgado, R., Mitchell, J.K., and Jamiolkowski, M. (1997). "Cavity Expansion and Penetration Resistance in Sand." *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, 123(4), 344-354.
4. Salgado, R., Drnevich, V.P., Ashmawy, A., Grant, P., and Vallenias, P. (1997). "Interpretation of Large-Strain Crosshole Tests." *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, 123(4), 382-388.
5. Salgado, R., Boulanger, R. and Mitchell, J.K. (1997). "Lateral Stress Effects on CPT Liquefaction Resistance Correlations." *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, 123(8), 726-735.
6. Park, T., Lee, K.H., Salgado, R., Lovell, C.W. and Coree, B. (1997). "Use of Pyrolyzed Carbon Black as an Additive in Hot-Mix Asphalt." *Journal of Transportation Engineering*, ASCE, 123(6), 489-494.
7. Bernal, A., Salgado, R., Swan, R., Jr. and Lovell, C.W. (1997). "Interaction Between Tire Shreds, Rubber-Sand and Geosynthetics." *Geosynthetics International*, 4(6), 623-643.
8. Yu, H.S., Salgado, R., Sloan, S. and Kim, J. (1998). "Limit Analysis vs. Limit Equilibrium for Slope Stability Assessment." *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, 124(1), 1-11.
9. Salgado, R., Mitchell, J.K., and Jamiolkowski, M. (1998). "Calibration Chamber Size Effects on Penetration Resistance in Sand." *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, 124 (9), 878-888.
10. Salgado, R., Jamiolkowski, M. and Mitchell, J.K. (1998). "Penetration Resistance in Sands: Analysis and Applications to Liquefaction Potential Assessment and Estimation of Pile Base Resistance." *Rivista Italiana di Geotecnica*, XXXII(4), 5-17.
11. Kim, J., Salgado, R. and Yu, H.S. (1999). "Limit Analysis of Soil Slopes Subjected to Porewater Pressures." *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, 125(1), 49-58.

12. Lee, J., Salgado, R., Bernal, A., and Lovell, C.W. (1999). "Tire Shreds and Rubber Sand as Lightweight Backfill Material." *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, 125(2), 132-141.
13. Lee, J. and Salgado, R. (1999). "Determination of Pile Base Resistance in Sands." *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, 125(8), 673-683.
14. Salgado, R., Bandini, P. and Karim, A. (2000). "Shear Strength and Stiffness of Silty Sands." *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, 126(5), 451-462.
15. Lee, J. and Salgado, R. (2000). "Analysis of Calibration Chamber Plate Load Testing." *Canadian Geotechnical Journal*, 37(1), 14-25.
16. Salgado, R. and Randolph, M.F. (2001). "Analysis of Cavity Expansion in Sand." *International Journal of Geomechanics*, 1(2), 175-192.
17. Lee, J., Salgado, R., Karim, A. and Lovell, C.W. (2001). "Compaction and Shear Strength of Fly and Bottom Ash Mixtures." *Journal of Solid Waste Technology and Management*, 27(3), 137-145.
18. Lee, K., Cho, J., Salgado, R. and Lee, I. (2001). "Retaining Wall Model Test with Foundry Sand Mixture Backfill." *Geotechnical Testing Journal*, ASTM, 24(4), 401-408.
19. Kim, J., Salgado, R. and Lee, J. (2002). "Limit Analysis of Complex Soil Slopes." *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, 128(7), 546-557.
20. Lee, J. and Salgado, R. (2002). "The Estimation of the Settlement of Footings in Sand." *International Journal of Geomechanics*, 1(2), 175-192.
21. Lee, K., Salgado, R., Jeon, W. and Kim, N. (2002). "Engineering Properties of Wastewater Treatment Sludge Modified by Hydrated Lime and Fly Ash." *Journal of Solid Waste Technology and Management*, 28(3), 145-153.
22. Paik, K. and Salgado, R. (2003). "Determination of Bearing Capacity of Open-Ended Piles in Sand." *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, 129(1), 46-57.
23. Lee, K., Yoon, Y., Cho, J., Salgado, R., Lee, I., and Kim, N. (2002). "Engineering Properties of Waste Foundry Sand Mixtures as Controlled Low Strength Materials." *Journal of Solid Waste Technology and Management*, 28(4), 190-199.
24. Scott, B., Kim, B. and Salgado, R. (2003). "Evaluation of Load Factors for Use in Geotechnical Design." *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, 129(4), 287-295.
25. Paik, K., Salgado, R. Lee, J and Kim, B. (2003). "Behavior of Open- and Closed-ended Piles Driven into Sands." *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, 129(4), 296-306.
26. Lee, J., Salgado, R. and Paik, K. (2003). "Estimation of Load Capacity of Pipe Piles in Sand Based on CPT Results." *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, 129(5), 391-403.
27. Carraro, J. A., Bandini, P. and Salgado, R. (2003). "Evaluation of Liquefaction Resistance of Clean and Silty Sands Based on CPT Cone Penetration Resistance." *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, 129(12), 965-976.
28. Loukidis, D., Bandini, P. and Salgado, R. (2003). "Comparative Study of Limit Equilibrium, Limit Analysis and Finite Element Analysis of the Seismic Stability of Slopes." *Geotechnique* 53(5), 463-479.
29. Paik, K. and Salgado, R. (2003). "Estimation of Active Earth Pressure Against Rigid Retaining Walls Considering Arching Effects." *Geotechnique*, 53(7), 643-653.
30. Paik, K. and Salgado, R. (2004). "Effect of Pile Installation Method on Pipe Pile Behavior in Sands." *Geotechnical Testing Journal*, ASTM, 27(1), 11-22.
31. Lee, J., Salgado, R. and Carraro, J.A.H. (2004). "Stiffness Degradation and Shear Strength of Silty Sands." *Canadian Geotechnical Journal*, NRC Research Press, 41(5), 831-843.
32. Lee, Woojin, Lee, Won-Je, Lee, Sang-Bae and Salgado, R. (2004). "Measurement of Pile Load Transfer using Fiber Bragg Grating Sensor System." *Canadian Geotechnical Journal*, 41(6), 1222-1232.

