

# CURRICULUM VITAE

**DR. MIGUEL A. PANDO, P.ENG.**

**Associate Professor of Geotechnical Engineering**

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## **EDUCATION:**

- Ph.D., 2003 Civil Engineering (Geotechnical Eng.), Virginia Tech, Blacksburg, VA, USA  
M.S.C.E., 1995 Civil Engineering (Geotechnical Eng.), University of Alberta, Edmonton, Canada  
B.S.C.E., 1991 Civil Engineering, Javeriana University, Bogota, Colombia (5 yr program w/thesis)  
B.S.C.E. Courses, 01/85-06/89 Civil Engineering, National University of Asuncion, Paraguay

## **ACADEMIC AND PROFESSIONAL EXPERIENCE:**

### ***i) Academic Positions (16 years as tenure-track/tenured geotechnical faculty):***

- 09/19 - present: Associate Professor, Civil, Architectural and Environmental Engineering Dept, Drexel University  
08/10 - 08/19: Associate Professor, Department of Civil and Environmental Engineering, University of North Carolina at Charlotte (**tenured 07/14**)  
11/16 – 08/19: Assistant Director of Education and Outreach, CAMMSE Tier 1 University Transportation Center, University of North Carolina at Charlotte.  
07/11 - present: Adjunct Professor, Civil Engineering Department, University of Puerto Rico at Mayaguez (***UPRM***).  
07/15 - present: Adjunct Professor, Civil Engineering Department, Catholic University of Peru (PUCP, Lima, Peru).  
07/06 - 08/10: Associate Professor, Civil Engineering Department, University of Puerto Rico at Mayagüez (**tenured**) (Tenured conferred July 1, 2008; after 5.5 years).  
01/03 - 07/06: Assistant Professor, Civil Engineering Department, University of Puerto Rico at Mayagüez (tenure-track)  
05/04 - 07/10: Director, Geotechnical Laboratory, Civil Engineering Department, University of Puerto Rico at Mayagüez, Mayagüez, PR.  
08/98 - 12/02: Graduate Teaching Assistant (08/98-05/99) and GRA (06/99-12/02), Dept of Civil & Environmental Engineering, Virginia Tech, Blacksburg, VA.

### ***ii) Industrial/Consulting Positions:***

- 05/00 - 07/02: Geopier Foundation Co, Blacksburg, VA, Project Engineer (***Part-time***)  
05/97 - 08/98: Thurber Engineering, Toronto, Canada, Project Engineer  
09/94 - 05/97: AMEC Earth & Environmental, Edmonton, Canada, Assistant Project Engineer, Mining and Tailings Dams Group (formerly Agra Earth & Environmental).  
07/91 - 07/92: EM Modular Structures, Bogota, Colombia, Junior Structural Engineer (EIT)  
01/90 - 07/91: Bateman & Assoc., Bogota, Colombia, Geotechnical Engineering Assistant

### **iii) Visiting Appointments:**

- Visiting Professor, Civil Engineering Department, Catholic University of Peru, Lima, Peru, May-August 2018.

### **iv) Professional Engineering Licensures:**

- Canada P.Eng.: Province of Ontario [P.Eng. License PEO 90530478; active since 1997];
- Canada P.Eng.: Province of Alberta (1996-1997; Inactive);
- Colombia: Active since 1991.

### **HONORS AND AWARDS:**

- Summer 2018: ***2018 José Tola Pasquel Visiting Professor Award***, PUCP, Lima, Perú, Award (honorarium, living expenses, and airfare for Summer 2018). Competitive campus wide (only awardee for Engineering).
- May 2012: ***Civil Engineering Nominee*** for consideration of College of Engineering Graduate Teaching Award, COE, UNCC, Academic year 2012-2013.
- May 2007: ***“Best Poster Award”, WOCA 2007***; (Co-author with several students and 1 CEE colleague at UPRM).
- October 2006: ***EPA C2P2 (Coal Combustion Products Partnership) Research Award*** (with Dr. S. Hwang and 4 REU’s at UPRM).
- 2004-2005: ***“Outstanding Faculty Award”*** of the Department of Civil Engineering, University of Puerto Rico at Mayagüez. Based on teaching and research activities for the academic year 2004-2005.
- 1998: ***NSERC Doctoral Fellowship***, Natural Sciences & Engineering Research Council of Canada, (declined to attend Virginia Tech with GRA).
- 1992-1994: ***Colfuturo Postgraduate Scholarship***, Colombian Government Colfuturo Foundation, For Top BS Graduates in Colombia to Study MS and PhD Abroad). Postgraduate Scholarship MS Level, Fall 1992 to Fall 1994.
- 1991: ***Award for Highest Overall GPA***, Civil Engineering Class of 1991, Javeriana University, Bogota, Colombia.
- 1991: ***Award for Best Undergraduate Thesis***, Civil Engineering Class of 1991, Javeriana University, Bogota, Colombia.

### **RESEARCH INTERESTS:**

- Soil-structure interaction (static and dynamic).
- Geotechnical aspects of preservation of historical structures.
- Natural hazards (rainfall induced landslides; post-disaster response).
- Recycled geomaterials for infrastructure (e.g., tires, fly ash, industrial byproducts).
- Applied geotechnical engineering combining experimental and computational approaches.
- Durability of materials (FRP, adobe, other earthen materials).
- Engineering education (e.g., see NSF TUES grant and NSF RIGEE) and International engineering education and globalization (Current or recent International collaborations include: Perú: PUCP; Argentina: National U. of Cordoba; Colombia: Javeriana U; Israel: UHL; Portugal: Minho and Porto; Paraguay: UNA; Brazil: U of Brasilia; Spain, UNICAN).

## **DIVERSITY, RECRUITMENT, RETENTION, AND MENTORING OF URM STUDENTS:**

Throughout my academic career, I have been and continue to be committed to promoting diverse participation and inclusion in STEM through mentoring of underrepresented minority students (high school, undergraduate, and graduate levels), outreach activities, and research as outlined below.

- As a doctoral student, I served three summers (2000, 2001, 2002) as a mentor to visiting high school Latino students as part of the program ASPIRE at Virginia Tech. This program paired at-risk Latino students interested in STEM careers with a graduate student for a period of 10 weeks to expose students to university life and research in STEM.
- As faculty (2003-present), I have mentored over 32 undergraduate students on research projects (REU) including/as well as 17 undergraduate Latino students in undergraduate research through the NSF funded program Louis Stokes Alliance for Minority Participation (in Puerto Rico: PR-LSAMP). Many of these mentees joined MS programs at UPR Mayaguez or in mainland USA (Details on Pages 23 and 24 of this CV).
- Participated in several research programs for undergraduate students at UPR Mayaguez and at UNC Charlotte, some focused specifically on URM: PR-LSAMP, Dwight Eisenhower undergraduate fellowship program, Charlotte Research Scholars; NSF REU grants, NSF SPIDUR at UNCC, and others.
- Mentored several teams of diverse undergraduate students for the geotechnical competition of the annual ASCE regional student competitions and the ASCE Geo-congress.
- Main advisor and mentor for over 24 MS URM STEM students (Latino, Women, Native-American) (See CV pages 21 and 22).
- Designed and co-instructor of summer study abroad course in Peru involving service community projects in rural Andean region of Peru and collaborated with local Peruvian colleagues to help students understand cultural and ethical considerations of service work; participated in panel on cross-cultural perspectives to discuss equity in international engineering faculty collaborations (Summers 2012-2014).
- Recruitment of URM at the 2013 SACNAS (Society for Advancement of Chicanos/Hispanics and Native Americans in Science). Currently working with UNCC Latino faculty caucus towards establishing a SACNAS Student Chapter at our university.
- Summer camps and STEM outreach activities to middle and high schools. At UPR Mayaguez helped with activities to introduce students to geotechnical engineering, created liquefaction demo, helped with yearly Transportation Engineering summer camps, etc. At UNC Charlotte helped with NC Explore, organizer and lead coordinator of the CAMMSE summer transportation camp for middle and high school students (Summers 2017 and 2018). Organized STEM Blasters (Center for STEM Education) related to civil engineering for high school students (Summer 2018).
- As the Assistant Director of Education and Outreach for the CAMMSE Transportation Center at UNC Charlotte (2017-present) I lead all efforts related to education and outreach. This includes the design, organization, and implementation of the CAMMSE Summer Camps, K-12 STEM outreach activities, research symposia, etc.
- PI for NSF Research Initiation grant in Engineering Education: "RIGEE- Investigating the role of interaction, attitudes, and intentions for enrollment and persistence in engineering among Underrepresented Minority Students". This research project carried out with co-PIs (Dr. Brett Tempest & Dr. Sandra Dika) resulted in numerous publications (6 conference proceedings papers,

5 conference presentations, and 1 journal article) and funded two URM female doctoral students in the field of educational research (See publication section of CV).

- Proposed the Bridge to the Doctoral Program for minority students as co-PI for the NSF NEES research grant on Seismic amplifications due to Topographic Effects (PI: Adrian Rodriguez-Marek). The program involved sending Latino MS students from UPR Mayaguez to do summer research at the other participating institutions of this grant to motivate them to pursue a Ph.D. in geotechnical engineering. Program was praised by NSF as it was successful to help three Latino students to pursue Ph.D. in geotechnical earthquake engineering.
- Promote cross-cultural collaborations with several international university partners such as PUCP (Peru), Cantabria (Spain), UNA (Paraguay), Javeriana (Colombia), and other institutions.
- Recently organized and led international team of experts to assess foundation and structural problems for the Armenian Monastery of the Church of the Nativity in Bethlehem (2016-2018).
- CAMMSE: Education and Outreach Activities: Summer Camp (2017, 2018), Middle and High School Outreach Presentations (Bradford Prep School-2017/18; Cabarrus Central high – March 2019), Stem Blasters Summer 2018.

#### **ACADEMIC TEACHING EXPERIENCE:**

(Note: Courses listed with symbol § denote courses that were developed or co-developed)

##### **i) Department of Civil and Environmental Engineering at the University of North Carolina at Charlotte (UNCC):**

###### Co-instructor:

CEGR 3202 Senior Design (CEE Capstone): Every Fall and Spring from 2010 to 2018.

§ INES 8090: Dynamic Soil Structure Interaction: (with Dr. David Weggel) Spring 2013.

§ CEGR 4090: Study abroad in Peru: *Engineering for Development Workers*: Summers 2012 & 2013 (with Dr. Brett Tempest).

§ CEGR6090/MEGR8090: Discrete Element Method Theory and Applications in Engineering: (with Dr. Harish Cherukuri) - Spring 2017 (and scheduled Spring 2019).

###### Instructor:

CEGR 3990: Undergraduate research and individualized study: Spring 2011, Fall 2011, Spring 2012, Fall 2012, Fall 2013, Spring 2014, Fall 2016, Spring 2017.

CEGR 4278/5278: Geotechnical Engineering II: Spring 2012, Fall, 2013, Fall 2016

CEGR 3258: Undergraduate Geotechnical Laboratory: Summer 2012.

§CEGR 6251: Foundation Engineering: Every Fall (2010 – 2018)

CEGR 6268: Advanced Soil Mechanics (Soil Behavior): Every Fall (2011-2018)

CEGR 6254: Experimental Soil Mechanics: Every Spring (2011-2017)

§CEGR 6255: Slope Stability and Earth Structures: Spring 2014, Fall 2015, Spring 2017, Spring 2018

CEGR 6252: Soil Dynamics and Earthquake Engineering: Spring 2019.

