FACULTY VITA

Date: April 25, 2022
Name: Cassandra Janel Rutherford
Department: Civil, Construction and Environmental Engineering
Current Rank: Assistant Professor

I. BACKGROUND, PROFESSIONAL EXPERIENCE AND RECOGNITIONS

A. Education

Texas A&M University, College Station, Texas, Ph.D. Civil Engineering, 2012
Texas A&M University, College Station, Texas, M.S. Civil Engineering, 2004
Texas A&M University, College Station, Texas, B.S. Civil Engineering, 2002

B. Academic Appointments

(1) Assistant Professor, Iowa State University, January 2017-present
(2) Assistant Professor, University of Illinois, Champaign-Urbana, December 2011-December 2016

C. Other Professional Employment

(1) TDI-Brooks International, Inc., College Station, TX, Geotechnical Lab Manager and Consultant, 2006-2012 (part-time while finishing PhD)
(2) Geoscience Earth & Marine Services, Inc. (GEMS), Houston, TX, Geotechnical Engineering Consultant, 2007 (part-time summer)
(3) Graduate Research/Teaching Assistant, Texas A&M University, 2003-2012

D. Honors and Awards

(1) United States University Council for Geotechnical Education and Research Early Career Educator Award, 2021
(2) Joseph C. and Elizabeth A. Anderlik Faculty Award for Excellence in Undergraduate Teaching, Dept. of Civil, Construction and Environmental Engineering, Iowa State University, 2019
(3) Professional Engineering License, State of Texas No. 121892, 2015
(4) Teachers Ranked as Excellent, University of Illinois, Champaign-Urbana, 2016
(5) NSF Faculty Early Career Development (CAREER) Award, 2015
(6) Teachers Ranked as Excellent, University of Illinois, Champaign-Urbana, 2015
(7) Excellence in Civil Engineering Education (ExCEEd) Fellow, American Society of Civil Engineering, 2012
(8) SRW Cassie Rutherford Volunteer Organization Award (Namesake), Graduate Student Council and Texas A&M University's Student Research Week, 2006
(9) Montgomery Endowed Fellowship Prize, Texas A&M University Office of Graduate Studies, 2005

(10) Buck Weirus Spirit Award, Texas A&M University Association of Former Students, 2005
(11) Guseman Award, Graduate Student Council Texas A&M University, 2005
(12) Graduate Teaching Academy – GTA Fellow, Texas A&M University, 2003

II. SCHOLARSHIP AND RESEARCH/CREATIVE ACTIVITIES

A. Scholarship

 # Denotes any publication derived from the candidate's thesis/dissertation.
+ Denotes student co-author.

1. Articles in Peer-Reviewed Journals – In Print or Accepted

(16) Fedakar, H. I., Cetin, B. and **Rutherford, C. J.** "Deformation characteristics of medium-dense sand-clay mixtures under a principal stress rotation." Transportation Geotechnics, Vol. 30, DOI: 10.1016/j.trgeo.2021.100616, (2021).

(15) Fedakar, H. I., Cetin, B. and **Rutherford, C. J.** "Effect of principal stress rotation on deformation behavior of dense sand-clay mixtures." Road Materials and Pavement Design. https://doi.org/10.1080/14680629.2021.1948908, (2021).

(14) Yang, T., Men, Y.. **Rutherford, C. J.** and Zhang, Z. "Static and Dynamic Response of Micropiles Used for Reinforcing Slopes." Applied Sciences, 11(14), https://doi.org/10.3390/app11146341, (2021).

(13) Dickey, L. C.+, McEachran, A. R., **Rutherford, C. J.,** Rehmann, C. R., Perez, M., Groh, T. A. and T..M. Isenhart, "Slope Stability of Streambanks at Saturated Riparian Buffer Sites" Journal of Environmental Quality, (https://doi.org/10.1002/jeq2.20281, (2021).

(12) McEachran, A. R. +, Dickey, L. +, Rehmann, C. R., Groh, T. A., Isenhart, T. M., Perez, M.A, Ru**therford, C. J,** "Improving the effectiveness of saturated riparian buffers for removing nitrate from subsurface driainage" Journal of Environmental Quality, Vol. 49, 6 (2020), https://doi.org/10.1002/jeq2.20160.