33. Zia, N., Kim, D. and Salgado, R. (2004). "Use of Recycled and Waste Materials in Indiana." *Transportation Research Record, Journal of the Transportation Research Board, Vol. 1874*, TRB, December, 2004, 78-95.
34. Salgado, R., Lyamin, A., Sloan, S. and Yu, H.S. (2004). "Two- and Three-dimensional Bearing Capacity of Footings in Clay." *Geotechnique* 54(5), 297-306.
35. Kim, B., Prezzi, M. and Salgado, R. (2005). "Geotechnical Properties of Fly and Bottom Ash Mixtures for Use in Highway Embankments." *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, 131(7), 914-924.
36. Kim, D., Salgado, R. and Altschaeffl, A.G. (2005). "Effects of Super-Single Tire Loadings on Pavements." *Journal of Transportation Engineering*, ASCE, 131(10), 732-743.
37. Lee, J. H. and Salgado, R. (2005). "Estimation of Footing Bearing Capacity in Sands based on CPT." *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, 131(4), 442-452.
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26. Loukidis, D., Bandini, P., Salgado, R. (2005) "Critical Seismic Coefficient using Limit Analysis and Finite Elements." Proc. 11th International Conference on Soil Mechanics and Geotechnical Engineering, ISMGE, Osaka, Japan, September 2005.
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33. Seo, H., Prezzi, M. and Salgado, R. (2008), "Settlement Analysis of Axially Loaded Piles." 6th International Conference on Case Histories in Geotechnical Engineering, Arlington, VA, August 2008.
34. Basu, D. and Salgado, R. (2008). "An Alternative Method for Determining Ground Strains for Soil-Structure Interaction Problems." Geo-Congress 2008, CD-ROM.
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3. Salgado, R. "Design of Pile Foundations". *The Encyclopedia of Life*, UNESCO.