CIV 340 (at PUCP): Slope Stability and Earth Structures: Summer 2018.

***ii) Department of Civil Engineering at the University of Puerto Rico at Mayaguez (UPRM):***  
Courses taught and developed at UPRM (from Spring 2003 to Spring 2010).

Courses developed:

INCI 5047 – Introduction to Rock Mechanics (Senior level undergraduate geotechnical elective).  
INCI6078 – Soil Behavior (Shear strength of soils) (Graduate course in geotechnical engineering).  
INCI6088 – Engineering Ground Improvement (Graduate course in geotechnical engineering).  
INCI6995 – Seepage and Consolidation (Graduate course in geotechnical engineering).  
INCI6997 – Geotechnical Earthquake Engineering (Graduate course in geotechnical engineering).

Courses co-developed:

INCI 5995 – Natural Disasters in Civil Engineering (with Dr. Jose L. Perdomo).

Other courses taught at UPRM:

INCI 4950 – Capstone in Civil Engineering (co-taught with instructors of other sub-disciplines).  
INCI 4049 – Foundations and Earth Pressures (Senior level undergraduate geotechnical elective).  
INCI 6080 – Analysis and Design of Deep Foundations (Graduate course in Geotech. Eng.)  
INCI 4995 – Undergraduate Research and Special Topics.

**SCIENTIFIC AND PROFESSIONAL SOCIETIES:**

- Professional Engineers of Ontario, Registered Professional Engineer, 1997 – present
- American Society of Civil Engineers (ASCE) and ASCE Geo-Institute
- ASTM
- Canadian Geotechnical Society
- Phi Kappa Phi Academic Honor Society
- Chi Epsilon, National Engineering Honor Society
- Earthquake Engineering Research Institute (EERI)
- Transportation Research Board, National Research Council
- Deep Foundations Institute (DFI)
- American Society of Engineering Education (ASEE)
- American Rock Mechanics Association (ARMA)
- US Society of Dams
- Geo-Engineering Earthquake Reconnaissance (GEER)
- SACNAS (2014).

## GRANTS AND CONTRACTS AWARDED:

### At University of Puerto Rico at Mayaguez (1/2003 to 7/2010):

- **\$2,150,000 (45 grants) [Assistant tenure track to Associate w/tenure].**
- **Funding per year  $\approx$  \$280,000/year** (Civil Engineering department at UPRM had only an MS for geotechnical engineering, and it is an institution with a relatively high teaching load).

### AT UNC Charlotte (Fall 2010 – present):

As a UNCC faculty Dr. Pando (Associate tenure track and tenured) has been co-PI or PI in multiples research projects. The total amount of funding obtained in 8 years at UNCC, considering only the portion corresponding to UNC Charlotte, is **\$ 5,506,390 (25 grants)**, or approximately  $\approx$  **\$670,000/year**.

The table below provide details of some of the recent projects:

No.	Title	Sponsor	Role	Period	Amount
25	TRISP Grant - Discrete Element Methods to Study Materials Processing and Material Removal Operations	TRISP, UNCC	Co-PI	7/2018-7/2019	\$27,000
24	“RAPID: Investigation of Power Grid Failure After Hurricanes Irma and Maria” (PI: Shenen Chen).	NSF	Co-PI	2/1/2018-7/30/2018	\$72,420
23	NSF-funded GEER Mission to Puerto Rico to investigate damage after hurricanes Maria-and Irma (team included OSU, USC - Dr. Sasanakul; UPRM, UNCC, industry).	GEER(NSF funds)	Co-leader	10/17-3/18	\$18,000
22	Effects of Torsion and Moment on Traffic Signal Structures’ Foundations in Coastal Conditions	NCDOT	PI	08/15/2017-07/31/2019	\$288,596
21	EPIC Research Graduate Fellowship Competition for proposed topic of offshore energy foundations (for 1 MS)	EPIC	PI	08/15/2017-05/15/2018	\$15,000
20	Center for Advanced Multimodal Mobility Solutions and Education (CammSE) - Tier I UTC Program.(Lead institution; partners: UT Austin, Washington SU, UConn, Texas Southern U) – PI: Dr. Wei Fan, UNC Charlotte	USDOT	Co-PI	12/2016 – 12/2021	\$7,800.000 (To UNCC: \$3,310,000)
19	Liquefaction and Seismic Stability of CCP containment facilities (w/co-PI: C. Hardin)	Duke Energy	PI	12/2016 – 05/2017	\$55,000
18	Preliminary Structural and Foundation Assessment of the Historic Crusader Walls and Pillars at the St. Jerome Hall, Church of the Nativity, Bethlehem	University of the Holy Land, PUCP, UNCC, U Minho, UWM	PI	6/2016 – 1/2017	\$40,000
17	Design, fabrication, & testing of a large scale in-plane flow apparatus	Confidential	PI	04/2016-08/2016	\$12.340
16	Liquefaction of Fly Ash	AEP	PI	7/2014-9/2015	\$20,000
15	Improvement of Material Criteria for Highway Embankment Construction (PI: Dr. Janardhanam, co-PI: M. Pando)	NCDOT	Co-PI	8/2014-8/2017	\$260,000
14	Preliminary Study on Guidelines For Roadway Utility Excavation Practices in NC Regions (PI: S. Chen, co-PIs: Dr. Janardhanam and M. Pando)	NCDOT	Co-PI	8/2014-8/2015	\$100,000
13	“Water repellency for ash containment and reuse”. Environmental Research and Education Foundation (co-PIs: J. Daniels and V. Ogunro).	EREF	PI	9/2014-9/2017	\$341,521
12	Soil water characteristic curves of Ash Pond Materials (co-PIs: J. Daniels and Y. Park)	Geosyntec	PI	9/2013 – 11/2013	\$3,000
11	Determination of Vertical Resistance for Sheet Pile Abutments (co-PIs: V. Ogunro & M. Whelan)	NCDOT	PI	8/2013 – 8/2016	\$231,459

**(Research funding summary table continues in next page)**

**GRANTS AND CONTRACTS AWARDED At UNC Charlotte (Continued):**

No.	Title	Sponsor	Role	Period	Amount
10	Research Initiation Grant: Investigating the role of interaction, attitudes, and intentions for enrollment and persistence in engineering among Underrepresented Minority Students (co-PIs: B. Tempest & S. Dika)	NSF EEC-1240299	PI	9/2012 – 9/2014	\$150,000
9	Evaluation of Field-Based Liquefaction Approaches for Calcareous Sands Using Shear Wave Velocity PI: C. Baxter (URI) & co-PI: R. Ramos (UPRM)	NSF CMMI-1234780	Co-PI	7/2012-7/2014	\$189,540 To UNCC: [\$23,941]
8	Interaction of Bottom Ash with Geosynthetics (co-PIs: R. Swan Jr., and Y. Park) - IDEAS -EAO Project	Geosynthec	PI	7/2012 – 7/2013	\$14,425
7	Liquefaction of Fly Ash (co-PI: Y. Park) – IDEAS -EAO Project	Confidential Consultant	PI	2/2012 – 7/2012	\$13,000
6	A Multi-Institutional Classroom Learning Environment for Geotechnical Engineering Education PI: U. El-Shamy (SMU) & co-PI: T. Abdoun (RPI)	NSF DUE-1044585 (SMU Subcontract)	Co-PI	04/2011- 03/2014	\$199,998 To UNCC: [\$25,000]
5.	Development of building materials from Wastewater Sludge Ash: Ash characterization, literature review, and materials demo PI: B. Tempest; co-PI: R Guyer	Water and Sewer Authority of Cabarrus County (WSACC)	Co-PI	6/2011 – 9/2012	\$14,750
4.	Cost effective foundations for offshore renewable energy systems (co-PI: V. Ogunro)	NC Ocean Energy Program	PI	6/2011 – 6/2012	\$50,000
3.	Performance Improvement from Deep Layers of Subgrade Stabilization (PI: V. Ogunro; co-PI: R. Janardhanam)	NCDOT	Co-PI	9/2010 – 7/2013	\$268,705
2	“NEESR-CR: Topographic Effects in Strong Ground Motion - From Physical and Numerical Modeling to Design” PI: A. Rodriguez-Marek (VT); co-PIs: B. Cox (U. Texas Austin), D. Assimaki (Georgia Tech), J. Wartman (U. Washington)	NSF CMMI # 0936543	Co-PI	10/2009 – 7/2014	\$1,199,695 To UNCC: [\$141,613]
1	“Ambient Vibrations Measurements for Estimation of Site Fundamental Periods at the City of Mayaguez, Puerto Rico” PI: L. Suarez (UPRM)	USGS-NEHRP Award G10AP00070	Co-PI	5/2010 –5/2011	\$26,550 To UNCC: [\$10,620]

**Total Amount of Grants while at UNC Charlotte (8/2010 to 11/2018): \$ 11,410,999 (25 grants with 13 as PI, 12 as co-PI) [Note: Amount includes portion to collaborating institutions].**

**Funding amount, considering only the portion to UNC Charlotte: \$ 5,506,390) ≈ \$670,000/year.**

**Note:** The above amount include multi-PI awards, but it also serves to highlight my collaborative and team-oriented approach to research.

## **PUBLICATIONS:**

**Summary:** 169 publications: 1 invited chapter, 4 conference proceedings edited, 2 special journal issues edited, 26 refereed journal papers, 85 refereed conference proceedings papers, 18 recent technical reports, 23 refereed extended abstracts and posters published in proceedings, 10 non-refereed papers.

### **P1. Books, Book Chapters, or Editor of Proceedings or Special Invited Journal Issues: (7)**

**Note:** Publications are presented in reverse chronological order, but numbered in chronological order.

7. **Co-editor:** ASCE Geo-Congress 2019: "The Eighth International Conference on Case Histories in Geotechnical Engineering ", 10 Volumes. Editors: Meehan, C.L., Kumar, S., **Pando, M.A.**, and Coe, J., ASCE Geotechnical Special Publications Nos. (10 – TBD), March 24-27, 2019, Philadelphia, PA.
6. **Invited chapter:** Aguilar, R. and Pando, M.A. (In preparation), **Chapter 7** - "Non-destructive testing tools to support the characterization of adobe constructions," In "*Structural characterization and seismic retrofitting of adobe constructions: experimental and numerical developments*", to be published 2018 with Springer International (Editors: Varum, H., Parisi, F., Tarque, N., and Silveira, D.).
5. **Co-editor:** Proceedings 2018 SAHC – "Structural Analysis of Historical Constructions: An Interdisciplinary Approach", September 11-13, 2018, Cusco, Perú; *Springer – Rilem Book Series*.
4. **Invited editor:** Special Issue in Sustainable Cities and Societies (Fall 2013): based on select papers from *ICSDEC 2012* (with Dr. Oswald Chong, The University of Kansas).
3. **Co-editor:** ASCE Geo-Congress 2013: "*Stability and Performance of Slopes and Embankments III*", Editors: Meehan, C.L., Pradel, D., **Pando, M.A.**, and Labuz, J.F., ASCE Geotechnical Special Publication No. 231, March 3-7, 2013, San Diego, CA. doi: 10.1061/9780784412787.
2. **Co-Editor:** **Pando, M.A.** with Santamarina, J. C. (2012) Special Journal Issue: *Geotechnical Research in the Americas*, in International Journal of Natural Disasters, Accidents, and Civil Infrastructure (Revista Internacional de Desastres Naturales, Accidentes e Infraestructura Civil), Issue Vol. 12, No. 1 (<http://academic.uprm.edu/laccei/index.php/RIDNAIC>).
1. **Co-Editor:** Acosta, F., **Pando, M. A.**, and Suarez, L.E. (2006) Proceedings: Development in Theoretical and Applied Mechanics, SECTAM Vol. 23., May 21-23, Mayaguez, PR, 781 p.

