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Associate Professor of Geotechnical Engineering

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I. EARNED DEGREES

Ph.D.	Geotechnical Engineering	Georgia Institute of Technology
May 2004	**Thesis Title:** Fabric Formation and Control in Fine-Grained Materials	**Minor:** Chemical Phenomena in Geomaterials
MSCE 1999	Geotechnical Engineering *Environmental Geotechnics*	Georgia Institute of Technology
BSCE 1998	Civil Engineering *Environmental Engineering*	Georgia Institute of Technology
BA 1998	Natural Sciences *Mathematics Core*	Our Lady of the Lake University San Antonio, Texas

II. EMPLOYMENT

2017-present	Associate Professor	University of Tennessee
2012-2017	Assistant Professor	University of Tennessee
2005-2011	Assistant Professor	Pennsylvania State University
2004-2005	Post Doctoral Fellow *Particulate Media Research Laboratory*	Georgia Institute of Technology
2000-2003	Graduate Research Assistant *Particulate Media Research Laboratory*	Georgia Institute of Technology
1998-2000	Graduate Research Assistant *Environmental Geotechnics Laboratory*	Georgia Institute of Technology
1998-1999	Research Assistant	Georgia Tech Research Institute
1997-1998	Undergraduate Research Assistant *Environmental Geotechnics Laboratory*	Georgia Institute of Technology

III. SCHOLARLY ACCOMPLISHMENTS

A. BOOK CHAPTER

Reddy, K.R., Bohnhoff, G.L., Palomino, A.M., & Santagata, M.C. (2019), "Fundamental Research on Geochemical Processes for the Development of Resilient and Sustainable Geosystems", In *Geotechnical Fundamentals for*

Addressing New World Challenges, N. Lu, & J. K. Mitchell (eds.), 169-192, Springer. https://doi.org/10.1007/978-3-030-06249-1

B. ARTICLES ACCEPTED OR PUBLISHED IN REFEREED JOURNALS

p = Faculty member's Ph.D. student
m = Faculty member's Master's student

Nagaraja, B., Janga, J. K., pHossain, S., Verma, G., Palomino, A. M., and Reddy, K. R. (2024). "Novel Chitosan-Based Barrier Materials for Environmental Containment: Synthesis, Characterization, and Contaminant Removal Capacities and Mechanisms", *Chemosphere*, 359, 142285. https://doi.org/10.1016/j.chemosphere.2024.142285

Lee, J., Fratta, D., and Palomino, A.M. (2024). "The Effect of Diatom Content on the Physical, Electrical and Mechanical Properties of Soils", *Acta Geotechnica*, 19(4), 2251-2271. https://doi.org/10.1007/s11440-023-02036-7.

Fatema, N., Bhatia, S. K., and Palomino, A. M. (2024). "Measurement of Yield Stress and Flow Potential of Fly Ash Slurries Using a Rheometer", *Indian Geotechnical Journal*, 54(2), 514-529. doi:10.1007/s40098-023-00789-2

pHalder, B.K. and Palomino, A.M. (2024). "Meso-Scale Behavior of Montmorillonite Clay Modified by a Responsive Polymer", *Journal of Materials in Civil Engineering*, 36(2), 04023568. https://doi.org/10.1061/JMCEE7.MTENG-15578

pMahalder, B., Schwartz, J. S., Palomino, A. M., & Zirkle, J. (2024). "Influence of Cumulative Effective Stream Power on Scour Depth Prediction Around Bridge Piers in Cohesive Bed Sediments", *Transportation Research Record*, 2678(9), 710-723. https://doi.org/10.1177/03611981241230514

Verma, G., Janga, J.K., Reddy, K.R., and Palomino, A.M. (2024). "Phosphate Removal from Synthetic Stormwater Using Chitosan and Clay", *Journal of Hazardous, Toxic, and Radioactive Waste*, 28(1). https://doi.org/10.1061/JHTRBP.HZENG-1270

Fatema, N., Bhatia, S.K., and Palomino, A.M. (2023). "Flow Behavior of Impounded Fly Ash Slurries Using Flow Test", *Fuel*, 339, 126906. https://doi.org/10.1016/j.fuel.2022.126906

pJedari, C., Drumm, E.C., and Palomino, A.M. (2022). "Approximation of the Time Rate of Consolidation for Hydraulically Placed Fine Coal Refuse Using a Variable Coefficient of Consolidation Method", *International Journal of Geomechanics*, 22(1), 04021251. https://doi.org/10.1061/(ASCE)GM.1943-5622.0002241

[p]Mahalder, B., Schwartz, J.S., Palomino, A.M., and Zirkle, J. (2021), "Scour Hole Development in Natural Cohesive Bed Sediment around Cylinder-Shaped Piers Subjected to Varying Sequential Flow Events", *Water*, 13, 3289. https://doi.org/10.3390/w132289

[p]Mahalder, B., Schwartz, J.S., Wynn-Thompson, T.M., Palomino, A.M., and Zirkle, J. (2021), "Comparison of Erodibility Parameters for Cohesive Streambank Soils between an In-situ Jet Test Device and Laboratory Conduit Fume", *Journal of Hydraulic Engineering*, 148(1), 04021055. https://doi.org/10.1061/(ASCE)HY.1943-7900.0001938

Manz, K.E., Palomino, A.M., Cyr, H. and Carter, K.E. (2021). "Shale Particle Interactions with Organic and Inorganic Hydraulic Fracturing Additives", *Applied Geochemistry*, 127, 104901. https://doi.org/10.1016/j.apgeochem.2021.104901

[p]Jedari, C., Palomino, A.M., and Drumm, E.C. (2021). "Influence of Flocculant on Flow Behavior and Undrained Shear Strength of Fine Coal Refuse", *Fuel*, 287, 119456. https://doi.org/10.1016/j.fuel.2020.119456

Pham, P.T., Federico-Perez, R.A., Fine, K.L., Matzek, L.W., Carter, K.E., Palomino, A.M., and Xue, Z.-L. (2020). "Sustained Release of Persulfate from Inert Inorganic Materials for Groundwater Remediation", *Chemosphere*, 259, 127508. https://doi.org/10.1016/j.chemosphere.2020.127508

[p]Jedari, C., Palomino, A.M., Cyr, H., and Drumm, E.C. (2020). "Comparison of Hydrometer Analysis and Laser Diffraction Method for Measuring Particle and Floc Size Distribution Applied to Fine Coal Refuse", *Geotechnical Testing Journal*, 43(6), 1418-1435. https://doi.org/10.1520/GTJ20180344

[p]Halder, B.K., Palomino, A.M., and [m]Hicks, J. (2018). "Influence of Polyacrylamide Conformation on Fabric of "Tunable" Kaolin-Polymer Composite", *Canadian Geotechnical Journal*, 55(9), 1295-1312. https://doi.org/10.1139/cgj-2017-0200

[p]Mahalder, B., Schwartz, J.S., Palomino, A.M., and Zirkle, J. (2018). "Estimating Erodibility Parameters for Streambanks with Cohesive Soils Using the Mini Jet Test Device: A Comparison of Field and Computational Methods", *Water*, 10(3), 304. https://doi.org/10.3390/w10030304

[p]Mahalder, B., Schwartz, J.S., Palomino, A.M., and Zirkle, J. (2018). "Relationships between Physical-Geochemical Soil Properties and Erodibility of Streambanks Among Different Physiographic Provinces of Tennessee, USA". *Earth Surface Processes and Landforms*, 43(2), 401-416. https://doi.org/10.1002/esp.4252

[p]Tang, X., Palomino, A.M. and Stoffels, S.M. (2016). "Permanent Deformation Behavior of Reinforced Flexible Pavements Built on Soft Soil Subgrade". *Road Materials and Pavement Design*, 17(2), 311-327. http://dx.doi.org/10.1080/14680629.2015.1080179.

[m]Plaks, N.T., Palomino, A.M., Scheetz, B.E., and [m]Braun, G.D. (2016). "Testing Framework for Analysis of Time-Dependent Behavior of Coal Combustion Products". *Journal of Materials in Civil Engineering*, 28(1), 06015004-1 – 06015004-9. https://doi.org/10.1061/(ASCE)MT.1943-5533.0001326

[p]Tang, X., Stoffels, S.M., and Palomino, A.M. (2016). "Mechanistic-Empirical Approach to Characterizing Permanent Deformation of Reinforced Soft Soil Subgrade". *Geotextiles and Geomembranes*, 44(3), 429-441. http://dx.doi.org/10.1016/j.geotexmem.2015.06.004

[m]Bishop, M.D., [p]Kim, S., Palomino, A.M., and Lee, J.-S. (2014). "Deformation of "Tunable" Clay-Polymer Composites". *Applied Clay Science*, 101, 265-271. https://doi.org/10.1016/j.clay.2014.08.014

[p]Tang, X., Stoffels, S.M., and Palomino, A.M. (2013). "Resilient and Permanent Deformation Characteristics of Unbound Pavement Layers Modified by Geogrids". *Transportation Research Record: Journal of the Transportation Research Board*, 2369, 3-10. https://doi.org/10.3141/2369-01

[p]Tang, X., Palomino, A.M., and Stoffels, S.M. (2013). "Reinforcement Tensile Behavior Under Cyclic Moving Wheel Loads". *Transportation Research Record: Journal of the Transportation Research Board*, 2363, 113-121. https://doi.org/10.3141/2363-13

[p]Tang, X., Stoffels, S.M., and Palomino, A.M. (2013). "Evaluation of Pavement Layer Moduli Using Instrumentation Measurements". *International Journal of Pavement Research and Technology*, 6(6), 755-764. http://dx.doi.org/10.6135/ijprt.org.tw/2013.6(6).755