Government, university, or industrial reports (non-refereed)

1. Bernal, A., Lovell, C., Salgado, R. (1996). Laboratory Study on the Use of tire Shreds and Rubber-Sand in Backfilled and Reinforced Soil Applications, FHWA/IN/JHRP-96/12, HPR-2087, Joint Transportation Research Program, Purdue University.
2. Lee, K., Lovell, C., Salgado, R. (1996). The Use of Pyrolyzed Carbon Black as an Additive (Part 3: Air Cooled Furnace Slag), FHWA/IN/JHRP-96/19, SPR-2096, Joint Transportation Research Program, Purdue University.
3. Karim, A., Lovell, C., Salgado, R. (1997). Building Embankments of Fly/Bottom Ash Mixtures, FHWA/IN/JTRP-97/01, SPR-2115, Joint Transportation Research Program, Purdue University.
4. Luo, X., Salgado, R., Altschaeffl, A. (1998). Cone Penetration Test to Assess the Mechanical Properties of Subgrade Soils, FHWA/IN/JTRP-98/13, SPR-2133, Joint Transportation Research Program, Purdue University.
5. Salgado, R. and Lee, J. (1999). Pile Design Based on Cone Penetration Test Results FHWA/IN/JTRP-99/08, SPR-2142, Joint Transportation Research Program, Purdue University.
6. ACI Committee 336 (2001). Reference Specifications for the Construction of Drilled Piers (336.1) & Commentary (336.1R-98), 25pp.

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8. Kim, K., Salgado, R., Lee, J. and Paik, K. (2002). Load Tests on Pipe Piles for Development of CPT-Based Design Method, FHWA/IN/JYRP-2002/4, SPR-2361, Joint Transportation Research Program, Purdue University.
9. Carraro, J. and Salgado, R. (2004). Mechanical Behavior of Non-Textbook Soils, FHWA/IN/JTRP-2004/05, Joint Transportation Research Program, Purdue University.
10. Salgado, R. and Yoon, S. (2003). Construction of Tire Shreds Test Embankment, FHWA/IN/JTRP-2002/35, Joint Transportation Research Program, Purdue University.
11. Salgado, R. and Yoon, S. (2003). Dynamic Cone Penetration Test (DCPT) for Subgrade Assessment, FHWA/IN/JTRP-2002/30, Joint Transportation Research Program, Purdue University.
12. Kim, K., Salgado, R., Lee, J. and Paik, K. (2002). Load Tests on Pipe Piles for Development of CPT-Based Design Method, FHWA/IN/JTRP-2002/04, Joint Transportation Research Program, Purdue University.
13. Salgado, R. and Kim, D. (2002). Effects of Heavier Truck Loadings and Super-Single Tires on Subgrades, FHWA/IN/JTRP-2002/20 Joint Transportation Research Program, Purdue University, Joint Transportation Research Program, Purdue University.
14. Kim, B., Yoon, S., Balunaini, U., Prezzi, M. and Salgado, R. (2006), "Determination of Ash Mixture Properties and Construction of Test Embankment - Part A", Report No. FHWA/IN/JTRP-2006/24-1, SPR-2591, Joint Transportation Research Program, Purdue University.
15. Yoon, S., Balunaini, U., Prezzi, M., Salgado, R. and Siddiki N. Z. (2006), "Determination of Ash Mixture Properties and Construction of Test Embankment - Part B", Report No. FHWA/IN/JTRP-2006/24-2, SPR-2591, Joint Transportation Research Program, Purdue University.
16. Kim, K., Prezzi, M. and Salgado, R. (2007). "Interpretation of Cone Penetration Tests in Clayey Soils." FHWA/IN/JTRP-2007/22, SPR-0622, Joint Transportation Research Program, Purdue University.
17. Basu, D., Salgado, R. and Prezzi, M. "Analysis of Laterally Loaded Piles in Multilayered Soil Deposits." FHWA/IN/JTRP-2007/23, Joint Transportation Research Program, Purdue University.
18. Balunaini, U., Yoon, S., Prezzi, M., Salgado, R. and McCullough, B. (2008). "Research and Development of More Economical Mixtures of Tire Shreds and Sands", IDEM report for project A305-4-115.
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21. Kim, D.W. and Salgado, R. (2009). "Limit States and Load and Resistance Factor Design of Slopes and Retaining Structures." FHWA/IN/JTRP-2009/xx, Joint Transportation Research Program, Purdue University.
22. Salgado, R. and Chakraborty, T. (2009). "Analysis of Pile Setup in Clay. " FHWA/IN/JTRP-2009/xx, Joint Transportation Research Program, Purdue University.