### **P2. Refereed Journal Papers: (27)**

**Notes:** Presented in reverse chronological order but numbered in chronological order. \*: Indicates current or former graduate student. §: Indicates article in Spanish.

27. Dika, S.L., Hunt, B.D., **Pando, M.A.**, Tempest, B.Q., and Allen, M.E. (2019), "Self-Efficacy of Engineering Transfer Students: Links to Faculty Interaction and Other Forms of Capital", International J. on Engineering, Science and Technology, Vol. 1, No. 1, pp. 1-9.
26. Feyyisa, J., Daniels, J.L., **Pando, M.A.**, and Ogunro, V.O. (2019), "Relationship between breakthrough pressure and contact angle for organo-silane treated coal fly ash", J. Environmental Technology & Innovation, Elsevier, Vol. 14, <https://doi.org/10.1016/j.eti.2019.100332>



## **P2. Refereed Journal Papers (Continued):**

25. Aguilar, R., **Pando, M.A.**, Briceño, C., Zavala, G., Castañeda, B., Perucchio, R., and Uceda, S. (2018), “Structural and Geotechnical Engineering Assessment of Huaca de la Luna – A Massive Earthen Moche Culture Pyramid in Northern Peru”, *J. of Cultural Heritage*, Elsevier, Vol. 34, pp. 83-94. (<https://doi.org/10.1016/j.culher.2018.04.006>).
24. Keatts, M.I., Daniels, J.L., Langley, W.G., **Pando, M.A.**, and Ogunro, V.O. (2018), “Apparent Contact Angle and Water Entry Head Measurements for Organo-Silane Modified Sand and Coal Fly Ash”, *ASCE J. of Geotech. & Geoenvironmental Eng.*, 144(6).
23. Dika, S., **Pando, M.**, Tempest, B., and Allen, M. (2018), “Examining the Cultural Wealth of Underrepresented Minority Engineering Persisters”, *ASCE J. of Professional Issues in Eng. Education and Practice*, Manuscript EIENG-1009.
22. Feyyisa, J., Daniels, J.L., and **Pando, M.A.** (2017), “Contact Angle Measurements for use in Specifying Organo-Silane Modified Coal Combustion Fly Ash”, *ASCE J. of Materials in Civil Engineering*, Vol. 29, No. 9, 04017096.
21. Inyang, H.I., Bae, S., and **Pando, M.A.** (2016), “Contaminant dust suppression materials: A cost-effectiveness estimation methodology”, *Measurement*, Elsevier, Vol. 93, 563-571.
20. Aguilar, R., Nakamatsu, J., Ramírez, E., Elgegren, M., Ayarza, J., Kim, S., **Pando, M.A.**, Ortega-San-Martin, L. (2016), “The potential use of chitosan as a biopolymer additive for enhanced mechanical properties and water resistance of earthen construction”, *Journal of Construction & Building Materials*, Elsevier, Vol. 114, pp. 625-637.
19. Aguilar, R., Ramirez, E., Haach, V.G., and **Pando, M.A.** (2016) “Vibration-based nondestructive testing as a practical tool for rapid concrete quality control”, *Journal of Construction & Building Materials*, Elsevier, V. 104, pp. 181-191.
18. Perdomo, J. and **Pando, M.A.** (2014), “Incorporating Natural Hazards and Mitigation Strategies Using Information Technology in the Civil Engineering Curriculum”, *ASCE Journal of Professional Issues in Engineering Education and Practice*, Vol. 140, No. 1, 10 p.
17. Cunha, R. and **Pando, M.A.** (2013), “Influence of Pile-Soil-Raft Parameters on the Behavior of Piled Raft and Conventional Piled Group Foundations”, *Soils and Rock*, Vol. 36, No. 1, 21-35.
16. Godoy, L. A., Mondragón, V., **Pando, M.A.**, and Acosta, F. (2013), “Stress redistributions in unit cells of fibre-reinforced polymer composites with interface degradation”, *International Journal of Microstructure and Materials Properties*, Vol. 8, No. 3, 185-206.
15. Pappusetty, D. \*, and **Pando, M.A.** (2013), “Numerical Evaluation of Long Term Monopile Head Behavior for Ocean Energy Converters under Sustained Low Amplitude Lateral Loading”, *International Journal of Civil and Structural Engineering*, Vol. 3, No. 4, 669-684.
14. Tempest, B.Q., and **Pando, M.A.** (2013), “Characterization and Demonstration of Reuse Applications of Sewage Sludge Ash”, *Int. Journal of GEOMATE*, Vol. 4, No. 2, 552-559.
13. El Shamy, U., Abdoun, T., McMartin, F., and **Pando, M.A.** (2013), “Integration of Centrifuge Testing in Undergraduate Geotechnical Engineering Education at Remote Campuses”, *European Journal of Engineering Education*, Vol. 38, No. 3, 268-280.
12. Sandoval, E.A. \*, and **Pando, M.A.** (2012), “Influence of sand origin and mineralogy on liquefaction resistance,” *Ingenieria y Competitividad*, Vol. 14, No. 1., 153-163. §

## **P2. Refereed Journal Papers (Continued):**

11. Sandoval, E.A.\*, and **Pando, M.A.** (2012), “Experimental Assessment of the Liquefaction Resistance of Calcareous Biogenous Sands”, *Earth Sciences Research J.*, 16(1), pp. 55-63.
10. **Pando, M.A.**, and Sandoval, E.\* (2012), “Liquefaction Susceptibility of Uncemented Calcareous Sands from Southwest Puerto Rico”, *Revista Internacional de Desastres Naturales, Accidentes e Infraestructura Civil*, Vol. 12, No. 1, pp. 51-59. §
9. Burrage, R.E., Anderson, J.B., **Pando, M.A.**, Ogunro, V.O., and Cottingham, M.A. (2012), “A Cost Effective Triaxial Test Method for Unsaturated Soils”, *ASTM Geotechnical Testing Journal*, Vol. 35, No. 1, 10 p.
8. Ruiz, M.\*, and **Pando, M.A.** (2008). “Discussion of - Predicting End Bearing Capacity of Post-Grouted Drilled Shaft in Cohesionless Soils by Gray Mullins, Danny Winters, and Steven Dapp”, *ASCE J. Geotech. and Geoenviron. Engrg.*, Volume 134, Issue 3, p. 413.
7. Acosta, F.J., Santos, J., Suárez, O.M., and **Pando, M.A.** (2007). “Raising awareness on materials recycling using undergraduate engineering research,” *International Journal of Environment and Pollution*, Vol. 31, No. 3/4, 325-341.
6. Ruiz, M.E.\* , **Pando, M.A.**, Acosta, F.J. (2005). “Análisis numérico no lineal de pilotes de material compuesto relleno de hormigón,” *Revista Internacional de Desastres Naturales, Accidentes e Infraestructura Civil*, Vol. 5, No. 2, 163-176. §
5. Botero, J.H., Valentín, M.O., Suárez, O.M., Santos, J., Acosta, F.J., Cáceres, A., y **Pando, M.A.** (2005), “Gomas trituradas: estado del arte, situación actual y posibles usos como material prima en Puerto Rico,” *Revista Internacional de Desastres Naturales, Accidentes e Infraestructura Civil*, Vol. 5, No. 1, 69-86. §
4. **Pando, M.A.**, Ruiz, M.E.\* , y Larsen, M.C. (2004), “Deslizamientos en Puerto Rico producidos por lluvias: descripción General,” *Revista Internacional de Desastres Naturales, Accidentes e Infraestructura Civil*, Vol. 4, No. 1, 53-66. §
3. **Pando, M.A.**, Filz, G., Ealy, C., Hoppe, E., (2003), “Axial and Lateral Load Performance of Two Composite Piles and One Prestressed Concrete Pile”, *Transportation Research Record: Journal of the Transportation Research Board*, Volume 1849, 61-70.
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53. Ritta, R.J., Suarez, L.E., and **Pando, M.A.** (2012), “Determinación del Período Fundamental del Suelo usando Vibración Ambiental y el Cociente Espectral Horizontal/Vertical”, Mecanica Computacional, Vol. XXXI, Eds. Cardona, Kohan, Quinteros, and Storti, Salta, Argentina, Nov. 13-16, pp. 1399-1419.
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1. **Pando, M.A.** and Robertson, P.K. (1995). “Evaluation of Shear Stress Reversal due to Earthquake Loading for Sloping Ground”, 48th Canadian Geotechnical Conference, Vancouver, B.C., September 1995, pp. 955-962.

### **P4. Select Recent Technical Reports: (18)**

18. Silva-Tulla, F. (Leader), **Pando, M.A. (co-Leader)**, Soto, A.E., Morales, A., Pradel, D., Inci, G., Sasanakul, I., Bernal, J.R., Kayen, R., Hughes, S., Adams, T., and Park, Y. (2018), “Geotechnical Impacts of Hurricane Maria in Puerto Rico”, Report GEER-057, doi:10.18118/G68083, 234 p.
17. Daniels, J.L., **Pando, M.A.**, Ogunro, V. O., Feyyisa, J.L., Dumenu, L., Moid, M.I., Rodriguez, C. (2018), “Water Repellency for Ash Containment and Reuse”, Final Report to Environmental Research and Education Foundation (EREF), June 14, 77 p.
16. **Pando, M.**, Whelan, M., Ramos, L.F., Aguilar, R., and Fratta, D. (2017), “Preliminary Structural and Foundation Assessment of the Historic Crusader Walls and Pillars at the St. Jerome Hall, Church of the Nativity, Bethlehem”, Final report to UHL, January 6, 2016, 120 p.
15. **Pando, M.**, and Park, Y. (2016), “Investigating the Liquefaction Potential of Fly Ash”, Final Report to American Electric Power Service Corporation, July 2016, 23 p.
14. **Pando, M.**, and Park, Y. (2015), “Overview of Analytical Methodologies and Procedures Commonly Used for Seismic Screening of Earth Dams in the U.S.”, Final Report to Rural Research Institute of Korea, December 12, 87 p.
13. **Pando, M.**, Ogunro, V., and Pappusetty, D. (2014), “Offshore monopile foundations”, Final Report to NC Ocean Energy Program.
12. Contributor to report as member of Technical Advisory Panel: ADSC (In press), “Synthesis Report of The State-of-The-Practice of Post-Grouting of Drilled Shaft Foundations”, Report to FHWA, Contract No. DTFH61-11-C-00049.
11. Ogunro, V.O., Janardhanam, R., and **Pando, M.A. (2013)**, “Performance Improvement from Deep Layers of Soil Stabilization”, NCDOT Final report, 248 p.