DeJong, J.T., Soga, K., Kavazanjian, E., Burns, S., Van Paassen, L.A., Al Qabany, A., Aydilek, a, Bang, S.S., Burbank, M., Caslake, L.F., Chen, C.Y., Cheng, X., Chu, J., Ciurli, S., Esnault-Filet, A., Fauriel, S., Hamdan, N., Hata, T., Inagaki, Y., Jefferis, S., Kuo, M., Laloui, L., Larrahondo, J., Manning, D.A.C., Martinez, B., Montoya, B.M., Nelson, D.C., ***Palomino, A.***, Renforth, P., Santamarina, J.C., Seagren, E.A., Tanyu, B., Tsesarsky, M., and Weaver, T. (2013). "Biogeochemical Processes and Geotechnical Applications: Progress, Opportunities and Challenges", *Géotechnique*, 63(4), 287-301. https://doi.org/10.1680/geot.SIP13.P.017

[p]Kim, S., Motyka, M.A., Palomino, A.M., and Podraza, N.J. (2012). "Conformational Effects of Adsorbed Polymer on Swelling Behavior of Engineered Clay Minerals". *Clays and Clay Minerals*, 60(4), 363-373. https://doi.org/10.1346/CCMN.2012.0600403

[p]Kim, S., Palomino, A.M., and Colina, C.M. (2012). "Responsive Polymer Conformation and Resulting Permeability of Clay-Polymer Nanocomposites". *Molecular Simulation*, 38, nos. 8-9, July-August 2012, 723-734. https://doi.org/10.1080/08927022.2012.678346

Maurer, B.W., Gustafson, A.C., Bhatia, S.K., and Palomino, A.M. (2012). "Geotextile Tube Dewatering of Flocculated, Fiber Reinforced Fly-Ash Slurry". *Fuel*, 97, 411-417. https://doi.org/10.1016/j.fuel.2012.02.013

Rostami, J., Gharahbagh, E.A., Palomino, A.M., and Mosleh, M. (2012). "Development of Soil Abrasivity Testing for Soft Ground Tunneling Using Shield Machines". Tunnelling and Underground Space Technology, 28, 245-256. https://doi.org/10.1016/j.tust.2011.11.007

[p]Kim, S. and Palomino, A.M. (2011). "Factors Influencing the Synthesis of Tunable Clay-Polymer Nanocomposites using Bentonite and Polyacrylamide". *Applied Clay Science*, 51(4), 491-498. https://doi.org/10.1016/j.clay.2011.01.017

Gharahbagh, E.A., Rostami, J. and Palomino, A.M. (2011). "New Soil Abrasion Testing Method for Soft Ground Tunneling Applications". *Tunnelling and Underground Space Technology*, 26(5), 604-613. https://doi.org/10.1016/j.tust.2011.04.003

Palomino, A.M., [p]Kim, S., Summitt, A., and Fratta, D. (2011). "Impact of Diatoms on Fabric and Chemical Stability of Diatom-Kaolin Mixtures". *Applied Clay Science*, 51, 287-294. https://doi.org/10.1016/j.clay.2010.12.002

[m]Kim, S. and Palomino, A.M. (2009). "Polyacrylamide-Treated Kaolin Clay: A Fabric Study". *Applied Clay Science*, 45(4), 270-279. https://doi.org/10.1016/j.clay.2009.06.009

[p]Tang, X., Chehab, G., Palomino, A.M. (2008). "Evaluation of Geogrids for Stabilising Weak Pavement Subgrade". *International Journal of Pavement Engineering*, 9(6), 413-429. https://doi.org/10.1080/10298430802279827
Cortes, D.D., Kim, H.-K., Palomino, A.M., and Santamarina, J.C. (2008).

"Rheological and Mechanical Properties of Mortars Prepared with Natural and Manufactured Sands". *Cement and Concrete Research*, 38, 1142-1147. https://doi.org/10.1016/j.cemconres.2008.03.020

Palomino, A.M., Burns, S.E., and Santamarina, J.C. (2008). "Mixtures of Fine-Grained Minerals – Kaolinite and Carbonate Grains". *Clays and Clay Minerals*, 56(6), 599-611. https://doi.org/10.1346/CCMN.2008.0560601

Guimaraes, M.S., Valdes, J.R., Palomino, A.M., and Santamarina, J.C. (2007). "Aggregate Production: Fines Generation During Rock Crushing". *International Journal of Mineral Processing*, 81(4), 237-247. https://doi.org/10.1016/j.minpro.2006.08.004

Palomino, A.M. and Santamarina, J.C. (2005). "Fabric Map for Kaolinite: Effects of pH and Ionic Concentration on Behavior". *Clays and Clay Minerals*, 53(3), 211-223. https://doi.org/10.1346/CCMN.2005.0530302

Palomino, A.M. and Grubb, D.G. (2004). "Recovery of Dodecane, Octane, and Toluene Spills in Sandpacks Using Ethanol". *Journal of Hazardous Materials*, 110, 39-51. https://doi.org/10.1016/j.jhazmat.2004.02.035

C. ARTICLES ACCEPTED OR UNDER REVIEW IN REFEREED CONFERENCE PROCEEDINGS

p = Faculty member's Ph.D. student

Nagaraja, B., Janga, J. K., pHossain, S., Verma, G., Palomino, A. M., & Reddy, K. R. (2024), "Contaminant Removal by Chitosan-Bentonite, Chitosan-Biochar, and Chitosan-Bentonite-Biochar Composites", In GenenvironMeet 2024. **Accepted**.

Reddy, K. R., Nagaraja, B., and Palomino, A. M. (2024), "Chitosan-Biochar Composite for Environmental Remediation: Enhanced Phosphate Removal from Stormwater", In GeoMandu 2024. **Under Review**.

Nagaraja, B., & Reddy, K. R., and Palomino, A. M.(2025), "Nitrate Removal from Stormwater Using Chitosan and Bentonite", In Geotechnical Frontiers 2025. **Under Review**.

D. ARTICLES PUBLISHED IN REFEREED PROCEEDINGS

p = Faculty member's Ph.D. student
m = Faculty member's Master's student

Chandregowda, S. A., Bhatia, S. K., & Palomino, A. M. (2024). "Molecular Dynamic Simulation Study on Interaction Mechanism between Biopolymer and Kaolinite. GeoAmericas 2024 - 5th Pan-American Conference on Geosynthetics, In E3S Web of Conferences, 569, 19005, EDP Sciences. doi:10.1051/e3sconf/202456919005

Verma, G., Janga, J. K., Reddy, K. R., and Palomino, A. M. (2024). "Influence of Chitosan and Bentonite Characteristics on Phosphate Removal from Stormwater", In Geotechnical Special Publication Vol. 2024-February, 591-601. doi:10.1061/9780784485330.060

Thompson, J.N., Skutnik, A., Coble, J.B., Khojandi, A., Palomino, A.M., Keppens, V., and Kilic, O. (2022). "Creating Pathways for Success and Engagement for Women in Engineering". Proceedings, 2022 CoNECD (Collaborative Network for

Engineering & Computing Diversity). February 20-23, New Orleans, LA, American Society for Engineering Education (ASEE) PEER. https://peer.asee.org/39111

[p]Jedari, C., Palomino, A. M., Drumm, E.C., and Boles, D. R. (2019). "In Situ Characteristics of Fine Coal Refuse". In *Geotechnical Special Publication 311,* Proceedings, 8th International Conference on Case Histories in Geotechnical Engineering. March 24-27, 2019, Philadelphia, PA. ASCE Press, Reston, VA. 13-20. doi:10.1061/9780784482131.002.

[p]Jedari, C., Palomino, A.M., and Drumm, E.C. (2018), "Compressibility of Fine Coal Refuse", *Geotechnical Special Publication 296*, Proceedings, IFCEE 2018, March 05-10, 2018, Orlando, FL, ASCE Press, Reston, VA, 455-462. https://ascelibrary.org/doi/10.1061/9780784481592.045

[p]Jedari, C., Palomino, A.M., Cyr, H., Drumm, E.C., and Boles, D. (2017). "Grain and Floc Size Distribution Analysis of Fine Coal Refuse Slurry". *Proceedings of the 19th International Conference on Soil Mechanics and Geotechnical Engineering, Seoul 2017*, September 17-22, 2017. https://www.issmge.org/uploads/publications/1/45/06-technical-committee-01-tc101-28.pdf

[p]Halder, B., [m]Bishop, M., Palomino, A.M., and Lee, J.-S. (2017). "Compressibility of a "Tunable" Clay-Polymer Composite". *Geotechnical Special Publication 276*, Proceedings, Geotechnical Frontiers 2017: Waste Containment, Barriers, Remediation, and Sustainable Geoengineering, March 12-15, 2017, Orlando, FL, T.L. Brandon and R.J. Valentine, eds., ASCE Press, Reston, VA, 423-433. https://ascelibrary.org/doi/10.1061/9780784480434.046

[p]Halder, B.K. and Palomino, A.M. (2016). "The Shear Strength of "Tunable" Clay-Polymer Composite Under Various Ionic Concentration Conditions". *Geotechnical Special Publication 272*, Proceedings, Geo-Chicago 2016: Sustainability, Energy, and the Environment, August 14-18, 2016, Chicago, IL, K.R. Reddy, N. Yesiller, D. Zekkos, A. Farid, and A. De, eds., ASCE Press, Reston VA, 61-72.
doi: 10.1061/9780784480151.007 . *candidate's Ph.D. student.

[p]Mahalder, B., Schwartz, J., Palomino, A., and Zirkle, J. (2016). "Relationship between Cohesive Soil Erosion Behavior and the Physical and Geochemical Properties of Soil in Tennessee, USA". Proceedings, World Environmental and Water Resources Congress 2016: Hydraulics and Waterways and Hydro-Climate/Climate Change, May 22-26, 2016, West Palm Beach, FL, C.S. Pathak and D. Reinhart, eds., ASCE press, Reston, VA, 352-361.
doi: 10.1061/9780784479872.036. *candidate's Ph.D. student (co-advisor).

Retherford, J.Q. and Palomino, A.M. (2014). "Departmental Implementation of ASCE's ExCEEd Teaching Principles". Proceedings of the 2014 ASEE Southeastern Section Conference, March 30-April 1, 2014, Mercer University, Macon, GA. http://se.asee.org/proceedings/ASEE2014/Papers2014/84.pdf

[p]Tang, X., Stoffels, S., Palomino, A.M. (2014). “Mechanistic-Empirical Performance Prediction of Geogrid-Modified Soft Soil Subgrade”. *Geotechnical Special Publication 234*, Proceedings, Geo-Congress 2014: Geo-Characterization and Modeling for Sustainability, Atlanta, Georgia, February 23-26, 2014, , M. Abu-Farsakh and L.R. Hoyos, eds., ASCE Press, Reston VA, 3054-3061. doi: 10.1061/9780784413272.297. *candidate’s Ph.D. student.