Invited publications and presentations

- Keynote Lecture - "Reutilization of Materials in Civil Engineering Constructions." Brazilian Conference on Sustainable Development, Florianópolis, Brazil, June 1996.
- Keynote Lecture - "Advances in Non-Displacement Pile Design." Deep Foundation Symposium, Porto Alegre, Brazil, October 4-5, 2004:
- Keynote Lecture - "Advanced Modeling Tools for the Analysis of Axially Loaded Piles." International Workshop on Pile Foundation Analysis and Design, Tokyo, Japan, February 2007:
- Keynote Lecture - "Modern Methods of Pile Foundation Analysis" – Daegu Annual Geotechnical Conference, Daegu, South Korea, February 2007.
- Invited Lecture (General Report) - "Analysis, design, testing and performance of foundations." - 6th International Conference on Case Histories in Geotechnical Engineering, Arlington, VA, August 2008.
- Theme Lecture - "Analysis of Single Piles: Challenges and Solutions." 12th International Conference of the International Association for Computer Methods and Advances in Geomechanics, Goa, India, October 1-6, 2008.
- Invited Lecture - "Limit Analysis of Slopes Subjected to Seismic Loadings." 11th International Conference of the International Association for Computer Methods and Advances in Geomechanics, Turin, Italy, June 2005.
- Invited Lecture - "Advances in Deep Foundation Design." Modern Trends in Geomechanics, Vienna, Austria, June 27-29, 2005:
- Invited Lecture: "Size Effects in Calibration Chamber Cone Penetration Tests." Calibration Chamber Workshop, X Brazilian Conference of Soil Mechanics and Foundation Engineering, November 1994.
- Invited Lecture: "Upper and Lower Bound Analysis for Slope Stability Assessment." Lecture given as part of panel session on slope stability analysis, San Diego ASCE convention, November 1995.
- Invited Lecture: "Future Role of Computers in Pile Design and Construction." Lecture given as part of a panel session on advanced modeling of deep foundations, Orlando, FL, February 2002.
- Invited Lecture: "Liquefaction of Silty and Clay Sands." EERI, Purdue Student Chapter, November 2002.
- Invited Lecture: "Limit States Design of Shallow Foundations." ACI Convention, September 2003, Boston.
- Invited Lecture: "Instrumented Load Tests on Closed- and Open-Ended Piles." Deep Foundations Institute 28th Annual Conference on Deep Foundations, Miami, October 2003.
- Invited Lecture: "Modern Trends in Foundation Design and Construction." Association of Developers – Sinduscon, Porto Alegre, Brazil, October 2004.
- Invited Lecture: "Recent Advances in the Design of Axially-Loaded Piles in Sandy Soils." Geo-Frontiers, Austin, January 2005.
- Invited Lecture: "Mechanical Properties of CCBP's." Seminar on Recycling Opportunities for Fly Ash and Other Coal Combustion Products in Concrete and Construction Materials. Sponsored by U.S. Environmental Protection Agency - Region 5, Chicago, IL, UWM Center for By-Products Utilization American Coal Ash Association, Headwaters, Inc., Lafarge North America, May 24, 2005, Indianapolis, Indiana.
- Invited Lecture: "Analysis of the Axial Response of Non-Displacement Piles in Sand." - Short presentation given as part of the Second Japan-U.S. Workshop on Testing, Modeling and Simulation in Geomechanics, September 8-10, 2005, Japan.
- Invited Seminar: "Penetration Resistance in Sands": Georgia Tech, April 1992; Carnegie Mellon University, April 1993; Universidade de Brasília, May 1993; University of California, Berkeley, April 1994.

Invited Seminar: "Liquefaction Potential Assessment in Sands from CPT Results": University of California, Los Angeles, June 1994.