#### **P4. Select Recent Technical Reports: (Continued)**

10. **Pando, M.A.**, Swan Jr., R. H., and Park, Y. (2013), “Test results report for laboratory testing services on Bottom Ash Material”, EAO RU No. 2050, Final Report to Geosyntec Consulting, 28 p.
9. Baxter, C.D.P., **Pando, M. A.**, and Ramos, R. (2013), “Liquefaction Resistance of Calcareous Sands from Puerto Rico Using Shear Wave Velocity”, Annual Report NSF, May 2013.
8. Tempest, B.Q., **Pando, M.A.**, and Guyer, R. (2012), “Development of building materials from Wastewater Sludge Ash: Ash characterization, literature review, and materials demo,” Water and Sewer Authority of Cabarrus County (WSACC), Final Report, September 13, WSACC, IDEAS EAO Project (EAS-RU #2029), 52 p.
7. Rodriguez-Marek, A., **Pando, M.**, Cox, B., Wartman, J., Assimaki, D. (2012), “NEESR-CR: Topographic Effects in Strong Ground Motion - From Physical and Numerical Modeling to Design”, Annual Progress Report to NSF, October 15, 14 p.
6. **Pando, M.**, and Park, Y. (2012), “Experimental Assessment of Liquefaction of Fly Ash”, Confidential report to utility client, May 2012, IDEAS EAO Study , 20 p.
5. Rodriguez-Marek, A., **Pando, M.**, Cox, B., Wartman, J., Assimaki, D. (2011), “NEESR-CR: Topographic Effects in Strong Ground Motion - From Physical and Numerical Modeling to Design”, Annual Progress Report to NSF, October 15, 12 p.
4. **Pando, M.**, Ealy, C.E., Filz, G.M., Lesko, J.J., and Hoppe, E.J. (2006), “A Laboratory and Field Study of Composite Piles for Bridge Substructures”, Federal Highway FHWA-HRT-04-043, 384 p., Available online <https://www.fhwa.dot.gov/publications/research/>.
3. **Pando, M.**, Hwang, Sangchul, Guadalupe, Y., Reyes, A., Rossi, L., and Ruiz, E. (2006), “Possible Applications for Circulating Fluidized Bed Coal Combustion By-Products from the Guayama AES Power Plant”, Research Report to AES Puerto Rico, LP, Guayama, PR, March, 100 p. Available online at: <http://agremax.com/Downloads>.
2. Ruiz, M.E. and **Pando, M.A.** (2005), "Theoretical background and design charts for post grouted drilled shafts ", Research Report to A.H. Beck, San Antonio, TX, August, 33 p.
1. Ruiz, M.E. and **Pando, M.A.** (2005), “Manual for Software Synchro Pile: Analysis and design of conventional and post grouted drilled shafts,” Manual on software developed for A. H., Beck, San Antonio, TX, 25 p.

#### **P5. BS and MS Thesis and Doctoral Dissertation:**

3. Pando, M.A. (2003), “A Laboratory and Field Study of Composite Piles for Bridge Substructures ”, Ph.D. Dissertation , Civil Engineering Department, Virginia Polytechnic Institute and State University (Virginia Tech), Blacksburg, VA, Defense February 6, 2003, 424 p. (Advisor Dr. George Filz; co-Advisor: Dr. John J. Lesko).
2. Pando, M.A. (1995), “The effect of the degree of shear stress reversal on the liquefaction potential of saturated sands”, M.S. Thesis, Civil Engineering Department, University of Alberta, Edmonton, Canada, 198 p. (Advisor: Dr. Peter K. Robertson).
1. § Pando, M.A. (1991), “Seismic Design Acceleration Spectra for the City of Bogota”, B.S. Thesis in Civil Engineering Dept, Javeriana University, Bogota, Colombia, June 1991, 216 p. (Advisor: Dr. Jorge A. Prieto).

## **P6. Posters and Extended Abstracts: (23)**

*From August 2010 – present (at UNC Charlotte):* [\*: denotes presenter; ¥: graduate student]

23. Pacheco, G., Suarez, L., and \***Pando, M.A.**, (2017). “Assessment of soil inertia effects in dynamic analysis of piles under impact loading”, Extended Abstract #1145, 14<sup>th</sup> U.S. National Congress for Computational Mechanics, Minisymposium MS304 (Computational Methods and Design for Impact and Blast Problems), Montreal, Canada, July 17-18.
22. ¥Villarreal-Arango, A., Morales-Vélez, A.C., Baxter, C.D.P., and \***Pando, M.A** (2017). “Site response analysis and liquefaction potential of a calcareous sand site from Puerto Rico.” PBD-III Earthquake Geotechnical Engineering, Vancouver, BC, Canada, July 16-19, (Paper ID-260).
21. \*¥Hubbard, P., Pando, M.A. (2017). “Performance of Monopile Foundations on Ocean Energy Converters over a Lifecycle”, Poster 2017 Appalachian Energy Summit, Boone, NC, July 10-12.
20. \*Feyissa, J., Daniels, J., Pando, M., and Ogunro, V. (2016), “A Modified Wettability and Dynamic Contact Angle Measurement Technique for Water Repellent Coal Fly Ash”, Poster, Summer 2016 TRB Workshop,. Asheville, NC, July 26-29.
19. \*Livingstone, D., \*Moid, M., \*Rodriguez, C., Pando, M., Ogunro, V., Daniels, J., (2016), “Water Retention Characteristics of Coal Combustion”, Poster, Summer 2016 TRB Workshop,. Asheville, NC July 26-29.
18. \*¥Zavala, G., S. López, C. Ebinger, M. Pando, C. Lambert, S. Uceda, R. Perucchio, B. Castañeda and R. Aguilar (2014) “Preliminary geophysical survey for assessing the geotechnical conditions and geohazards at Huaca de la Luna, Perú,” Poster 2014 AGU Fall Meeting, San Francisco.
17. \*¥Sylvain, M., Pando, M., Whelan, M.J., Ogunro, V., Bents, D., and Park, C. (2014) “Comparison of Shear Wave Profiles for a Compacted Fill in a Geotechnical Pit,” Poster 2014 AGU Fall Meeting.
16. \*Foxy, K., Dika, S., Pando, M., and Tempest, B. (2013), “Pre-college experiences and perceived barriers of entering engineering students at UNC Charlotte”, Poster accepted 08/07/13, Research in STEM Education Category, Bridging the Gap STEM Education Conf., Raleigh, NC, October 14-15.
15. \*Dika, S., Tempest, B.Q., and Pando, M.A. (2013), “Engineering for Development Workers: Student perceptions of ethical responsibility and social impact”, Poster accepted 08/07/13, Research in STEM Education Category, Bridging the Gap STEM Education Conf., Raleigh, NC, Oct. 14-15.
14. \*Morales, A.C., Baxter, C.D.P., and Pando, M. A. (2013), “Liquefaction Resistance of Calcareous Sands from Puerto Rico Using Shear Wave Velocity”, Int’l Conf. on Earthquake Geotechnical Eng.: From Case History to Practice, ICEGE, 17-19 June, Istanbul, Turkey, Ext. Abstract &Poster ID 289.
13. \*Tempest, B.Q., Pando, M.A., Dika, S.L. (2013), “A Student Review of an International Service Learning Program in Peru: Successes and Lessons Learned”, Poster, ASEE Int’l Forum; Atlanta, GA; June 22, 2013.
12. \*Garcia-Theran, M. and Pando, M. (2013), " Stress-Strain Behavior and Lateral Earth Pressures of Tire Recycled Materials". UNCC Graduate Research Symposium. March 23, 2013.
11. \*Pappusetty, D. , and M. Pando. (2013), “3D Finite Element Analyses of Ocean Energy Converter Monopile Subjected to Low Amplitude Harmonic Loads”. UNCC Graduate Research Symposium. March 23, 2013.
10. \*Pando, M.A., Sandoval, E., and Catano, J. (2012), “Liquefaction Susceptibility and Dynamic Properties of Calcareous Sands from Cabo Rojo, Puerto Rico”, Poster, 15<sup>th</sup> World Conference of Earthquake Engineering (15WCEE), Lisbon, Portugal, 24-28 September, 2012.
9. Suarez-Colche, L.E., \*Pando, M.A., and Ritta, R. (2012), “Ambient Vibration Measurements for Estimation of Site Fundamental Periods -Case History of the City of Mayaguez, Puerto Rico”, Poster, 15<sup>th</sup> World Conf. of Earthquake Eng. (15WCEE), Lisbon, Portugal, 24-28 Sept., 2012.

#### **P6. Posters and Extended Abstracts: (Continued)**

8. Rodriguez-Marek, A. Assimaki, D., Pando, M., Cox, B., & Wartman, J. (2012). “NEESR-CR: Topographic Effects in Strong Ground Motion – From Physical and Numerical Modeling to Design”, Poster, 2012 NSF Eng. Research & Innovation Conf. & Quake Summit, July, Boston.
7. \*Pappusetty, D., Pando, M.A., & Ogunro, V. (2012), “Cost-effective foundation systems for NC Ocean Energy Devices”, Poster 2012 Renewable Ocean Energy Res. Symp., Nags Head, NC.
6. \*Ramirez, J.R., and Pando, M.A. (2012), “Load Tests on Drilled Shafts in Highly Weathered Rock”, Poster, Symposium of Geology Research, UPR Mayaguez, January 5-7, 2012.
5. \*Pappusetty, D., Pando, M.A., and Ogunro, V.O. (2011), “Cost-Effective Foundation Systems For North Carolina Ocean Energy Devices”, Poster, 2011 SIGMA XI Annual Meeting & Int’l Conference, 11-12 November, Raleigh, N.C.
4. \*Rice, C.D.\*, M. Pando, D. Weggel, H. Fang., (2011), “Dynamic Finite Element Analysis of Full-Scale Lateral Impact Load Tests on a Pile”, Extended Abstract, 11th U.S. National Congress on Computational Mechanics, Minneapolis, MN, July 25th, 2011.
3. Rodriguez-Marek, A. Assimaki, D., Pando, M., Cox, B., Wartman, J. (2011). “NEESR-CR: Topographic Effects in Strong Ground Motion, from Physical and Numerical Modeling to Design,” Poster 2010 NSF CMMI Conference, January 4-7, Atlanta, GA.
2. \*Irizarry, A., Bernal, D., Suarez, L., Pando, M. (2010) "Nondestructive Bridge Substructure Parameters Estimation" Poster Gordon-CenSSIS - RICC, Boston, MA, 19 October.
1. Huerta-Lopez, C.I., Pando, M.A., Suarez, L.E., Ritta, R., & Martinez-Cruzado, J.A. (2009), “Shallow Soil Layers Fundamental Vibration Mode: A Comparison of Estimations Obtained With the Random Decrement Method and H/V Spectral Ratios Using Weak and Moderate Seismic Ground Motions”, AGU Spring Meeting, Abstract #NS23B-01.

#### **P7. Non-Refereed Journal Papers: (10)**

10. Garcia-Theran, M., Caceres, A., and **Pando, M.A.** (2013), “Modulus of Elasticity of Self-Consolidating Concrete : Experimental Evaluation Under Local Conditions of Puerto Rico,” *Concrete Plant International Journal*, Vol. 5, October 2013, 8 p.
- §9. **Pando, M.** (2012), “Deep Foundations under Axial and Lateral Loading: Some Observations and Challenges”, Invited *Keynote Paper*, VII Iberoamerican Congress on Civil Engineering, Merida, Venezuela, November 22-23, 30 p.
- §8. **Pando, M.**, Mejias, M., Molina, G., and Fernos, R. (2007), “Deslizamientos de Terreno Inducidos por Lluvias Fuertes: Descripción General y Ejemplo Reciente del Oeste de Puerto Rico” , *Dimensión*, 21(2), pp. 7-14.
7. Nieves Vera, L., Alicea Gonzalez, T.J., **Pando, M.A.**, and Mejias, M. (2007). “Feasibility Study for Developing a real-time rainfall-induced landslide warning system using NASA’s multi-Satellite rainfall estimates”, paper and presentation at the 4th Meteorology Symposium, UPRM, August/07.
6. López R. R., Godoy L. A., Acosta F. J., Guevara J. O., Lluch J. F., Martínez-Cruzado J. A., Pagán-Trinidad I., **Pando, M.**, Saffar A., and Wendichansky, D. (2005), “Estimating Damage Caused by Natural Hazards for the Insurance Industry in Puerto Rico”, *Dimensión*, 19(3), 17-26.
- §5. Cataño, J., and **Pando, M. A.** (2004) “Uso de procedimiento de diseño en estado limite (LSD, LRFD) en la ingeniería geotécnica”, Segundo Congreso de Diseño y Construcción de Carreteras y Puentes, San Juan, PR, CD-Rom proceedings, 15 p.