[p]Kim, S. and Palomino, A.M. (2013). “Affects of $CaCO_3$ on Kaolin: Fabric, Shear Strength, and Deformation”. Proceedings of the Workshop on Experimental Micromechanics for Geomaterials, Joint Workshop of the ISSMGE TC101-105, The University of Hong Kong, Hong Kong, 23-24 May 2013. *candidate’s Ph.D. student.

[p]Kim, S., Palomino, A.M., and Podraza, N.J. (2012). “Characterization of Adsorbed Polymer Conformational Response Using Spectroscopic Ellipsometry”. *Geotechnical Special Publication 225*, Proceedings, Geo-Congress 2012: State of the Art and Practice in Geotechnical Engineering, March 25-29, 2012, Oakland, California, R. D. Hryciw, A. Athanasopoulos-Zekkos, and N. Yesiller, eds., ASCE Press, Reston VA, 1136-1145. *candidate’s Ph.D. student. https://doi.org/10.1061/9780784412121.117

[m]Plaks, N.T., Palomino, A.M., and Scheetz, B.E. (2012). “Testing Framework Development for Use of CCPs in Large-Volume Applications”. *Geotechnical Special Publication 225*, Proceedings, Geo-Congress 2012: State of the Art and Practice in Geotechnical Engineering, March 25-29, 2012, Oakland, California, R.D. Hryciw, A. Athanasopoulos-Zekkos, and N. Yesiller, eds., ASCE Press, Reston VA, 3765-3774. *candidate’s MS student. https://doi.org/10.1061/9780784412121.386

Gharahbagh, E. A., J. Rostami, and A. M. Palomino (2010). "Tool wear issue in soft ground tunneling, developing a reliable soil abrasivity index." In *North American Tunneling Conference*, June 2010, 19-23.

Palomino, A.M., [m]Kim, S., Summitt, A. and Fratta, D. (2010). “Influence of Ionic Concentration and Internal Porosity on the Behavior of Diatom-Clay Mixtures”. *Geotechnical Special Publication 199*, Proceedings, GeoFlorida 2010: Advances in Analysis, Modeling & Design, February 20-24, 2010, West Palm Beach, Florida, D. Fratta, A. J. Puppala, B. Muhunthan, eds., ASCE Press Reston, VA, 628-637. *candidate’s Ph.D. student. https://doi.org/10.1061/41095(365)60

[p]Tang, X., Palomino, A.M., and Chehab, G.R. (2008). “Laboratory Evaluation of Geogrids for Flexible Pavement Reinforcement”. Proceedings of GeoAmericas 2008: The First Pan American Geosynthetics Conference & Exhibition, March 2-5, 2008, Cancun, Mexico, R.J. Bathurst and E.M. Palmeira, eds., 973-982. *candidate’s Ph.D. student.

[p]Tang, X., Chehab, G.R., Palomino, A.M. (2008). “Accelerated Testing of Geogrid-Reinforced Subgrade in Flexible Pavements”. *Geotechnical Special Publication*

178, Proceedings, GeoCongress 2008: Geosustainability and Geohazard Mitigation, March 9-12, 2008, New Orleans, LA, K.R. Reddy, M.V. Khire, and A.N. Alshawabkeh, eds., ASCE Press, Reston, VA, 1049-1056. *candidate's Ph.D. student. https://doi.org/10.1061/40971(310)131

[p]Tang, X., Chehab, G.R., Palomino, A.M., Allen, S.R. and Sprague, C.J. (2008). "Laboratory Study on the Effects of Geogrid Properties on Subgrade Stabilization of Flexible Pavements". *Geotechnical Special Publication 178*, Proceedings, GeoCongress 2008: Geosustainability and Geohazard Mitigation, March 9-12, 2008, New Orleans, LA, K.R. Reddy, M.V. Khire, and A.N. Alshawabkeh, eds., ASCE Press, Reston, VA, 1089-1096. *candidate's Ph.D. student.
https://doi.org/10.1061/40971(310)136
Palomino, A.M. and Santamarina, J.C. (2008). "Fine-Grained Mixtures: Fabric Formation and Control". *Geotechnical Special Publication 179*, GeoCongress 2008: Characterization, Monitoring, and Modeling of GeoSystems, March 9-12, 2008, New Orleans, LA, A.N. Alshawabkeh, K.R. Reddy, and M.V. Khire, eds., ASCE Press, Reston, VA, 229-236. https://doi.org/10.1061/40972(311)29

Santamarina, J.C., Valdes, J.R., Palomino, A., Alvarellos, J. (2005). "Viscous Effects in Particulates". Proceedings, International Union of Theoretical and Applied Mechanics (IUTAM) Symposium on Physicochemical and Electromechanical Interactions in Porous Media, Kerkrade, The Netherlands, 18-23 May, 2003, J.M. Huyghe, P.A.C. Raats, and S.C. Cowin, eds., Springer Netherlands, The Netherlands, 45-52.
ISBN 978-1-4020-3864-8

Palomino, A.M. and Grubb, D.G. (2002). "Recovery of Simulated LNAPL Spills in Sandpacks using Ethanol". Environmental Geotechnics – Proceedings of the 4th International Congress, Rio de Janeiro, Brazil, 11-15 August 2002, L.G. de Mello and M. Almeida, eds., Balkema, Lisse, The Netherlands, Vol. 2, 1059-1068.

Santamarina, J.C., Klein, K.A., Palomino, A., and Guimaraes, M.S. (2001). "Micro-Scale Aspects of Chemical-Mechanical Coupling: Interparticle Forces and Fabric". Chemo-Mechanical Coupling in Clays - From Nano-scale to Engineering Applications - Proceedings of the Workshop, Maratea, 28-30 June 2001, C. Di Maio, T. Hueckel, and B. Loret, eds, Balkema, Rotterdam, 47 – 64.
Grubb, D.G., and Palomino, A.M. (1998). "Review of Technologies for Management of NAPL Contaminated Sites". Symposia Brasileiro De Geotecnia Ambiental, Sao Paulo, Brazil, 29-30 September, 1998.

E. PUBLICATIONS IN CONFERENCE PROCEEDINGS - OTHER

[p]Faculty member's Ph.D. students
[m]Faculty member's Master's students

[p]Mahalder, B., Schwartz, J.S., Palomino, A.M. and Papanicolaou T.N. (2016). "Critical Shear Stress Measurement of Cohesive Soils in Streams: Identifying

Device-Dependent Variability Using an In-Situ Jet Test Device and Pressurized Laboratory Flume". American Geophysical Union (AGU), San Francisco, CA, December 12-16, 2016. **Refereed abstract**.

[p]Kim, S. and Palomino, A.M. (2009). "Factors Influencing Montmorillonite Intercalation by Polyacrylamide". The 46th Annual Meeting of the Clay Mineral Society: Clays of the Big Sky, June 5-11, 2009, Billings, MT, USA. **Refereed abstract**.

F. REPORTS

Palomino, A.M. (2024). "Collaborative Research: Development of Novel Chitosan-Biochar-Bentonite Composite Barrier Resilient to Changing Climate: Synthesis, Characterization, and Containment Mechanisms", Annual Report, submitted to National Science Foundation, 08/09/2024.

Palomino, A.M. (2023). "Collaborative Research: Development of Novel Chitosan-Biochar-Bentonite Composite Barrier Resilient to Changing Climate: Synthesis, Characterization, and Containment Mechanisms", Annual Report, submitted to National Science Foundation, 07/12/2023.

Palomino, A.M. and Gulzar, S.M. (2022). "Corrosion Impacts on Design Capacity of Rock Dowels Under Shear Displacement", submitted to the University of Tennessee Graduate School in fulfillment of the Student-Faculty Research Award.

Palomino, A.M. and Mobley, S.J. (2022). "Design Considerations and Limitations of Rock Dowels/Anchors Loaded in Shear". Research Final Report submitted to the Tennessee Department of Transportation, Long Range Planning Research Office & Federal Highway Administration, Report Number RES #2020-14, 107pp. https://www.tn.gov/content/dam/tn/tdot/long-range-planning/research/final-reports/res2020-final-reports/RES2020-14_Final_Report_Approved.pdf

Palomino, A.M. (2021). "Networking and Collaboration Fellowship Seed Grants: Use of Biopolymers as an Additive for Flow Reduction of Waste Slurries", GeoTechnical Women Faculty Project Final Report, submitted to Syracuse University.

Drumm, E.C., Palomino, A.M. (2018). "Rheology of Fine Coal Refuse and Observations of In situ Characteristics", Final Technical Report, submitted to Office of Surface Mining Reclamation and Enforcement, U.S. Department of the Interior, MCR Grants, OSM Agreement S15AC20024.

G. PRESENTATIONS

p = Faculty member's Ph.D. student
m = Faculty member's Master's student
* = presenter

*Chandregowda, S., Bhatia, S., & Palomino, A. (2024). “Molecular dynamic simulation study on interaction mechanism between biopolymer and kaolinite”, GeoAmericas 2024 5th Pan-American Conference on Geosynthetics, April 28-May 1, 2024, Toronto, Canada.

Verma, G., Janga, J. K., Reddy, K., & *Palomino, A. M. (2024). “Influence of Chitosan and Bentonite Characteristics on Phosphate Removal from Stormwater”, Geo-Congress 2024: Bridging Government, Industry, and Academia for Resilient Mega-Communities, February 25-28, 2024, Vancouver, Canada.
*Palomino, A.M., “Flow Behavior and Undrained Shear Strength of Fine Coal Refuse (FCR)”, University of Illinois, Chicago, invited seminar speaker, Department of Civil, Materials, and Environmental Engineering, September 30, 2022.