Invited Seminar: "The Design of Drilled Shafts Using CPT Results": Universidade de Brasília, May 1995.

Invited Seminar: "Soil Liquefaction Susceptibility": Universidade Federal de Minas Gerais", May 1995.

Invited Seminar: "Interpretation of the Cone Penetration Test": Univ. Federal do Rio Grande do Sul, May 1995.

Invited Seminar: "Calibration Chamber Cone Penetration Tests": U.S. Army WES, June 1995.

Invited Seminar: "Penetration Resistance in Sands: Analysis and Applications": ASCE Indianapolis Chapter, Soil Mechanics Group, April 1997; Columbia University, May 1998.

Invited Seminar: "Graduate Studies at Purdue University": UFRGS, Porto Alegre, Brazil, July 1997.

Invited Seminar: "Foundations in Rock": Department of Transportation of Rio Grande do Sul (DAER), July 1998; Association of Construction Professionals of Bento (ASCON), July 1998.

Invited Seminar: "Interpretation of CPT Tests in Granular Soils": UFRGS, Porto Alegre, Brazil, January 1999.

Invited Seminar: "Shear Strength and Stiffness of Silty Sands": University of Western Australia, Perth, March, 2000; University of Newcastle, May 2000, ASCE Chicago Group, May 2001.

Invited Seminar: "Base Resistance of Non-Displacement Piles in Sand": University of Western Australia, Perth, April, 2000.

Invited Seminar: "Design of Pipe Piles": ASCE Indianapolis section, April, 2002.

Invited Seminar: "Modern Analysis of Pile Foundations": Korea Railway Research Institute, Seoul, February, 2007.

Invited Seminar: "Modern Analysis of Pile Foundations": University of California, San Diego, 2008.

Invited Seminar: "Modern Foundation Practices in North America." Geyer Estaqueamento, Ltda., Porto Alegre, Brazil, 2009.

X. Industry interactions

Consulting for Geyer Estaqueamento Ltda., a major foundations contractor in Brazil. Several occasions (1987-1998/2003-present). Activities included:

- foundation design for well over a hundred high-rise buildings in the following Brazilian cities: Porto Alegre, São Paulo, Camburiú, Florianópolis, Brasília, Pelotas, Caxias do Sul, and Curitiba;
- assessment of foundation adequacy for a nearly complete building that presented evidence of significant foundation movement, Brasília; design of remedial works for the same building;
- design of several drilled-shaft retaining walls (highest wall was 8 m high);
- design of soil and rock anchors;
- design of micropiles;
- design and interpretation of load tests (three instances, two in Porto Alegre, one in Brasília, Brazil) for drilled shafts ranging from 50 to 80 cm in diameter.

Consulting for ICF Kaiser Engineers, a major U.S.-based consulting company. Assessment of the validity of data from large-strain crosshole seismic tests and seismic cone penetration tests, and interpretation of results (1994).

ICF Kaiser Engineers, a major U.S.-based consulting company (with Dr. Vincent P. Drnevich, P.E.). Consulting on issues of site characterization for a power plant (1996).

ISMES, a large Italian research/consulting, mixed-capital company in Italy. Interpretation of calibration chamber tests (1993).
Participant in a team led by Douglas Environmental, an Indianapolis-based company, bidding for work on seismic slope stability studies in El Salvador (2000).
Member of ACI Comm. 336, which allows interaction with designers and builders of shallow and deep foundations.
Consulting for Alatec-Proes, a Spanish consulting company, on the stability of a caisson for a major European port (2001).
Consulting on the seismic stability of a parking garage on the Purdue Univ. campus (2003).
Consulting for Traylor Brothers, Inc. on the sinking of a caisson for a major bridge (2003-present).

XI. Service to government or professional organization

American Concrete Institute (ACI): committee no. 336, "Footings, Mats and Drilled Piers"
American Society of Civil Engineers (ASCE): "Computer Applications" committee
American Society of Civil Engineers (ASCE): publications committee and editorial board of the ASCE Journal of Geotechnical and Geoenvironmental Engineering
Brazilian Society of Soil Mechanics (ABMS): "In-situ Testing" committee