## **P7. Non-Refereed Journal Papers: (Continued)**

- §4. Vega, M., Vargas, O., **Pando, M. A.**, and Ramos, R. (2004) “Comparación de resultados de prueba de carga estática y dinámica (PDA) en fundaciones profundas de proyectos de la ACT”, Segundo Congreso de Diseño y Construcción de Carreteras y Puentes, San Juan, PR, CD-Rom proceedings, 15 p.
3. Guevara, J. O., Pagan Trinidad, I., Maldonado Fortunet, F., Valdes Diaz, D., Pesantes, E., and **Pando, M.** (2004). “Incorporation of a Comprehensive Design Experience in the Integrated Engineering Project Design Model: The Capstone Course at UPRM.”, Proceedings of the Second Latin American and Caribbean Conference for Engineering and Technology (LACCEI), Miami, Florida, USA June 2 - 4, 2004.
- §2. Cataño, J., Llavona, A., and **Pando, M. A.** (2003) “Evaluacion del potencial de licuacion para la zona oeste de Puerto Rico:, II Congreso Colombiano de Ingenieria Sísmica, Medellín, Colombia, November 12-14, CD-Rom proceedings, 17 p.
- §1. **Pando, M.A.** and Rodriguez, E.E. (1991), "Acceleration Spectra for the Subsoils of Bogota City" Proceedings of the VII Latin-American Seminar of Seismic-resistant design Engineering, Bogota, Colombia, pp. 231-251..

## **RESEARCH ADVISEES:**

### **i) Graduate Students Supervised with Degrees COMPLETED:**

#### **Doctoral Students Supervised or Co-Supervised: (3).**

**(Notes: UPRM does not have a Ph.D. in Geotechnical Eng.; UNCC does not have a Ph.D. in CEE (or Geotechnical Eng.); CEE at UNCC participates in the interdisciplinary INES Doctoral Program).**

3. Jacob Garbini: April 2016 (Role: co-advisor; main advisor Dr. Kimberly Warren), “*Mechanical and Physical Characterization of Recycled PET Bales for use as lightweight fill*”. Infrastructure and Environmental Systems (INES) Interdisciplinary Ph.D.
2. Mauricio Garcia-Theran: July 2015 (Role: advisor), “*Engineering Characterization of Tire Derived Aggregate for Geotechnical Applications*”. Infrastructure and Environmental Systems (INES) Interdisciplinary Ph.D.
1. Alesandra Morales: November 2014 (Role: co-advisor; main advisor Dr. Chris Baxter), “*Evaluation of Field-Based Liquefaction Approaches for Calcareous Sands Using Shear Wave Velocity*”. Ph.D. in Civil and Environmental Engineering, University of Rhode Island.

#### **MS Students Supervised or Co-Supervised with Thesis or Research Project: (34).**

34. Peter G. Hubbard, November 2018, “Predicting the Unloading Behavior of Monotonically and Laterally Loaded Slender Piles Using Finite Element Method and P-Y Curves”, MS Thesis, CEE Department, UNCC (Role: Main advisor).
33. Anay Narendra Joshi, July 2018, “A Discrete Element Study of the Uniaxial Compressive response of plain concrete using the JCFPM constitutive model”, MS Thesis, MS student in Mechanical Engineering, UNCC (Role: Co-advisor; Main advisor: Dr. Harish Cherukuri).
32. Mehrab I. Moid, June 2018, “Geotechnical Assessment of Quarry Fines as a Sustainable Reuse Material for Highway Embankment Construction”, MS Thesis, CEE Dept, UNCC (Role: Main Advisor).

**MS Students Supervised or Co-Supervised with Thesis or Research Project (Continued):**

31. Nakul Tannu, April 2017, “DEM of Compression behavior of plain concrete”, Thesis, MS student in Mechanical Engineering, UNC Charlotte (Role: Co-advisor; Main advisor: Dr. Harish Cherukuri).
30. Deybi A. Chinchay-Poma, April 2017, “FEM of plain concrete in uniaxial and triaxial compression” (In Spanish), MS thesis at PUCP, Lima, Peru (Role: Main advisor; co-advisor: Dr. Rafael Aguilar).
29. Ashley C. McGovern, December 2016, “*Slope Stability Analysis of Embankment Fill Material from North Carolina Coastal Region*”, MS Thesis, CEE Dept, UNCC (Role: Main Advisor).
28. Carlos Rodriguez, November 2016, “Water-Repellent Coal Combustion Products (CCPs): Interactions with Water”, MSCE thesis, Javeriana University, Bogota, Colombia. (Role: co-advisor; Main advisor Joan Larrahondo).
27. Kishan Parmar, November 2015, “*Deep Foundation Design Considerations for Ground Mounted Solar Panel Farms*” MS Project (w/report), CEE Dept, UNCC (Role: Main Advisor).
26. Roderick Gingher, April 2014, “*Experimental Study on the Contribution of Grass to the Very Shallow Shear Strength of a Compacted Silty Sand Slope*” MS Project (w/report), CEE Dept, UNCC (Role: Main Advisor).
25. Cirilo Saba, April 2014, “*Parametric Finite Element Analyses to Assess Active and Passive Condition Development in Rigid Retaining Wall Under Translation Mode*”, MS Project (w/report), CEE Dept, UNCC (Role: Main Advisor).
24. Monty Houser, December 2013, “*Fall Cone Method as an Alternative Lab Method to Assess Liquid Limit of Fine-Grained Soils*”, MS Project (w/report), CEE Dept, UNCC (Role: Main Advisor).
23. Michael Hoff, December 2013, (Role: Co-advisor; Main advisor Dr. Brett Tempest), “The use of Resonant Frequency Testing as a method of Quality Control/ Quality Assurance for concrete in Developing Countries”, MS Project (w/report), CEE Dept, UNCC (Role: Co-Advisor; Main advisor: Dr. Brett Tempest).
22. Deepak Pappusetty, May 2013, “Finite element analyses of offshore monopole deflection accumulation under harmonic loading””, MS Thesis, CEE Dept, UNCC (Role: Main Advisor).
21. Carlos Acosta, June 2012, “Static and Dynamic Properties of Cemented Sands”, MS Thesis, CEE Dept, UNCC (Role: Main Advisor).
20. Jose R. Ramirez, June 2012, “Load transfer mechanisms of small diameter drilled shafts in a highly weathered limestone”, MS Thesis, CE Dept, UPRM (Role: Main Advisor).
19. Mandy Petrella, May 2012, “Ground improvement with incinerated sewage ash”, MS Project (w/report), CEE Dept, UNCC (Role: Main Advisor).
18. Mariely Mejias, February 2011, “Triggering Mechanisms of a Rainfall-Induced Residual Soil Slope Failure”, MS Thesis, CE Dept, UPRM (Role: Main Advisor).
17. Cesar Ramirez, May 2010, “Influence of Permeability Anisotropy on the Stability of Slopes”, MS Thesis, CE Dept, UPRM (Role: Main Advisor).
16. Ricardo Fernos, December 2009, “A Proposed Methodology for Establishing the Frequency and Magnitude of Landslide Triggering Rainstorm Events Within The Cayaguas River Watershed” , MS Thesis, CE Dept, UPRM (Role: Main Advisor).
15. Alesandra Morales, December 2009, “Moisture Effects on Short Term Durability and Mechanical Properties of Two Puerto Rico Crushed Limestone Aggregates” , MS Thesis, CE Dept, UPRM (Role: Main Advisor).
14. Omar Flores, November 2009, “Triaxial Compression of Plain Concrete”, MS Project (w/report), CE Dept, UPRM (Role: Main Advisor).

**MS Students Supervised or Co-Supervised with Thesis or Research Project (Continued):**

13. Sixto Fernandez, November 2009, “Influence of the Flexural Stiffness on the P-Y Curves of Laterally Loaded Single Piles in Sand”, MS Thesis, CE Dept, UPRM (Role: Main Advisor).
12. Juan C. Obando, June 2009, “Hygrothermal Degradation of Mechanical Properties of GFRP Composites at the Micro and Macro Scales”, MS Thesis, CE Dept, UPRM (Role: Main Advisor).
11. Edgardo Ruiz, May 2009, “Seismic Instrumentation and Analysis of the Patillas Earth Dam” (MS Thesis at UPRM).
10. Yaurel Guadalupe, December 2008, “Experimental study of expansive clays from Puerto Rico, MS Thesis, CE Dept, UPRM (Role: Main Advisor).
9. Hebenly Celis, October 2008, “Use of shredded tires as retaining wall backfill” , MS Thesis, CE Dept, UPRM (Role: Main Advisor).
8. Gloria Molina, May 2008, “Lysimeter testing of unsaturated sands” , MS Thesis, CE Dept, UPRM (Role: Main Advisor; Co-Advisor: Dr. Ingrid Padilla)
7. Eimar Sandoval, May 2008, “Liquefaction Potential of Cabo Rojo Calcareous Sands”, MS Thesis, CE Dept, UPRM (Role: Main Advisor).
6. Arleen Reyes, July 2007, “Engineering Behavior of Soft Clays Treated with Circulating Fluidized Bed Combustion Fly Ash”, MS Thesis, CE Dept, UPRM (Role: Main Advisor).
5. Carmen Y. Lugo, May 2007, “Development of a Geotechnical Database for the City of Mayagüez, Puerto Rico”, MS Project (w/report), CE Dept, UPRM (Role: Main Advisor).
4. Rafael Prieto, December 2006, “Seismic Analysis of the embedded control tower at Success Dam”, MS Thesis, CE Dept, UPRM (Role: Main Advisor).
3. Joanna Cataño, May 2006, “Stress Strain Behavior and Dynamic Properties of Cabo Rojo Calcareous Sands”, MS Thesis, CE Dept, UPRM (Role: Main Advisor).
2. Maria del C. Vega-Velez, December 2005, “Evaluation of Static and Dynamic Methods to predict axial capacity of Deep foundations using the PILEACT Database”, MS Project (w/report), CE Dept, UPRM (Role: Main Advisor).
1. Miguel Ruiz, June 2005, “Study of axially loaded post grouted drilled shafts using CPT based load transfer curves”, MS Thesis, CE Dept, UPRM (Role: Main Advisor).

**ii) Graduate Students Supervised with Degrees IN PROGRESS:**

**Doctoral Students In Progress Supervised or Co-Supervised: (5).**

1. Matt Sylvain, Expected June 2019, “Axial capacity of sheet piles for bridge abutments”. INES Interdisciplinary Ph.D.
2. Mehrdad Hassani, Expected June 2019, “Engineering properties (strength and deformation) of compacted soils for highway embankments”. INES Interdisciplinary Ph.D.
3. Guillermo Zavala, December 2019, “Frequency and amplitude earthquake loading effects in liquefaction potential of sands”, Ph.D. in Engineering, PUCP, Lima, Peru (main advisor).
4. Livingstone Dumenu, Summer 2019 (Role: co-advisor; main advisor Dr. Vincent Ogunro), “*Engineering properties of fly ash treated with Organo-silanes*”. INES Interdisciplinary Ph.D.
5. Carlos Mauricio Rodriguez, Summer 2021, Effects of Torsion and Moment on Traffic Signal Structures’ Foundations in Coastal Conditions, Main advisor, INES Ph.D.