*Thompson, J.N., *Skutnik, A., Coble, J.B., Khojandi, A., Palomino, A.M., Keppens, V., and Kilic, O. (2022). “Creating Pathways for Success and Engagement for Women in Engineering”. 2022 CoNECD (Collaborative Network for Engineering & Computing Diversity). February 20-23, New Orleans, LA, American Society for Engineering Education (ASEE) PEER.

Keynote Presentation. *Palomino, A.M. (2018). “Fundamental Aspects of Responsive “Tunable” Clay-Polymer Composites”, Interdisciplinary Workshop on Polymers in Geotechnical and Geoenvironmental Engineering: From Nano Scale to Field/Engineering Applications, October 11-12, 2018, Ruhr-Universität Bochum, Bochum, Germany.

p,*Jedari, C., Palomino, A.M., and Drumm, E.C. (2018). “Compressibility of Fine Coal Refuse”, IFCEE 2018, March 05-10, 2018, Orlando, FL.

p,*Halder, B.K. and Palomino, A.M. (2016). “The Shear Strength of “Tunable” Clay-Polymer Composite Under Various Ionic Concentration Conditions”. Geo-Chicago 2016: Sustainability, Energy, and the Environment, August 14-18, 2016, Chicago, IL.

*Palomino, A.M. (2016). “Engineered Soils Using a Functional Polymer: Tunable Clay-Polymer Composites. Workshop on Geotechnical Fundamentals in the Face of New World Challenges, July 17-19, 2016, National Science Foundation, Arlington VA.

p,*Mahalder, B., Schwartz, J.S., Palomino, A.M. and Zirkle, J. (2016). “Relationship Between Cohesive Soil Erosion Behavior and the Physical and Geochemical Properties of Soil in Tennessee, USA”. World Environmental & Water Resources Congress (EWRI), West Palm Beach, FL, May 22-26, 2016.

p,*Mahalder, B., Schwartz, J., Palomino, A.M., and Zirkle, J. (2015), “In-Situ Critical Shear Stress and Erodibility Coefficient Measurement of Cohesive Soils Using the Mini-Jet Tester: Relations Among Stream Properties and Tester Pressure

Settings", EWRI 2015, World Environmental & Water Resources Congress, May 17-21, 2015, Austin, TX.

*Retherford, J.Q. and Palomino, A.M. (2014). "Departmental Implementation of ASCE's ExCEEd Teaching Principles", *Proceedings of the 2014 ASEE Southeastern Section Conference*, March 30-April 1, 2014, Mercer University, Macon, GA.

[p,]*Tang, X., Stoffels, S., Palomino, A.M. (2014). "Mechanistic-Empirical Performance Prediction of Geogrid-Modified Soft Soil Subgrade", Geo-Congress 2014: Geo-Characterization and Modeling for Sustainability, Atlanta, Georgia, February 23-26, 2014.

*Palomino, A.M. (2013). "Materials Research: Tunable Composites, Beneficial Use of CCPs, and Engineered Mineral Mixtures", Peter Liaw Research Group, Department of Materials Science & Engineering, August 14, 2013. Invited presentation.

*Palomino, A.M. (2013). "Engineered Soils Using a Functional Polymer: Tunable Clay-Polymer Composites", Syracuse University, Dept. of Civil & Environmental Engineering, Dr. Shobha Bhatia research group, June 25, 2013. Invited presentation.

[p,]*Tang, X., Stoffels, S.M., and Palomino, A.M. (2013), "Resilient and Permanent Deformation Characteristics of Unbound Pavement Layers Modified by Geogrids", Transportation Research Board 92nd Annual Meeting, January 13-17, 2013, Washington, D.C.

[p,]*Tang, X., Palomino, A.M., and Stoffels, S.M. (2013), "Reinforcement Tensile Behavior Under Cyclic Moving Wheel Loads", Transportation Research Board 92nd Annual Meeting, January 13-17, 2013, Washington, D.C.

*Palomino, A.M. (2012). "Engineered Soils Using a Functional Polymer: Tunable Clay-Polymer Composites", University of Tennessee, Department of Earth and Planetary Sciences Seminar Series, September 20, 2012. **Invited presentation**.

*Palomino, A.M. (2012). "Characterization of Coal Combustion Products for Beneficial Use", ASCE Knoxville Branch Meeting Seminar, August 24, 2012.

*Palomino, A.M. (2012). "Engineered Soils Using a Functional Polymer: Tunable Clay-Polymer Composites", University of Tennessee, Dept. of Civil & Environmental Engineering Seminar Series, February 2012.

*Palomino, A.M. (2010). "Influence of Ionic Concentration and Internal Porosity on the Behavior of Diatom-Clay Mixtures", Georgia Institute of Technology, Geosystems Graduate Seminar Series, October 2010.

*Palomino, A.M. (2010). “Influence of Ionic Concentration and Internal Porosity on the Behavior of Diatom-Clay Mixtures”, ASCE Geo-Institute GeoFlorida 2010: Advances in Analysis, Modeling & Design, February 20-24, 2010, West Palm Beach, Florida.

*Palomino, A.M. (2009). “Imaging Techniques and Their Application to Civil Engineering Materials”, Penn State University, Geotechnical and Materials Engineering Graduate Seminar Series, October 2009.

p,*Kim, S. and Palomino, A.M. (2009). “Factors Influencing Montmorillonite Intercalation by Polyacrylamide”, The 46th Annual Meeting of the Clay Mineral Society, June 5-11, 2009, Billings, MT, USA.

p,*Tang, X., Palomino, A.M. and Chehab, G. (2008). “Laboratory Evaluation of Geogrids for Flexible Pavement Reinforcement”, GeoAmericas 2008: The First Pan American Geosynthetics Conference & Exhibition, March 2-5, 2008, Cancun, Mexico.

*Palomino, A.M. (2008). “Effects of Geogrid Properties on Subgrade Stabilization of Flexible Pavements”, University of Wisconsin-Madison, Graduate Seminar Series, Invited Speaker, April 2008.
*Palomino, A.M. (2008). “Polyacrylamide-Treated Kaolin Clay: Fabric Formation”, University of Wisconsin-Madison, Graduate Seminar Series, Invited Speaker, April 2008.

pTang, X., Chehab, G.R., *Palomino, A.M., Allen, S.R. and Sprague, C.J. (2008) “Effects of Geogrid Properties on Subgrade Stabilization of Flexible Pavements”, GeoCongress 2008, The Challenge of Sustainability in the Geoenvironment, March 9-12, 2008, New Orleans, LA.

*Palomino, A.M. (2008). “Fine-Grained Mixtures: Fabric Formation and Control”, GeoCongress 2008, The Challenge of Sustainability in the Geoenvironment, March 9-12, 2008, New Orleans, LA.

*Palomino, A.M. (2006). “Mortars Made with Manufactured Sands: Flow, Stiffness and Strength”, Pennsylvania State University, Pavements Engineering Seminar Series, University Park, Pennsylvania, October 2006.

*Palomino, A.M. (2005). “The Behavior of Kaolinite-Calcium Carbonate Mineral Mixtures”, International Workshop of Young Doctors in Geomechanics, Ecole Nationale des Ponts et Chaussées, Champs-sur-Mame, France, November 23, 2005. **Invited presentation**.

*Palomino, A.M. (2005). “Fabric Formation and Control in Fine-Grained Materials”, Lehigh University, Civil Engineering Seminar Series, Bethlehem, Pennsylvania, October 28, 2005.

*Palomino, A.M. (2005). “Crushed Stone: Manufactured Sand, High-Performance Bases”, Georgia Crushed Stone Association 2005 Management Workshop, Atlanta, Georgia, February 22, 2005.

*Palomino, A.M. (2004). “Manufactured Sands and Fines”, Technical Forum on Construction Aggregates, a collaboration between the Georgia Crushed Stone Association, Georgia Department of Transportation and Georgia Tech, September 29, 2004.

*Palomino, A.M. (2004). “Mining Research at Georgia Tech”, Georgia Mining Association 2004 Summer Environmental Seminar, Cartersville, Georgia, August 12, 2004.

*Palomino, A.M. (2004). “Fabric Formation and Control in Fine-Grained Materials”, Georgia Institute of Technology Geosystems Seminar Series, January 23, 2004.

*Palomino, A.M. (2002). “Inferring Clay Fabric Through Macroscale Testing”, Georgia Institute of Technology Geosystems Seminar Series, March 2002.

*Palomino, A.M. (2001). “Interparticle Forces: Non-Terzaghian Soil Mechanics”, Louisiana State University, Civil and Environmental Engineering Graduate Research Assistant Seminar Series, February 2001.

H. POSTER PRESENTATIONS

p = Faculty member’s Ph.D. student
m = Faculty member’s Master’s student
u = Faculty member’s undergraduate research assistant
* = presenter

[u,]*Throckmorton, J.E., Jedari, C., Palomino, A.M., and Drumm, E.C. (2018), “Fine Coal Refuse Slurry: Influence of Background Chemistry on Viscosity”, 2018 EUReCA, Exhibition of Undergraduate Research & Creative Achievement, University of Tennessee, April 16-20, 2018.
[u,]*Stephens, L. F. (2018), “The Effects of Pressure on Chemical Interactions with Shale Rock During Hydraulic Fracturing”, 2018 EUReCA, Exhibition of Undergraduate Research & Creative Achievement, University of Tennessee, April 16-20, 2018. ***Awarded Honorable Mention – Research***.

[p]Jedari, C., *Palomino, A.M., Cyr, H., and Drumm, E.C. (2017), “Grain and Floc Size Distribution Analysis of Fine Coal Refuse Slurry”, 19th International Conference on Soil Mechanics and Geotechnical Engineering, September 17-22, 2017, Seoul, Korea.

[u,]*Hicks, J.C., [u]Cross, N.C, [u]Orozco, C., and Palomino, A.M. (2015), “Timescale of Clay-Polymer Composite Response Using Expansion Index Test”, 2015 EUReCA, Exhibition of Undergraduate Research & Creative Achievement, University of

Tennessee, April 13-15, 2015, ***Silver Office of Research and Engagement Award, College of Engineering 2nd Place Award***.

[u,]*Orozco, C. and Palomino, A.M. (2014). Atterberg Limits of "Tunable" Clay-Polymer Composites. TLSAMP Research Conference, Vanderbilt University February 27-28, 2014. *REU student, presenter.

[u,]*Orozco, C. and Palomino, A.M. (2013). Atterberg Limits of "Tunable" Clay-Polymer Composites. 40th Anniversary of the Engineering Diversity Program Luncheon, University of Tennessee, October 4, 2013.

[u,]*Orozco, C. and Palomino, A.M. (2013). $CaCO_3$ Precipitation in Kaolin Clay. TLSAMP Welcome Back Meeting, University of Tennessee, August 26, 2013..
[m,]*Braun, G. and Palomino, A.M. (2012). Quantitative XRD Methods for Improving Coal Combustion Products Recycling Efforts. Materials Day, Pennsylvania State University, April 2012.

*Palomino, A.M. (2012). Engineering a Modifiable Clay: "Tunable" Polymer-Clay Composites. NSF CMMI Grantees Engineering Research and Innovation Conference, July 9-11, 2012.

[p,]*Tang, X., Palomino, A.M., and Stoffels, S.M. (2010). Geogrid Zone of Influence in Pavement Reinforcement. PTI Student Showcase and Exhibition, Transportation Research Board 89th Annual Meeting, Washington D.C., January 10-14, 2010.

[p,]*Tang, X., Palomino, A.M., and Chehab, G. (2009). Laboratory Evaluation of Geogrids for Flexible Pavement Reinforcement. PTI Student Showcase and Exhibition, Transportation Research Board 88th Annual Meeting, Washington D.C., January 13, 2009.

[p,]*Tang, X., Chehab, G. and Palomino, A.M. (2008). Lab Evaluation and Specification Development for Geogrids for Highway Engineering Applications. PTI Student Showcase and Exhibition, Transportation Research Board 87th Annual Meeting, Washington D.C., January 15, 2008.
[m,]*Kim, S. and Palomino, A.M. (2007). Polymer-Treated Clays: Micro-scale Manipulation for Macro-scale Property Enhancement. Pennsylvania State University, College of Engineering Research Symposium, 08 February 2007, University Park, USA.

[p,]*Tang, X., Chehab, G. and Palomino, A.M. (2007). Lab Evaluation and Specification Development for Geogrids for Highway Engineering Applications. PTI Student Showcase and Exhibition, Transportation Research Board 86th Annual Meeting, Washington D.C., January 23, 2007.

*Palomino, A.M. (2005). Engineered and Natural Clays. 8th Annual Sowers Lecture and 2005 Geotechnical Symposium.

*Palomino, A.M. (2004). Engineered Fine-Grained Minerals: Fabric Formation and Control. 7th Annual Sowers Lecture, Georgia Tech Geotechnical Society Poster Presentation, May 18, 2004.

*Palomino, A.M. (2003). Fabric Formation and Control in Fine-Grained Materials. 6th Annual Sowers Lecture, Georgia Tech Geotechnical Society Poster Presentation, May 20, 2003.
*Palomino, A.M. (2002). Interparticle Electrical Forces. 5th Annual Sowers Lecture, Georgia Tech Geotechnical Society Poster Presentation, May 21, 2002.

*Palomino, A.M. (2001). Interparticle Forces: Non-Terzaghian Soil Mechanics. Mining & Crushed Stone Initiatives at Georgia Tech, March 1, 2001.

IV. RESEARCH PROJECTS

A. GRANTS AND CONTRACTS

Collaborative Research: Development of Novel Chitosan-Biochar-Bentonite Composite Barrier Resilient to Changing Climate: Synthesis, Characterization, and Containment Mechanisms. National Science Foundation. In collaboration with Dr. Krishna Reddy, University of Illinois Chicago.

Corrosion Impacts on the Design Capacity of Rock Dowels Under Shear Displacement. UTK Graduate School.

Networking and Collaboration Fellowship Seed Grants: Use of Biopolymers as an Additive for Flow Reduction of Waste Slurries. Syracuse University (NSF).

SARIF Equipment and Infrastructure Fund. Leica Z16 APO Macroscope System. UTK Office of Research and Engagement.

Design Consideration for, and Limitations of Rock Dowels/Anchors Loaded in Shear. Tennessee Department of Transportation.

Networking and Collaboration Fellowship Seed Grants: Storage and Usage of Energy Products Collaboration. Syracuse University (NSF).

Hydraulic Fracturing Chemical Effects on Characterization of Fractured Shale Particulates and Their Impact on Hydraulic Fracturing Wastewater Quality. Institute for a Secure and Sustainable Environment, University of Tennessee.

Development of Transportation Engineering Data for Safety and Other Studies. CFDA No 15.945-Cooperative Research and Training Programs. National Park Services, U.S. Department of the Interior.

Geotechnical Study of Soil Movement Along National Cemetery Wall at Andrew Johnson National Cemetery. National Park Service, U.S. Department of the Interior.

Rheology of Fine Coal Refuse and Observations of In-Situ Characteristics. Office of Surface Mining Reclamation and Enforcement, U.S. Department of the Interior.

Investigation of Crown-Ether Modified Diatoms for the Removal of Alkali Metals from Aqueous Solutions. Institute for a Secure and Sustainable Environment, University of Tennessee.

Runoff Water Quality from Highway Cut Slopes in Pyrite Geology: Characterization and Treatment. Tennessee Department of Transportation.

Evaluation and Prediction of Bridge Pier and Contraction Scour of Cohesive River Sediments in Tennessee. Tennessee Department of Transportation.

Strength and Deformation of “Tunable” Polymer-Clay Composites. National Science Foundation, CMMI-1266288.

REU Supplement, Strength and Deformation of “Tunable” Polymer-Clay Composites. National Science Foundation, CMMI-1266288.

EAGER: Engineering a Modifiable Clay: “Tunable” Polymer-Clay Composite. National Science Foundation, CMMI 1041995.

Chemical and Material Characterization of Pennsylvania Coal Combustion Products. Pennsylvania Coal Ash Research Group.

Evaluation of Special Asphalt Surface Treatment Aged Using UV. Tensar International Corporation.

Study of Soil Abrasion and Development of a Reliable Soil Abrasion Index. National Science Foundation, CMMI 0928757.

Determination of Structural Benefits of PennDOT-Approved Geogrids in Pavement Design. Pennsylvania Department of Transportation.

Test Framework Development for Use of Coal Combustion Products (CCPs) in Embankment Construction and Mine Land Reclamation. Pennsylvania Coal Ash Research Group.

Development of Engineered Clay Soil Systems Using Polymers. Mid-Atlantic Universities Transportation Center.

Optimization and Testing of a Modified “Sleeve-It” System for Use as Vehicular Guiderail Units. Strata Systems.

Technology Evaluation on Characterization of the Air Void System in Concrete. Pennsylvania Department of Transportation.

Laboratory Evaluation and Specification Development for Geogrids for Highway Engineering Applications. Pennsylvania Department of Transportation.

Evaluation of Nyloplast Inline Drain and Drain Basin Applications. New Product Evaluation Process for Low Volume Local Roads, ADS.

V. ADVISING AND TEACHING

A. INDIVIDUAL STUDENT GUIDANCE

Visiting Scholars and Students

- Natascha Kallerhoff (05/2023 – 07/2023)
  Master's Student, Ruhr University Bochum, Germany.
  Shear Wave Velocity Measurement of Biopolymer-Treated Silt-Bentonite Mixtures using Bender Elements
- Dr. Jong-Sub Lee (01/2011-12/2011)
  Associate Professor of Civil Engineering, Korea University, South Korea
- Dr. Ming-hui Yang (01/2010 – 12/2010)
  Associate Professor of Civil Engineering, Hunan University, China
  Engineered Soil Applications for Chinese Red Clay

Post-Doctoral Researcher Guidance

- Dr. Sungho Kim (01/2012-12/2012)
- Dr. Hao Yin (08/2008-05/2009)

Ph.D. Student Guidance

Graduated

- Cyrus Jedari (SP 2019). Co-advised by Dr. Eric Drumm. Evaluation of Time Rate of Consolidation and Undrained Shear Strength of Hydraulically Placed Fine Coal Refuse.
- Badal Mahalder (SU 2018). Evaluation and Prediction of Cohesive Soil Erosion Parameters Among Varying Soil Properties and Testing Procedures: Implications for River Bed Scour at Bridge Piers.
- Bijoy Halder (SU 2017). Meso-Scale Behavior Characterization of "Tunable" Clay-Polymer Composites.
- Sungho Kim (2011). An Engineered Clay Soil System Using Functional Polymers. *Current Position: Research Fellow, Federation University (formerly Monash University), Victoria, Australia, January 2013-2015.*

- Xiaochao Tang (2010). A Study of Permanent Deformation Behavior of Geogrid-Reinforced Flexible Pavements Using Small Scale Accelerated Pavement Testing. *Current Position: Associate Professor, Widener University, August 2023-present*

In Progress

- Elzamel, Ahmed (SP 2024). "Development of Novel Chitosan-Biochar-Bentonite Composite Barrier Resilient to Changing Climate: Synthesis, Characterization, and Containment Mechanisms".

Other

- Hossain, Md. Saddam (SU 2023 – FA 2023). "Development of Novel Chitosan-Biochar-Bentonite Composite Barrier Resilient to Changing Climate: Synthesis, Characterization, and Containment Mechanisms". Withdrew from program due to medical issues December 2023.
- Syed Gulzar (FA 2019-DEC 2022). Thesis title: Design Considerations and Limitations of Rock Dowels/Anchors Loaded in Shear. Started graduate program as Ph.D. student FA 2019. Converted to MS student AUG 2022.
- Dingming Yang (Spring 2014). Withdrew from program June 2014.