**M.S. Students In Progress: (5).**

1. Jorge Rodriguez, Part-time, 2019, “P-Y curves for analysis of laterally loaded piles” (MS Project).
2. Charlotte Schlesinger, Part-time, 2019, “DEM analysis of active retaining wall”, MS Project.
3. Jay Cerceo, Part-time, 2019, “Load transfer analysis of axially loaded piles”, MS Project.
4. John Whipple, Part-time, 2019, “FE analysis of equalization time for unsaturated soil tests”
5. Erick Echevarria, Part-time, 2019, “Load transfer methods for axially loaded piles.”

**UNDERGRADUATE STUDENT SUPERVISION (32 undergraduate research advisees):**

I view undergraduate research as a very important and enriching experience for our students and also to help with recruiting efforts for our graduate programs. REU experiences are great for helping recruit and mentor underrepresented students. Over the years I have devoted considerable effort towards undergraduate research mentoring (32 REU students) . A list of recent undergraduate students supervised as part of an undergraduate research experience, such as REU, SPIDUR, Charlotte Research Scholars, and the course of undergraduate research or independent studies, is presented below. At UPRM several students were mentored and supervised un REU under the program PR-LSAMP and others.

1. Mr. Emilio Flores, REU UNCC Spring and Summer of 2019; Research on Local Strains in Unconfined Compression Tests of Compacted Kaolinite Samples.
2. Mr. Luis Carlos Ruiz and Mr. Alexis Picón, “Investigation of Damage in Reinforced Concrete Frames considering Differential Settlements” BS Thesis, PUCP, May 2019, Role: Co-advisor with Prof. Guillermo Zavala. (2 advisees)
3. Mr. Dalil Mechtaoui, REU Intern from Grenoble, France, Summer 2018, “Local Strains in Unconfined Compression Tests of Compacted Kaolinite Samples”.
4. Mr. El-Yazid.Lahkim-Bennani, REU Intern from Grenoble, France, Summer 2016, “Shear strength of recycled materials”.
5. Ms. Jalila Elfejjji, REU SPIDUR Program, Summer 2015, “Sedimentation characteristics of fly ash”.
6. Mr. Kenneth Vago, REU Intern from Grenoble, France, Summer 2015, “Hysteresis of SWCC”.
7. Mr. Clement Luquet, REU Intern from Grenoble, France, Summer 2014, “Geogrid-Bottom ash Pullout tests and analyses”.
8. Mr. Mauricio Gonzales: Co-Advisor Undergraduate Thesis on Ambient Vibrations to Estimate Young Modulus of Adobe (PUCP, Fall 2013 – Spring 2014).



9. Ms. Joanna Olmedo: “Fall cone device for Atterberg limit determination”, UNCC, Spring and Summer 2013
10. Mr. Adrian D. Lopera-Valle: “Modeling of continuous and particulate rubber-like materials”, Visiting senior ME student from the National University of Colombia (Medellin Campus) as part of the 2012 UNCC COE Visiting REU Scholar Summer Program (Summer 2012).
11. Ms. Carmen Andres-Garcia (visiting REU from Madrid, Spain): “Laboratory study of sewage sludge ash as soil admixture for ground improvement”; UNCC, EAO Project, (co-advisor: Dr. Brett Tempest).
12. Mr. Roderick Gingher: “Field plate load tests on biomass ash treated soils”; UNCC, EAO project, (co-advisor: Dr. B. Tempest) Spring 2012.
13. Ms. Kellie Dean, Laboratory study of biomass ash treated soils; UNCC; Summer 2011, Fall 2011 and Spring 2012, UNCC REU and EAO project. (co-advisor: Dr. B. Tempest).
14. Mr. Robert Cedar (veteran student): Build and test an acoustic CPT prototype; Summer & Fall 2012; UNCC REU funding.
15. Mr. John Whipple, Mr. Sean Windt, and Mr. Matthew Allen: Undergraduate Research on Auger Cast in Place Piles in Piedmont Soils (Fall 2010) (3 advisees).
18. Ms. Vanesa Vázquez: “Assessment of the swelling potential of the soils at the slope failure near the UPRM Plastic Arts Building,” [PR-LSMAP - REU Summer and Fall 2007].
19. Mr. Luis D. Garcia and Mr. Omar Acevedo, Mentor and advisor for the 2008 ASCE Geotechnical Competition (Reinforced Earth Competition). Finished 1st Overall. (2 advisees).
21. Mr. Heriberto Sánchez-Rivera, Mentor and advisor for the 2007 ASCE Geotechnical Competition (Reinforced Earth Competition). Finished 2nd Overall.
22. Ms. Rosana Martínez: “Role of vegetation on slope stability of tropical soil slopes”, REU Summer 2007.
23. Ms. Migdalia Carrión Alers and Ms. Julieta Gomez Fragoso: “Time Dependent Compression of Tire Derived Aggregates and its Feasibility as Lightweight Backfill for Retaining Walls” [PR-LSAMP, June 2006-December 2006].
24. Ms. Lizeidy Nieves (Civil Eng.) and Ms. Thais Alicea (Geology): “Analysis of rainfall historical data compared to NASA TRIMM satellite estimates,” REU Summer 2007 (Presentation Meteorology Symposium August 3, 2007) (2 advisees)
26. Mr. Manuel Ochoa: “Expansive soils in Puerto Rico,” Undergraduate research for INCI 5995 and undergraduate Dwight Eisenhower fellowship [August 2007-May 2008].
27. Mr. Esdras Rios and Mr. Carlos Navarro: “Retaining wall prototype testing for earth pressures generated by granular soils,” [January - August 2007] (2 advisees).
29. Mr. Edwin Gutiérrez: “Evaluation of Mechanical Properties of Puerto Rican Shredded Tires,” [PR-LSAMP, Sept 2003-Dec 2003, and Jan 2004-May 2004].
30. Mr. Ricardo Fernós: “Feasibility of a Warning System for Landslides induced by heavy rainfall in Puerto Rico,” [PR-LSAMP, Jan 2005-May 2005].
31. Ms. Migdalia Carrión Alers: “Experimental Study of Rainfall-induced Landslides: Prototype for Model Slopes with Rainfall Simulator,” [PR-LSAMP, June 2005-December 2005].

## **SELECT RECENT INVITED PRESENTATIONS (At UNCC: from Fall 2010 to present):**

(Notes: Graduate student underlined, presenter indicated with \*)

40. **Pando, M.A. (2019)** “Performance of Foundations of Coastal Infrastructure in Puerto Rico during Hurricane Maria”, Geotechnics of Natural Hazards Workshop, Purdue Geotechnical Society, April 26. 2019.
39. A. Joshi, N. Tannu, R. Aguilar, H. P. Cherukuri and **\*Pando, M.A. (2018)** “DEM and FEM Modeling of Uniaxial and Triaxial Compressive Behavior of Plain Concrete”, 2<sup>nd</sup> YADE DEM Workshop, Aix-en-Provence, France, April 27-28.
38. **\*Baez, Y.**, **\*Chen, S-E**, **\*Pando, M.**, and **\*Tang, W. (2018)**, “Impact of Natural Disasters: Post Hurricane Reconnaissance Efforts to Improve Grid Resiliency: Hurricanes Irma and Maria. EPIC Energy Seminar Series, Charlotte, NC October 17. (Co-presenter with Rapid co-PIs).
37. **\*Pando, M.A. (2018)**. “Soil Structure Interaction – Challenges and Opportunities in the Area of Deep Foundations”, Invited Seminar, Peruvian Association of Geotechnical Engineering (APGEO, Asociacion Peruana de Geotecnia), September 4, Lima, Peru.
36. **\*Pando, M.A.**, **\*Baez, Y.**, and **\*Chen S-E. (2018)**. “Post Hurricane Maria Reconnaissance Efforts to Improve Grid Resiliency,” Dinner Presentation, 2018 IAM Spring Meeting, Center for Advanced Power Engineering Research. (Main presenter with Y. Baez and S-E Chen).
35. **\*Pando, M.A.** and **\*Ogunro, V. (2017)**. “US EPA Coal Combustion Residues (CCRs) and Effluent Limitations Guideline (ELG) Regulations: Opportunities for Geosynthetics”, Invited presentation at the GeoPass II Event, Huesker Headquarters, Charlotte, NC, October 23.
34. Pacheco, G., Suarez, L., and **\*Pando, M.A.**, (2017). “Assessment of soil inertia effects in dynamic analysis of piles under impact loading”, NCCM14, Minisymposium #304, Computational Methods & Design for Impact and Blast Problems, Montreal, Canada, July 17-18.
33. \*Sylvain, M., and **Pando, M. (2016)**, “Axial Load Capacity of Steel Sheet Piles and their Potential use as Load Bearing Elements in Bridge Abutments”, Invited presentation, SuperPile 2016, DFI, Chicago, IL, June 8.
32. **\*Pando, M. (2016)**, “Deep foundations: recent research and future opportunities”, Invited seminar, University of South Carolina, Dept. of Civil and Environmental Engineering, Columbia, SC, April 22, 2016.
31. \*Sylvain, M., and **Pando, M. (2016)**, “Vertical Load Capacity of Steel Sheet Piles for Bridge Abutments”, Invited presentation at the 2016 Driven Pile Technical Seminar, PDCA of SC, March 31, The Citadel, Charleston, SC.
30. **\*Pando, M. (2015)**, “The Role of Geotechnical Engineering in Historical Preservation”, Invited speaker at Int'l Seminar on New Advances in Diagnostic and Preservation of Historical Heritage held July 3 in Lima, Peru and July 6 in Cusco, Peru.
29. **\*Pando, M.A. (2015)**. “Tire-Derived Aggregates as Backfill for Bridge Abutments Using Centrifuge Modeling Techniques”, Invited presentation for TRB Session: “Why Spin Dirt at 200 mph? Centrifuge Modeling of Transportation Geosystems”, Jan. 13, Session 209B.