M.S. Student Guidance

Graduated

- Syed Gulzar (FA 2019-DEC 2022). Thesis title: Design Considerations and Limitations of Rock Dowels/Anchors Loaded in Shear. Started graduate program as Ph.D. student. Co-advised by Dr. Eric Drumm (deceased, FEB 2020); Co-advised by Dr. Sarah Mobley (APR2020-NOV2021). Transferred from Ph.D. to course-only MS track AUG2022. Graduation date: DEC2022.
- Tommy Cole Carpenter (SU 2019). Thesis title: Thermal Properties of Dry and Saturated Soils.
- Jordan Hicks (2018). Converted to MS course-only SP 2018.
- Brian Williamson (2014). Special Topic: Methods for Prevention and Mitigation of Acid Drainage from Pyritic Geology. Non-thesis, special research topic, 01/2014-05/2014.
- Matthew Bishop (2013). Thesis Title: Strength and Deformation of "Tunable" Clay-Polymer Composites.
- Gregory Braun (2012). Thesis Title: Characterization of Coal Combustion Products for Beneficial Use in Mine Land Reclamation.
- Nicholas Plaks (2010). Thesis Title: Development of a Test Framework for Use of CCPs in Large-Volume Applications.

- Sameer Sharad Damle (2009). Special Topic: Optimization and Testing of a Modified “Sleeve-It” System for Use as Vehicular Guiderail Units. Non-thesis, special research topic, 08/2008-08/2009.
- Sungho Kim (2008). Thesis Title: Polyacrylamide-Treated Kaolin Clay: A Fabric Study.

Undergraduate Research Student Guidance

- Olivia Porterfield (10/2024 – present). Quantification of Microplastic Particles in Geotextile-Covered Field Soil Samples.
- Jesse Foster (10/2024 – present). Quantification of Microplastic Particles in Geotextile-Covered Field Soil Samples.
- Walker Reeves (02/2023 – 05/2024). Material Characterization of Montomorillonite and Chitosan.
- Avinash Palaparthy (03/2021 – 05/2021). Design Consideration for, and Limitations of Rock Dowels/Anchors Loaded in Shear.
- Alexandra Shafer (09/19 – 12/19). Design Consideration for, and Limitations of Rock Dowels/Anchors Loaded in Shear
- Andrew Shahan (09/19 – 05/20). Design Consideration for, and Limitations of Rock Dowels/Anchors Loaded in Shear
- Ryan Livsey (05/18 – 12/18). Ion Conductivity Measurements of Coal Combustion Residuals.
- Rebekah Kish (01/18 – 05/19). Aging influences on Fine Coal Refuse. Effects of Pressure on Chemical Interactions with Shale Rock During Hydraulic Fracturing.
- James Throckmorton (08/17 – 05/19). Fine Coal Refuse Slurry: Influence of Background Chemistry on Viscosity.
- Kendra Jackson (01/17 – 05/17). Total Organic Carbon Measurements and Analysis of Fine Coal Refuse.
- Sharon Counts (06/16-08/16). Development of Transportation Engineering Data for Safety and Other Studies
- Leah Stephens, RISER Undergraduate Research Assistant (02/16-12/16). Electrokinetic-Enhanced Precipitation of $CaCO_3$ in Ottawa Sand. (01/17-05/19) The Effects of Pressure on Chemical Interactions with Shale Rock During Hydraulic Fracturing.
- Alan Jolly (09/15-05/16). Specific Surface Measurements and Relationship to Atterberg Limits of Scour-Prone Fine-Grained Soils in Tennessee.
- Laura Ferrer (08/15-05/16). Atterberg Limits and Free Swelling Properties of Montmorillonite-Polyacrylamide Composites.
- Brandy Manka (02/15-05/15). Specific Surface Measurements and Relationship to Atterberg Limits of Scour-Prone Fine-Grained Soils in Tennessee.

- Alex Hollman (08/15-05/16). Specific Surface Measurements and Relationship to Atterberg Limits of Scour-Prone Fine-Grained Soils in Tennessee.
- Abigail Getty (08/14-05/15). Electrokinetic-Enhanced Precipitation of $CaCO_3$ in Kaolin Systems; and Specific Surface Measurement and Relationship to Atterberg Limits of Scour-Prone Fine-Grained Soils in Tennessee.
- Nathan Cross (05/14-05/15). Influence of diatoms on shrinkage limit of kaolin at varying pore fluid ionic concentration; and Swelling index of "tunable" clay-polymer composites. NSF REU.
- Jordan Hicks (05/14-07/15). Influence of diatoms on shrinkage limit of kaolin at varying pore fluid ionic concentration; and Swelling index of "tunable" clay-polymer composites. NSF REU.
- Cristian Orozco (05/13-12/15). Influence of precipitated calcium carbonate on kaolin clay behavior; and Swelling response of "tunable" clay-polymer composites. NSF REU.
- Alexander Rand (05/12-12/12). Laboratory investigation of the influence of low pH exposure on the stiffness of kaolin clay.
- Matthew Reese (05/10-08/11). Laboratory investigation of the plasticity of diatom-clay mixtures at varying mineral ratios and pore fluid conditions.
- Gregory Braun (08/09-08/10). Laboratory investigation of the influence of temperature on the plasticity of expansive clays; and Investigating the impact of propeller loading on the sphericity and roundness of aggregate, sand, and clay particles.
- Phillip Ruby (08/08-05/10). Geotechnical laboratory investigation of the expansive effects of concentrated pyritic zones in shales of the Marcellus formation.
- Suzanne Ciavola (08/05-12/05). Properties and characteristics of Pennsylvania soils.

B. TEACHING ACTIVITIES

University of Tennessee

- Advanced Soil Mechanics – *Graduate*, *In-person and Distance Education formats*
- Advanced Soil Mechanics and Slope Stability – *Graduate, In-person and Distance Education formats*
- Engineering Soil Properties and Behavior – *Graduate, In-person and Distance Education formats*
- Introduction to Geosynthetics – *Graduate*
- Soil Stabilization – *Graduate, In-person and Distance Education formats*
- Geotechnical Engineering I – *Undergraduate*
- Geotechnology Seminar - *Graduate*

Pennsylvania State University (2005-2011)

- Advanced Soil Mechanics – *Graduate*
- Engineering Properties of Soils - *Graduate*

- Engineering Mechanics of Soils – *Undergraduate*
- Civil Engineering Materials Laboratory – *Undergraduate*
- Geotechnical and Materials Engineering Seminar – *Graduate*

VI. SERVICE

A. PROFESSIONAL CONTRIBUTIONS

Editorial Service

- Handling Editor, *Transportation Research Record*, Feb 2023-present. Invite reviewers to evaluate the manuscript submissions assigned and make publication decision.

Technical Committees

- Committee co-Chair, Transportation Research Board (TRB) AKG30 Committee, April 2020-April 2024. Responsible for organizing and preparing for quarterly meetings (developing agenda, writing presentation slides, inviting guest speakers), developing lectern sessions, invited panel speaker sessions, and workshops for annual TRB meeting, assigning tasks to committee members, and facilitating progress towards committee goals and selection of research topics to pursue. The committee chair is also responsible for the editorial duties associated with submitted publications related to the committee theme and recommend publications for presentation (lectern or poster) as well as for publication in the Transportation Research Record journal.
- Representative of TRB AKG30, Geology and Geotechnical Engineering Section (AKG00) Executive Board Meeting, January 2021, Jan 2022, Jan 2023, and Jan 2024. Meeting of AKG00 section committee chairs. Invitation-only meeting held to discuss section business. Bring committee needs/suggestions/concerns to the section chair and relay information from the section chair to the committee.
- Representative of TRB AKG30, TRB All-Chair Briefing and Town Hall (Invitation Only). January 2021, Jan 2022, Jan 2023, and Jan 2024.
- Representative of TRB AKG30 Geo-Environmental and Climatic Impacts on Geomaterials, Transportation Infrastructure Group Leadership Meeting (Invitation Only), January 2021, Jan 2022, Jan 2023, and Jan 2024.
- Paper Review Coordinator *(Editor)*, TRB AKG30 Geo-Environmental and Climatic Impacts on Geomaterials, August 2023 - October 2023, Coordinated the reviews of 10 manuscripts submitted to the AKG30 committee for potential publication in Transportation Research Record journal and/or presentation at the 2024 Annual Meeting of TRB.
- Sub-Committee co-Creator, TRB AKG30(1) Geo-Environmental Aspects of Geomaterials Subcommittee, August 2023 - January 2024, AKG30 Sub-Committee created as a pathway to address topics related to Geo-Environmental Engineering. First sub-committee meeting held during 2024 TRB Annual meeting. Developed committee title, scope, and recruited a chair to lead the subcommittee for the next 3 years.

- Sub-Committee co-Creator, TRB AKG30(2) Seasonal and Climatic Impacts Subcommittee, August 2023 - January 2024, AKG30 Sub-Committee created as a pathway to address topics related to Seasonal and Climatic Impacts. First sub-committee meeting held during 2024 TRB Annual meeting. Developed committee title, scope, and recruited a chair to lead the subcommittee for the next 3 years.
- TRB AKG30 Paper Review Coordinator, Transportation Research Board, August 2023 - October 2023, Coordinated the reviews of **10** manuscripts submitted to the AKG30 committee for publication and/or presentation at the 2024 Annual Meeting of TRB.
- TRB AKG30 Paper Review Coordinator, Transportation Research Board, August 2022 - October 2022, Coordinated the reviews of **11** manuscripts submitted to the AKG30 committee for publication and/or presentation at the 2023 Annual Meeting of TRB.
- TRB AKG30 Paper Review Coordinator, Transportation Research Board, August 2021 - October 2021, Coordinated the reviews of **10** manuscripts submitted to the AKG30 committee for publication and/or presentation at the 2022 Annual Meeting of TRB.
- TRB AKG30 Paper Review Coordinator, Transportation Research Board, August 2020 - October 2020, Coordinated the reviews of **10** manuscripts submitted to the AKG30 committee for publication and/or presentation at the 2021 Annual Meeting of TRB.
- ASCE Geo-Institute Geoenvironmental Engineering Committee Paper Review co-Coordinator, July 2021 - October 2021. Coordinated the reviews of **35** manuscripts, within the scope of the Geoenvironmental Engineering Committee, submitted for consideration of publication and/or presentation at Geo-Congress 2022.
- TRB AKG30 Paper Review Coordinator, Transportation Research Board, August 2019 - September 2019, Coordinated the reviews of **10** manuscripts submitted to the AFP40 committee for presentation at the 2020 Annual Meeting of TRB.
- Committee Chair, TRB AFP40 Committee, April 2018-April 2020.
- TRB AFP40 Paper Review Coordinator, Transportation Research Board, August 2018 - September 2018, Coordinated the reviews of **10** manuscripts submitted to the AFP40 committee for presentation at the 2019 Annual Meeting of TRB.
- Member, TRB AFS80 Committee on Cementitious Stabilization, March 2013 to present.
- Committee Communications Coordinator, TRB AFS80 Committee, July 2014-present.
- Member, TRB AFP40 Physicochemical and Biological Processes in Soils Committee, March 2012 to April 2020.
- Research Needs Statement Coordinator, TRB AFP40 Committee, January 2014 to present. Prepared and submitted a Synthesis Proposal to NCHRP (2015), “Environmental Impacts of Using High Carbon Fly Ash in Structural Fill Applications”. Co-authored and submitted Research Needs Statement to