### **SELECT RECENT INVITED PRESENTATIONS (Continued):**

28. \***Pando, M.A.** (2014). “Vertical Load Capacity of Steel Sheet Piles for Bridge Abutments”, Invited presenter 15<sup>th</sup> Annual Design and Installation of Cost-Efficient Piles Conference, PDCA, Salt Lake City, UT, October 9.
27. \***Pando, M.** (2014), “Geotechnical Engineering in Preservation of Historical Structures”, Presentation at the University of Rochester, October 6.
26. \***Pando, M.** (2014). “Rainfall Induced Landslides in Residual Soils”, NC ASCE Fall Conference, Asheville, Sept/ 12.
25. \*Warren, K. and \* **Pando, M.**. (2014) “Evaluation of the Composite Behavior of Structures Reinforced with Geosynthetic Inclusions for Two Unique Applications”, 2014 ASCE-NC Spring Technical Seminar, April 25.
24. \***Pappusetty, D.** and M. Pando. (2013), “3D Finite Element Analyses of Ocean Energy Converter Monopile Subjected to Low Amplitude Harmonic Loads”. UNCC Graduate Research Symposium. March 23, 2013.
23. **Pando, MA.\*** (2013), “On International Engineering Faculty Collaborations – Focus Area: Natural Hazards Mitigation”, Presented at Symp. on Cross-Cultural Perspectives on the Internationalization of Education, Pontific Catholic University of Peru, Lima, Peru, July 4, 2013.
22. \***Garcia-Theran, M.**, Caceres, A., and Pando, M. (2013), " Experimental Evaluation of the Modulus of Elasticity for Self Consolidating Concrete," Presentation at the 5th North American Conference on the Design and Use of Self-Consolidating Concrete, May 12-15, Chicago, IL,
21. \***Kane, M.R.**, Pando, M., Janardhanam, R. (2013), “Study of Concept of Virtual Learning Centers to Enhance Student Learning and Performance in Civil Engineering”, Presentation at the 2013 American Soc. of Eng. Education, North Central Section Conf., Columbus, OH, April 5-6.
20. Pando, M.A.\* (2013), “Analyses of Lateral Loaded Piles with P-Y Curves - Observations on the Effect of Pile Flexural Stiffness and Cyclic Loading”, 7th Geo3T2, NCDOT, Raleigh, NC, Thursday, April 04, 2013.
19. \*Pando, M.A. (2012), “Deep Foundations under Axial and Lateral Loading: Some Observations and Challenges”, *Keynote speaker*, VII Iberoamerican Congress on Civil Engineering, Merida, Venezuela, November 22-23, (Presentation and paper for CD proceedings).
18. \*Rice, C. D., Pando, M. A., and Weggel, D. C., (2012). “Characterization Challenges for Analyses of Single Piles under Lateral Impact Loading”, Presentation 4<sup>th</sup> Int’l Conference on Geotechnical and Geophysical Site Characterization , Porto de Galinhas, Brazil, Sept. 18-21.
17. \*Pappusetty, D., Pando, M.A., and Ogunro, V.O. (2012), “Cost-effective foundation systems for North Carolina Ocean Energy Devices”, Poster and presentation at the 2012 Renewable Ocean Energy Research Symposium, 6 -7 June, Nags Head, NC
16. \*Pando, M., Suarez, L.E., Rodriguez-Marek, A., Dika, S.L., Wartman, J., Asimaki, D., and Cox, B.R. (2012), “A Bridge to the Doctoral Program Strategy for Increasing Latinos in the Earthquake Engineering Professoriate”, Presentation 119<sup>th</sup> ASEE Annual Conf. & Expo, June 10-13, San Antonio, TX, Session T653: Mentoring Graduate Students - Diversity and Assessment.
15. Weggel, D., Whelan, M.J., Pando, M., Cherikuri, H., Fang, H., Keanini, R., Turas, E. (2011) “Introduction to the ISERRT Concept," 1<sup>st</sup> Infrastructure Security and Emergency Responder Research and Training (ISERRT) Seminar, UNC Charlotte, November 16.

### **SELECT RECENT INVITED PRESENTATIONS (Continued):**

14. Weggel, D., Whelan, M.J., Pando, M., Cherikuri, H., Fang, H., Keanini, R., Turas, E. (2011) "Introduction to the ISERRT Concept," 1st Infrastructure Security and Emergency Responder Research and Training (ISERRT) Seminar, UNC Charlotte, November 16.
13. \*Pando, M.A. (2011), "Soil Liquefaction: An update on the ongoing debate with the simplified screening method", *Invited Seminar*, UPRM EERI Student Chapter, UPRM, Mayaguez, PR, November 22, 2011.
12. Pando, M.A. (2011), "P-Y Curves for Analysis of Laterally Loaded Deep Foundations: Overview, Advantages, and Limitations", • *Invited speaker*, NC ASCE Fall Annual Conference, Raleigh, NC, August 25-26, 2011.
11. Pando, M.A., Garcia-Theran, M\*, Celis, H., and Abdoun, T, (2011), "Lateral Pressures Generated on Retaining Structures with Recycled Tire Derived Aggregate Backfill," presentation ASTM Int'l Symp. on Testing & Specification of Recycled Materials for Sustainable Geotechnical Construction, Baltimore, MD, February 3<sup>rd</sup>, 2011.
10. Pando, M.\* and Garcia-Theran, M. (2011). "Tire Derived Aggregates as a Sustainable Backfill or Inclusion for Retaining Walls and Bridge Abutments," The 6<sup>th</sup> Geo3T2 Conference and Expo April 6<sup>th</sup>, 2011, Raleigh, NC.
9. Ruiz, E.\*, and Pando, M. (2011). "Use of Ambient Vibration Measurements to Infer Dynamic Properties of Poorly Characterized Old Earth Dams – A Case History from Puerto Rico", ASCE GeoFrontiers 2011 Conference, March 13-16, Dallas, TX
8. Guadalupe-Torres, Y.\*, and Pando, M. (2011). "A Case History of Expansive Clays in Southwest Puerto Rico", ASCE GeoFrontiers 2011 Conference, March 13-16, Dallas, TX.
7. Morales, A.\*, and Pando, M. (2011). "Moisture Effects on Two Crushed Limestone Aggregates", ASCE GeoFrontiers 2011 Conference, March 13-16, Dallas, TX.
6. Garcia-Theran, M., Pando, M, Tempest, B.\* (2011) "Tire Derived Aggregate as a Sustainable Recycled Material for Retaining Wall Backfill." International Conference on Sustainable Design and Construction, March 23-25, Kansas City, MO.
5. Pando, M.\* (2011), "Impact loading on piles", ISERRT Presentation, ISERRT Event No. 1, UNC Charlotte, November 16, 2011.
4. Pando, M\*. (2011) "Cost-effective foundations for offshore renewable energy systems", Presentation at the NC Ocean Energy Program, Raleigh, NC, June 22-23, 2011.
3. Rice, C.D.\*, M. Pando, D. Weggel, H. Fang., "Dynamic Finite Element Analysis of Full-Scale Lateral Impact Load Tests on a Pile", Presentation 11<sup>th</sup> U.S. National Congress on Computational Mechanics, Minneapolis, MN, July 25<sup>th</sup>, 2011.
2. Pando, M.A. (2011), "Liquefaction of Calcareous sands from Puerto Rico", Presentation at GeoLatina 2011, 6-9 October, Atlanta, GA.
1. Pando, M.A. (2011), "Overview Geotechnical research at UNC Charlotte", Presentation at GeoLatina 2011, 6-9 October, Atlanta, GA.

### **SOFTWARE: (2)**

1. Synchro Pile Visual Basic Software for Analysis and design of conventional and post grouted drilled shafts, developed with MSCE advisee Miguel E. Ruiz, June 2005 for A. H., Beck, San Antonio, TX.
2. NinerPile – Software for analysis of laterally loaded single piles with nonlinear flexural stiffness and unloading phase, developed with MSCE advisee Peter Hubbard, December 2018.

## **SERVICE ACTIVITIES:**

### **University Service:**

#### **a) At UNCC (August 2010 – present):**

##### Appointed Committees:

- Member, INES PhD Program Admissions and Advisory Committee (2013-present).
- Member, CEE Curriculum Committee (2012-present).
- Member, Selection Committee for Harshini V. de Silva Graduate Mentor Award (2017-present).
- Member, Search committee for CEE Department Chair, (Committee Chair: Dr. J. Bowen).
- UNCC Faculty representative to UNC System Faculty Assembly (2015-2017).
- Member, College Promotion and Tenure Committee (2016-2017)
- Member, Departmental Promotion and Tenure Committee (2015-2016)
- Member, CEE Sustainability Committee (2011-2015).
- Member, CEE Laboratory/Writing Committee (2012-2015).
- Member, COE Laboratory Safety Committee (2013 – 2015).
- Member, Search committee, EPIC High Bay Experimental Faculty position (Chair: Dr. D. Weggel).

##### Other University Service:

- Geotechnical Area Coordinator (2017-present)
- Developed, organized, and led Summer Camp on Transportation Engineering, Summer 2017 and Summer 2018 as part of EOT activities for UTC CAMMSE.
- Organized STEM Blasters Week (June 2018) as part of of EOT activities for UTC CAMMSE.
- Faculty mentor, Geotechnical team, GeoPile 2017 Competition, ASCE Carolinas Conference at UNC Charlotte, Charlotte, NC, April, 2017 (First place).
- Represent UNC Charlotte at 2013 SACNAS Conference, San Antonio, TX, to recruit Latino graduate students and post-doctoral fellows (travel funded by Advance and COE October 2013).
- Interim Leader of the EPIC Infrastructure Cluster (Fall 2011-Fall 2012).
- UNC Charlotte Geotechnical FE Review Sessions, Fall 2010, Spring 2011, Fall 2011, Spring 2012, Spring 2013, Spring 2014, Spring 2015, Spring 2016.
- Co-organizer with Dr. Harish Cherukuri of a Summer REU program involving 5 visiting students from Medellin, Colombia to come to UNC Charlotte for a 6-week research internship. REU program sponsored by COE (Summer 2012).
- Reviewer EPIC Scholarships and Fellowships (2011, 2012).
- Reviewer for INES applicants to UNCC scholarships/fellowships (2013 – Cato Fellowship)
- Represent CEE at “Explore UNC Charlotte” November 19<sup>th</sup>, 2011.

## **SERVICE ACTIVITIES (Continued):**

### **b) At UNCC (August 2010 – present) (Continued):**

- Member, Internal UNCC Review Panel (for Dr. Sam Lopez), The Tomorrow Fund Scholarship for Hispanics (2013 competition - May 2013 and 2014 Competition - May 2014).
- Election officer for the 2013-2014 Hispanic/Latino Caucus Officers (March 2013).
- ISERRT Facility collaborator and researcher (2011 – present).
- Guest lecture on “Introduction to Geotechnical Engineering” to freshmen in course ENGR1202 (Dr. W. Saunders): Fall 2010, Spring 2011, Fall 2011, Spring 2012, Fall 2012, and Spring 2013.
- Teaching evaluator, Geotechnical Engineering I, NSF TUES Grant, Dr. Kimberly Warren (attended several lectures during Fall 2012 and Spring 2013; prepared written reports).
- Organized invited lectures by national and international faculty such as: Dr. Carlos Santamarina (Georgia Tech – Spring 2011); Dr. Luis Godoy (UPRM, National U. of Cordoba – Fall 2011); Dr. Renato Cunha (University of Brasilia – Fall 2011); Dr. Ever Barbero (West Virginia University; Spring 2014); Dr. Pedro Amaya (AES, EPIC/CEE seminar Fall 2015); Dr. Mauricio Gonzalez (IH Cantabria, University of Cantabria) (Fall 2017).
- Helped organized Plaxis Short Course at UNC Charlotte (December 2017).

### **Scholarly Service in My Discipline:**

#### Editorship:

- Co-editor, Proceedings 2019 ASCE GeoCongress, Philadelphia, PA
- Co-editor, Proceedings 2018 SAHC Conference, Cusco, Peru.
- Co-editor, Proceedings 2013 ASCE Geocongress.
- Guest editor, *Journal of Sustainable Cities and Society*, Elsevier, Special Issue on Sustainable Geotechniques
- Guest editor, Special Journal Issue entitled: *Geotechnical Research in the Americas*, in International Journal of Natural Disasters, Accidents, and Civil Infrastructure (Revista Internacional de Desastres Naturales, Accidentes e Infraestructura Civil), Issue Vol. 12, No. 1 (<http://academic.uprm.edu/laccei/index.php/RIDNAIC>).