NCHRP: “Environmental Characterization of Coal Fly Ash for Use in Transportation”

- Member, Geo-Institute GeoEnvironmental Engineering Committee (ASCE), June 2008 to present.
- Member, Geo-Institute GeoEnvironmental Engineering Committee Award Nomination Sub-Committee, 2013-2014. Prepare and submit nomination packages for ASCE awards.
- Chair, Geo-Institute GeoEnvironmental Engineering Committee Award Nomination Sub-Committee, 2009 to 2011. Prepare and submit nomination packages for ASCE awards. *The winners of the 2010 Thomas A. Middlebrooks Award were selected based on the nomination package prepared by the GEC sub-committee.*
- Member, Geo-Institute Soil Improvement Committee (ASCE) January 2009 to present.

Organizer of Conference Tracks or Sessions

- Transportation Research Board (TRB) AKG30 Committee Meeting co-Organizer, co-Presider, Transportation Research Board, AKG30 committee meeting, held as a part of the TRB Annual Meeting January 2024.
- TRB AKG30 Lectern Session Coordinator and Chair, January 2024, Annual Meeting Lectern Session: "Impact of Water on the Performance of Enhanced Geomaterials".
- TRB AKG30 Lectern Session Coordinator, January 2024, Annual Meeting Lectern Session: "Impact of Frost on the Performance of Geomaterials".
- TRB AKG30 Committee Meeting co-Organizer, co-Presider, Transportation Research Board, AKG30 committee meeting, held as a part of the TRB Annual Meeting January 2023.
- Session co-Organizer. Lectern Session 3176. "Geo-Environmental and Climatic Impacts on Geomaterials Use for Transportation Infrastructure". TRB Annual Meeting, Jan. 10, 2023.
- Invited Panel Session co-Organizer, co-Presider. Lectern Session 2076. "Geo-Environmental and Climatic Impacts on Geomaterials Panel Session on Future Outlook". TRB Annual Meeting, Jan. 09, 2023.
- Workshop co-Organizer. Workshop 1056 (co-sponsored by AKG90). “Bio-Mediated Soil Improvement for Infrastructure Applications”, TRB Annual Meeting, Jan 08, 2023.
- Session co-Chair and Paper Editor. Geo-Congress 2022. Co-coordinator of paper review assignments and reviews of 35 manuscripts. Geoenvironmental paper session.
- TRB AKG30 Committee Meeting co-Organizer, co-Presider, Transportation Research Board, AKG30 committee meeting, held as a part of the TRB Annual Meeting January 2022.
- Workshop co-Organizer, co-Presider. Workshop 1032 (co-sponsored by AMS20). Per- and Polyfluoroalkyl Substances: Current and Future Impacts on the Transportation Industry. TRB Annual Meeting, Jan. 9, 2022.

- Session co-Organizer and Presider. Lectern Session 1291. Thermal Impacts and Remediation Effects on Pavement Materials. Transportation Research Board 2022 Annual Meeting, Jan 11, 2022.
- Session co-Organizer and Presider. Poster Session 1378. Innovative Technologies for Monitoring and Improving Pavement Material Properties. Transportation Research Board 2022 Annual Meeting, Jan 12, 2022.
- TRB AKG30 Committee Meeting co-Organizer, co-Presider, Transportation Research Board, AKG30 committee meeting, held as a part of the TRB Annual Meeting January 2021.
- Workshop co-Organizer and co-Chair. Workshop 1045. Climatic Impacts on Performance of Road Foundation. Transportation Research Board 2021 Annual Meeting.
- Session co-Organizer and co-Chair. Lectern Session 1344. Climate Change Impacts on Roadway Policies. Transportation Research Board 2021 Annual Meeting.
- Session co-Organizer and co-Chair. Poster Session 1398. Geotechnical Temperature/Moisture Effects on Performance of Road Building Materials. Transportation Research Board 2021 Annual Meeting.
- Session Organizer. Lectern Session 1116: Bio-Mediated Enhancement of Transportation Materials and Infrastructure. Transportation Research Board 2020 Annual Meeting.
- Session Organizer. Lectern Session 1169 (co-sponsored by ADC60, AFF70, and AV030): Emerging Issues with Per- and Polyfluoroalkyl Substances (PFAS) and Other Organic Contaminants in Transportation, Part 1 (Part 2, Session 1443). Transportation Research Board 2020 Annual Meeting.
- Session Organizer. Lectern Session 1169 (co-sponsored by ADC60, AFF70, and AV030): Emerging Issues with Per- and Polyfluoroalkyl Substances (PFAS) and Other Organic Contaminants in Transportation, Part 2 (Part 1, Session 1169). Transportation Research Board 2020 Annual Meeting.
- Session Organizer. Lectern Session 1532: Improving Performance of Transportation Materials Using Innovative Additives. Transportation Research Board 2020 Annual Meeting.
- Session Organizer. Lectern Session 1262 (co-sponsored by AFS80): Critical Aspects of Recycled Materials to Improve Subgrade and Backfill. Transportation Research Board 2019 Annual Meeting.
- Session Organizer, Session co-Chair. Lectern Session 1404: Environmental Impacts of Soil Improvement. Transportation Research Board 2019 Annual Meeting.
- Technical Session co-Chair. Reactive Geo-Materials for Waste Containment, Geotechnical Frontiers 2017, Orlando, FL, March 12-17, 2017.
- Session Moderator. Education and Policy Issues, Geo-Chicago 2016, Chicago, IL, August 14-18, 2016.
- Session Moderator. Poster Session 316: Physicochemical Behavior of Soils and Industrial Byproducts, Transportation Research Board 94th Annual Meeting, January 11-15, 2015.
- Session Chair, Judge, and Faculty Judge Recruiter. Sigma Xi Graduate Student Research Presentation Competition, UT Sigma Xi Chapter, April 14, 2014.

- Session co-chair. Multi-scale Characterization of Geomaterials, Geo-Congress 2014, Atlanta, Georgia, February 23-26, 2014.
- Track Chair. Constitutive Modeling of Particulate Material Behavior, 16th US National Congress on Theoretical and Applied Mechanics (USNCTAM), June 27 - July 2, 2010, Penn State University, University Park, PA. Solicited papers for and organized two sessions. (Paper review and coordination October 15, 2009-March 01, 2010).
- Session Chair. 16th US National Congress on Theoretical and Applied Mechanics (USNCTAM), June 27 - July 2, 2010, Penn State University, University Park, PA. (Paper review and coordination October 15, 2009-March 01, 2010).
- Session Chair. Microscale Properties to Macroscale Behavior of Engineered Soils, ASCE Geo-Institute GeoFlorida 2010: Advances in Analysis, Modeling & Design, February 20-24, 2010, West Palm Beach, Florida. Solicited papers for and organized session. (Paper review and coordination July 2009-February 2010).

Reviewer of Research Proposals

- National Science Foundation, Center Panel Reviewer.
- National Science Foundation, Panel and ad-hoc reviewer, Unsolicited Proposals.

Reviewer of Journal and Conference Articles

- 16th US National Congress on Theoretical and Applied Mechanics (USNCTAM), June 27 - July 2, 2010, Pennsylvania State University in University Park, PA.
- Annals of the Brazilian Academy of Sciences (Anais da Academia Brasileira de Ciências)
- Applied Clay Science
- ASCE Journal of Geotechnical and Geoenvironmental Engineering
- ASCE Geo-Institute Geotechnical Special Publications
- ASTM Geotechnical Testing Journal
- Canadian Geotechnical Journal
- Clays and Clay Minerals: Journal of the Clay Minerals Society
- Engineering Geology
- Environmental Technology
- Geo-Congress 2008, The Challenge of Sustainability in the Geoenvironment, March 9-12, 2008, New Orleans, LA.
- Geo-Congress 2010, Advances in Analysis, Modeling & Design, February 20-24, 2010, West Palm Beach, FL.
- Geo-Congress 2012, State of the Art and Practice in Geotechnical Engineering, March 25-29, 2012, Oakland, CA.
- Geo-Congress 2014, Geo-Characterization and Modeling for Sustainability, February 23-26, 2014, Atlanta, Georgia.
- GeoShanghai International Conference, June 6-8, 2006, Shanghai, China.
- GeoShanghai International Conference, May 26-28, 2014, Shanghai, China.

- Geotechnical and Geological Engineering
- Geotechnical Testing Journal
- International Conference on Physical Modeling in Geotechnics, August 4-6, 2006, Hong Kong.
- Journal of Applied Geophysics
- Journal of Environmental Engineering
- Journal of Materials in Civil Engineering
- Journal of Composite Materials
- Korean Society of Civil Engineering Journal of Civil Engineering
- Soils and Foundations
- Transportation Research Board paper reviewer
- Vadose Zone Journal
- Geo-Chicago 2016
- Geotechnical Frontiers 2017, 2025
- Geo-Congress 2024
- GeoenvironMeet 2024 (now Geotechnical Frontiers 2025)

Membership – Professional and Research Societies

- American Geophysical Union, Member 2002-present
- American Society of Civil Engineers, Member 1997-present
- American Society of Engineering Education, Member 2005-present
- Certified Engineer-in-Training - April 24, 1998. #EIT019118
- Chi Epsilon, Member 1996-present
- Clay Mineral Society, Member 2007-present
- Geo-Institute, American Society of Civil Engineers, Member 2003-present
- Geo-Institute GeoEnvironmental Engineering Technical Committee, Member 2008-present. The committee's mission is to advance and promote interdisciplinary field of geoenvironmental engineering, which encompasses topics that span geotechnical, environmental, and water resources engineering with the following focus areas: containment; remediation; unsaturated-zone processes; contaminant fate and transport (saturated and unsaturated); performance prediction; and sustainable development, and to facilitate technology transfer to G-I members and those affiliated with other organizations through sponsorship of technical conferences, workshops, webinars, and short courses.
- International Association of Foundation Drilling (ADSC), Member June 2008 - present
- Sigma Xi Scientific Research Society, Member 2002-present, President of UTK Chapter, 05/2013-2015.
- Transportation Research Board, 2012-present.
- United States Universities Council on Geotechnical Education and Research (USUCGER), Member 2006-present. Contribute to activities related to improving teaching at the undergraduate and graduate levels, facilitating discussions of research, and strengthening interactions with practitioners in the geotechnical engineering community.

VII. HONORS AND AWARDS

- Recognition for Service to WomEngineer's Executive Council, WomEngineer's Board Members, April 2019, Recognition for service as a member of the WomEngineer's Executive Council. Presented at the Tickle College of Engineering Annual Faculty and Staff Awards Dinner.
- Selected Participant and Travel Award. Workshop: Geotechnical Women Faculty – Collaborating and Thriving, March 06, 2018. The workshop focused on understanding how collaboration improves career success and introduced strategies and skills necessary to connect with potential collaborators. Topics included: identifying characteristics and practices that heighten the chances of collaborative success when working with other scientists, distributed collaboration, the roles that genders play in collaboration, and the structure and practices of scientific collaboration. Participants were also given the opportunity to move their individual collaborations forward.
- Selected Participant and Travel Award. ASEE National Effective Teaching Institute – 2018, San Diego, CA. Participants were provided with information and hands-on practice in elements of effective teaching.
- UTK, Graduate School Student/Faculty Research Award. Monetary award to support a graduate student, Cyrus Jedari. Spring 2018. Award: $5000.
- Selected Participant and Travel Award. Workshop for "Connecting Women Faculty in Geotechnical Engineering – Thriving in a Networked World". April 10-11, 2017. This NSF-funded workshop was designed to introduce the strategies and skills necessary to build a strong, diverse network. The goal is to create an enduring network of colleagues, both women and men, for geotechnical women faculty that fosters career success and resilience. Travel funds were awarded to attend the workshop. Sponsor: National Science Foundation.
- Selected Participant and Travel Award. Workshop on Geotechnical Fundamentals in the Face of New World Challenges, July 17-19, 2016, National Science Foundation, Arlington VA. The workshop focused on fundamental principles that underlie current and anticipated developments in geotechnical engineering. Participants were selected based on area of expertise and potential for contributing to the goals of the workshop. Financial support was provided for travel and accommodation costs to give a research presentation and participate in the workshop. Sponsor: National Science Foundation.
- UTK Department of Civil and Environmental Engineering Teaching Recognition Award (April 2016)
- Selected Participant and Travel Award. Educate the Educators: Geosynthetics Education Training Program, University of Texas, Austin, July 28-29, 2015. Sponsored by the International/North American Geosynthetics Society. Participants were selected through a competitive, formal application process based on the ability to incorporate presented materials into geotechnical courses. Lodging, meals, and workshop teaching materials were awarded to participants.
- Selected Participant and Travel Award, International Workshop on Education of Future Geotechnical Engineers in Response to Emerging Mult-scale Soil-Environment Problems, September 5-6, 2014, University of Cambridge, UK. Financial support provided for travel and accommodation costs to participate in

the workshop. Sponsors: National Science Foundation and University of Cambridge.

- Selected Participant and Travel Award. 2nd International Workshop on Bio-Soils Interactions and Engineering, September 18-20, 2011, University of Cambridge, UK. Financial support provided for travel and accommodation costs to present at and participated in the workshop. Sponsors: National Science Foundation and University of Cambridge.
- Invited Participant and Travel Award. The 1st US-India Workshop on Global GeoEnvironmental Engineering Challenges, November 7, 2010, New Delhi, India. Financial support provided for travel and accommodation costs to present at and participate in the workshop. Sponsors: National Science Foundation, ASCE Geo-Institute, Indian Geotechnical Society, and the University of Illinois at Chicago.
- CEE Department Nominee. David and Lucille Packard Fellowship for young faculty in the natural sciences and engineering, PSU (2008)
- Invited Participant and Travel Award. International Workshop of Young Doctors in Geomechanics, Ecole Nationale des Ponts et Chaussées, Champs-sur-Mame, France, November 23, 2005.
- Hartz Career Development Professorship. To supplement departmental support for outstanding PSU faculty in order to provide a holder of the career development professorship with critical financial support and encouragement for faculty starting an academic career. (August 2005 – July 2008)
- Georgia Institute of Technology Civil and Environmental Engineering Outstanding Research Faculty/Post-Doc Award. Selection is made by the School of CEE Awards committee, based on both internal and external nominations, for outstanding research contributions. (April 2005)
- Member of Chi Epsilon. Member 1996-present
- Member of Sigma Xi. Scientific Research Society, 2002 to present. **President of UT Sigma Xi chapter**, 2013 to 2015.
- National Science Foundation Graduate Fellowship. 1999-2002

VIII. COLLABORATORS

Graduate Advisors

- J. Carlos Santamarina, G. Wayne Clough Chair and Professor, Georgia Institute of Technology
  (*PhD Advisor, Georgia Tech*)
- Dennis G. Grubb, Technology Fellow, Jacobs
  (*MSCE Advisor, Georgia Tech*)

Other Collaborators

- Douglas G. Hayes, Department of Biosystems Engineering and Soil Science, University of Tennessee (Proposal: *Environmental Degradation of Geosynthetics: Microplastics Formation and Contaminant Adsorption in Marine Environments*).
- Shikha Nangia, Department of Biomedical and Chemical Engineering, Syracuse University (Proposal: *Collaborative Research: Investigation of Biopolymer-*

Mineral Surface Interaction Mechanisms Using Synergistic Molecular Computational Modeling and Multi-Scale Experiments).

- Krishna Reddy, Department of Civil, Materials, and Environmental Engineering, University of Illinois, Chicago (Collaborative Research: Development of Novel Chitosan-Biochar-Bentonite Composite Barrier Resilient to Changing Climate: Synthesis, Characterization, and Containment Mechanisms)
- Khalid Alshibli, CEE, University of Tennessee (2020 MRI: Acquisition of a 4D High-Resolution X-Ray Microscope with In Situ Characterization Capabilities)
- Ziling (Ben) Xue, Chemistry Dept., University of Tennessee (*sol-gel coated diatom pellets for contaminant remediation*)
- Kimberly Carter, CEE, University of Tennessee (*crown ether modified diatom filters*)
- Brian Long, Dept. of Chemistry, University of Tennessee (*crown ether modified diatom filters*)
- Howard Cyr, McClung Museum of Natural History, University of Tennessee (*characterization of fine coal refuse and crushed shale particles*)
- Eric Drumm, Dept. of Biosystems Engineering and Soil Science, University of Tennessee (*flowability of fine coal refuse*)
- Jong-Sub Lee, Dept. of Civil, Environmental and Architectural Engineering, Korea University, Seoul Korea (*shear-wave measurements*)
- Shobha K. Bhatia, CEE, Syracuse University (*behavior of coal combustion products, biopolymers*)
- Nikolas J. Podraza, Department of Physics and Astronomy, University of Toledo (*ellipsometry measurements*)
- Coray Colina, Dept. of Chemistry, University of Florida, (*modeling of clay-polymer systems*)
- Dante Fratta, CEE, University of Wisconsin-Madison (*diatom-enhanced soils*)
- Ming Xiao, CEE, Pennsylvania State University, (*eletrokinetic remediation*)
- Tae Sup Yun, CEE, Yonsei University, Seoul, Korea (*soils modified with responsive polymers*)
- Susan Burns, CEE, Georgia Tech (*fine-grained mineral mixtures*)
- Jamal Rostami, Dept. of Energy and Mineral Engineering, Pennsylvania State University (*soil abrasivity*)
- Barry Scheetz, CEE, Pennsylvania State University (*utilization of coal combustion products*)
- Mansour Solaimanian, PSU Larson Pennsylvania Transportation Institute (*UV aging of asphalt pavements*)
- William Burgos, CEE, PSU (*bioremediation of swelling clays*)
- Shelley Stoffels,CEE, PSU (*structural benefits of geogrids in flexible pavements*)
- Maria Lopez, CEE, PSU (*characterization of air voids in uncured concrete*)
- Joel C. Sprague, TRI/Environmental, Inc. (*geogrid stabilization of flexible pavements*)
- Sam R. Allen, TRI/Environmental, Inc. (*geogrid stabilization of flexible pavements*)

IX. TECHNICAL SKILLS

A. DEVICES USED IN CHARACTERIZING GEOMATERIALS, PORE FLUIDS, AND PAVEMENT STRUCTURES

- Laboratory Vane Shear Device
- Bender Elements
- Scanning Electron Microscope (SEM)
- Spectroscopic Ellipsometry
- Laser Diffraction
- Atomic Force Microscope (AFM)
- X-ray Diffraction (XRD)
- Nuclear Magnetic Resonance (NMR) Spectroscopy
- Fourier Transform Infrared Spectroscopy (FTIR)
- Brightfield/Darkfield Light Microscope – Leica MZ6
- Gas Chromatography (GC)
- LF Impedance Analyzer
- Shear-Wave Piezocrystal Element Transducers
- Compressional-Wave Piezocrystal Element Transducers
- Viscometer
- Zeta-Meter
- Surface Area and Pore Size Analyzer
- pH-ion conductivity meter – Fisher Scientific
- Mobile Model Load Simulator, 1/3 scale (MMLS3)

Knowledge of:

- Atomic Absorption (AA) Spectrometer – PerkinElmer AANALYST 800