#### Editorial Board Member:

- Editorial board member, International Journal of Geotechnical Engineering, Taylor & Francis.
- Editorial board member, Revista Internacional de Desastres Naturales e Infraestructura Civil, University of Puerto Rico at Mayaguez.
- Editorial board member, International Journal of GEOMATE - Geotechnique, Construction Materials and Environment, Tsu, Mie, Japan (<http://www.gi-j.com/>)
- Editorial board member, The Electronic Journal of Geotechnical Engineering, ([http://www.ejge.com/Index\\_ejge.htm](http://www.ejge.com/Index_ejge.htm))
- Editorial board member, ISET Journal of Earthquake Technology.

## **SERVICE ACTIVITIES (Continued):**

### **Conference Organization:**

- Organizing committee member and Co-Editor: 2018 SAHC – “Structural Analysis of Historical Constructions: An Interdisciplinary Approach”, September 11-13, Cusco, Perú. Proceedings to be published by *Springer – Rilem Book Series*.
- Session Chair for Session 1 (July 17) of Minisymposium MS304 – Computational Methods and Design for Impact and Blast Problems, Montreal, Canada, part of the 14<sup>th</sup> U.S. National Congress for Computational Mechanics, USNCCM14.
- Session Chair for Session on “Characterization of Coal Combustion Residuals”, with Dr. John Daniels, for ASCE Geo-Congress 2014, Atlanta, GA.
- Organizing committee member and Co-Editor: 2013 ASCE Geo-Congress 2013: "*Stability and Performance of Slopes and Embankments III*" (ASCE Geotechnical Special Publication No. 231, March 3-7, 2013, San Diego, California).
- Co-Organizer, Geo-Latina 2011 – International Gathering of Latinamerican Geotechnical Engineering Professors and Researchers, with Dr. J.C. Santamarina, Atlanta, GA, October 7-8, 2011.
- Session Chair, Session: “Sustainable Geotechniques”, ASCE 2012 Int. Conf. on Sustainable Design, Engineering, and Construction (ICSDEC 2012), Ft. Worth, TX, Nov. 7-9.
- Session Co-Chair, Session 7G: “Seismic Hazards and Mitigation”, ASCE GeoFrontiers 2011 Conference, March 15, Dallas, TX.
- Session Chair, 2019 Geo-congress, Session Top-Down Construction.

### **Panelist and Reviewer for Scientific Organizations:**

- Panelist and Reviewer for National Science Foundation panel: CMMI - Blast, Collapse, and Fire (January/09).
- Panelist and Reviewer for National Science Foundation panel: ITEST (April/09).
- Panelist and Reviewer for National Science Foundation panel: CMMI - Geotechnical Panel (January 2010, January 2016, December 2017).
- Panelist and Reviewer for National Science Foundation panel: Graduate Research Fellowships (Fall 2013, Spring 2013, Spring 2014).
- Scientific reviewer for proposals submitted to USGS Hydrogeology Program (2012).
- External reviewer of proposal submitted to American Petroleum Institute (2012).
- External reviewer of proposal submitted to the Louisiana EPSCOR program (2011).

### **c) At UPRM (2003-2010):**

- Member, Departmental Graduate Committee, 2003-2010.
- Member, Graduate Committee of the UPRM College of Engineering, 2004-2006.
- Member, Advisory Board Committee, Civil Infrastructure Center, 2004-2010
- Reviewer, Revista Internacional de Desastres Naturales e Infraestructura Civil
- Director, Geotechnical Laboratory, Department of Civil Engineering, UPRM, 2004-2010.
- Mentor: PR-LSAMP (over 12 undergraduate students, 2004-2010)

## **SERVICE ACTIVITIES (Continued):**

### **At UPRM (2003-2010) (Continued):**

- Faculty co-Advisor, UPRM-EERI Student Chapter, 2007-2010 (Main advisor: Dr. Luis Suarez).
- Co-editor, Proceedings: Development in Theoretical and Applied Mechanics, SECTAM Vol. 23., 781 p., held at Mayaguez, PR.
- Session Chair, “Post-grouted drilled shafts”, ASCE Geo-Congress 2009, IFCEE, Orlando, FL, March 16.
- Developed undergraduate course on Natural hazards Mitigation in Civil Engineering;
- Contributor to the Landslide Mitigation Program of Puerto Rico.
- Free consulting services to UPRM on university facilities:
  - Inspection Stefani Building: Cracks in walls and floor (May 2008).
  - Foundation for sculpture outside the UPRM library.
  - Damage of retaining wall Dean of students building.
  - Slope stability and erosion at the Oro creek at UPRM.
- Outreach:
  - Presentation and demonstrations to high school students about geotechnical engineering.
  - Several presentations to incoming freshmen about geotechnical engineering.

### **Other General Service:**

- Mentor ASCE geotechnical teams from UNC Charlotte 2011,2015, 2017.
- Charlotte Geotechnical Group, Board Member and Co-organizer of kick-off meeting at CEE, UNCC, September 26<sup>th</sup>, 2013. Meetings held at UPRM 2-4 times a year.
- External reviewer doctoral dissertation for Mr. Aditya Parihar, Indian Institute of Science, Bangalore, India (May 2015).
- External Examiner, Ph.D. Dissertation of Mr. Cristhian Mendoza, University of Brasilia, Advisor: Dr. Renato Cunha; defense September 27<sup>th</sup> 2013 in Brasilia, Brazil.
- Committee member, MSCE thesis students Saulo Lopez and Eduardo Ramirez, Civil Engineering student, PUCP, Lima, Peru (Defended April 2016).
- Advisor MSCE thesis student Deybi Lopez, Civil Engineering, PUCP, Lima, Peru.
- Post Earthquake Reconnaissance trip for the Pisco, Perú Earthquake of August 15, 2007. Trip from the 2<sup>nd</sup> to the 6<sup>th</sup> of September 2007, for the Puerto Rico Strong Motion Program.
- NSF SGER – Reconnaissance trip to affected areas by Hurricane Katrina (September 2005).
- February 21, 2007 – Judge in the 2007 ASCE Geo-Institute National Student Geotechnical Competition.
- Member, Advisory Board and Technical Committee, 12<sup>th</sup> International Conference of International Association for Computer Methods and Advances in Geomechanics, October, 2008, Goa, India



## **SERVICE ACTIVITIES (Continued):**

### **Other General Service (Continued):**

- Reviewer for several geotechnical journals, including: ASCE Journal of Geotechnical and Geoenvironmental Engineering, Canadian Geotechnical Journal, ASTM Geotechnical Testing Journal, International Journal for Natural Disasters, Accidents and Civil Infrastructure (RIDNAIC), Geological and Geotechnical Engineering, Journal of Soil and Water Conservation, ISET Indian Journal of Earthquake Technology, International Journal of Natural Disasters in Infrastructure and Civil Engineering, International Journal Geomate, etc.
- Reviewer for several geotechnical specialty conferences, including: ASCE Geo-Congresses (2005 - 2014), TRB (2005-2014), 2008 IACMAG, LACCEI (2004, 2005), SECTAM XXII 2006, ICSDEC, etc.

### **Appointments on Professional Technical Committees:**

2010-present:	Member, Embankments, Dams, and Slopes Committee, ASCE-Geo-Institute.
2010-present:	Member, Technical Committee 210: Dams and Embankments, International Society of Soil Mechanics and Geotechnical Engineering.
2006-2014:	Member, TRB Soil & Rock Properties Committee (AFP30), Transportation Research Board, National Research Council.
2008-2014:	Member, TRB Foundations of Bridges and Other Structures Committee (AFS30), Transportation Research Board, National Research Council.
2008-2014:	Member, Modeling Techniques in Geomechanics Committee (AFS50), Transportation Research Board, National Research Council.
2008 – present:	Member, ASTM Committee D18 (Soil and Rock) and Subcommittees D18.05 (Strength and Compressibility of Soils), D18.09 (Cyclic and Dynamic Properties of Soils), and D18.11 (Deep Foundations).
2007-2010:	Member, Engineering Geology and Site Characterization Committee, Geo-Institute, ASCE.
2007-2009:	Member, Shallow Foundations Committee, Geo-Institute, ASCE.
2005-2007:	Member, Seismic and Lateral Load Committee, Deep Foundation Institute.

## **SELECT CONSULTING EXPERIENCE:**

**External Geotechnical Consultant** - New Highway Alberdi to Pilar for International Consortium in Asuncion Paraguay, December 2018 to May 2019).

- New highway from Alberdi to Pilar in Paraguay.
- Involves subgrade ground improvement to treat dispersive soils.
- Evaluation of foundation design of 5 bridges or overpasses.
- **Consulting while at the University of North Carolina at Charlotte**, 2010 – Present
  - Geotechnical aspects associated with dispersive soils along proposed new road alignment in Paraguay (expected Spring 2019).
  - Liquefaction analyses of Riverbend Dykes for ESP Associates (2015).
  - Liquefaction screening SC industrial development for ESP Associates (2015).
  - Seepage analyses and slope stability review for Gavel & Dorn, LLC (2015).
- **Consulting while at the University of Puerto Rico**, 2004 – 2010
  - Geotechnical analyses for several Puerto Rico Highway & Transportation Authority bridge projects, for Dr. J. Bernal, 2004-2005.
  - Geotechnical evaluation for a school with slope stability problems, for Dr. R. Ramos, 2005.
  - Evaluation of Retaining Wall Stability, for Dr. Juan Carlos Virella, 2007
  - Finite Element Analyses for highway expansion over water supply pipeline, for Dr. Juan C. Virella, 2007
  - Analysis of Laterally Loaded Piles for Highway Bridge in San German, for Dr. Juan C. Virella, 2008.
  - Landslide assessment and remediation options for Morovis landslide, for Dr. Juan C. Virella, 2009.
- **Geopier Foundation Company**, Blacksburg, Virginia, USA. May 2000 – July 2002.
  - Geotechnical Designer of Geopier Rammed Aggregate Piers (part-time), Assisted chief technical officer with geotechnical designs for several types of projects throughout the USA
- **Thurber Engineering Ltd.**, Toronto, Ontario, Canada. May 1997 – August 1998.
  - Geotechnical Engineer for Thurber Engineering, a geotechnical consulting firm specializing in foundations, slope stability, highway, and tunnel design for residential, industrial, and government construction projects. Geotechnical Engineer duties included residential and industrial foundation design, tunnel, slope stability assessment and remediation, finite element analyses of dams, tunneling projects, field exploration, laboratory testing, design of geotechnical solutions, and preparation of geotechnical reports.
- **AMEC Earth & Environmental**, Edmonton, Alberta, Canada. September 1994 – May 1997.
  - Geotechnical Engineer specializing in tailing dam design, as well as more traditional foundations, slope stability, and highway design for residential, industrial, and government construction projects. Project engineer on a variety of geotechnical assignments including residential and industrial foundation design, tunnel and excavation design, liquefaction evaluation, tailings dam design, slope stability assessment and remediation, heavy mining and industrial foundation design, finite element stress analysis and seepage analyses, field exploration and laboratory testing, design of geotechnical solutions, and preparation of geotechnical reports. Seepage modeling and FEM stress-strain analyses of several dams for the Suncor and Syncrude Oil Sand Mining Companies in Northern Alberta, Canada.
- **Guillermo Gonzalez & Co. Limited**, Colombia, Junior Structural Engineer, July 1991 - July 1992
- **Bateman Ingenieria Ltd.**, Colombia, Geotechnical Engineering Assistant, Jan. 1990 – July 1991