(11) Cerna-Diaz, A. +, Olson, S.M., Hashash, Y.M.A., Nymanoglu, O.A. +, **Rutherford, C.J**., Bhaumik, L. + Weaver, T., "Response of Sands to Multidirectional Dynamic Loading in Centrifuge Tests," Journal of Geotechnical and Geoenvironmental Engineering, Vol. 146, 10 (2020), https://doi.org/10.1061/(ASCE)GT.1943-5606.0002352

(10) Bhaumik, L.+, **Rutherford, C. J.**, Olson, S. M., Hashash, Y. M. A., Cerna-Diaz, A.+, Numanoglu, O. A.+, and T. Weaver, "Effect of Specimen Preparation on Volumetric Behavior of Sands under Cyclic Multidirectional Shear", Geotechnical Testing Journal, Vol. 53, 5 (2020), 1101-1119. https://doi.org/10.1520/GTJ20190008

(9) Tucker-Kulesza, S. **Rutherford, C. J.** and M. Bernhardt-Barry, "Electrical Resistivity at Internal Erosion Locations in Levees", International Journal of Geoengineering Case Histories. p.55-69. DOI: 10.4417/IJGCH-05-02-01. (2019).

(8) Taukoor, V.[+], Wallace, J. F.[+], **Rutherford, C. J.**, Bernhard, B. B., Hodder, M. S. and D. J. White, "Modelling the degradation of penetration resistance during cyclic T-bar tests in a Gulf of Mexico clay", Soils and Foundations. DOI: 10.1016/j.sandf.2019.07.001. (2019).

(7) Wallace, J. F.[+] and **C. J. Rutherford**, "Comparison of Laboratory Bench Scale, Centrifuge, and Numerical Models of Suction Caissons in Soft Clay for Tidal Current Turbine Applications", ASCE Geotechnical Special Publication, Innovations in Geotechnical Engineering. DOI: 10.1061/9780784481639.012. (2018).

(6) Wallace, J. F.[+] and **C. J. Rutherford**, "Response of Vertical Cyclic Loading of Suction Caissons in Soft Clays", Canadian Geotechnical Journal, DOI: 10.1139/cgj-2016-0133. (2017).

(5) Taukoor, V.[+] and **C. J. Rutherford**, "Displacement rate effects during T-bar cycling in remoulded Gulf of Mexico clay", Géotechnique. 1-5. DOI:10.1680/jgeot.16.P.078 (2016).

(4) Wallace, J.F.[+] and **C. J. Rutherford**, "Geotechnical Properties of Laponite RD", Geotechnical Testing Journal. Special Issue on Physical Modeling with Transparent Soils. Vol. 38, No. 5, 1-15. DOI: 10.1520/GTJ20140211. (2015).

(3) Chini, C.[+], Wallace, J. F.[+], **Rutherford, C. J**. and J. M. Peschel, "Shearing Failure Visualization using Digital Image Correlation and Particle Image Velocimetry in Soft Clay Using a Transparent Soil", Geotechnical Testing Journal. Special Issue on Physical Modeling with Transparent Soils. Vol. 38, No. 5, 1-15. DOI: 10.1520/GTJ20140210. (2015).

(2) **Rutherford, C. J.**[#] and G. Biscontin, "Development of a Multi-directional Simple Shear Testing Device", Geotechnical Testing Journal, Vol. 36, No. 6, 1-10. DOI: 10.1520/GTJ20120173. (2013).

(1) **Rutherford, C.J**.[#], Biscontin, G., Koutsoftas, D. and J. L. Briaud, "Design Process of Deep Soil Mixed Walls for Excavation Support", International Journal of Geoengineering Case histories, Vol.1, Issue 2, p.56-72. (2007).

2. Articles in Peer-Reviewed Journals – In Review

(1) Wallace, J. F.[+] and **C. J. Rutherford**, "Response of Suction Caissons in Soft Clay to Monotonic and Cyclic Horizontal Loading for Tidal Current Turbine Applications", Canadian Geotechnical Journal, (2022) in review.

(2) Numanoglu, O. A.,[+] Hashash, Y.M.A., Olson, S. Cerna-Diaz, A.[+], M., **Rutherford, C. J**., Bhaumik, L.[+], and T. Weaver, "A Practical Three-Dimensional Constitutive Model for Seismic Shear and Volumetric Behavior of Dense Sands", (2021) Soil Dynamics and Earthquake Engineering, in review.

(3) Nguyen, L. M., Poleacovschi, C., Faust, K., Padgett-Walsh, K., Feinstein, S., Vaziri, B., LaPatin, M., and **Rutherford, C. J.** (2021). COVID-19 Pandemic Reveals Challenges in Engineering Ethics Education. Journal of Engineering Education (in review).

(4) LaPatin, M., Barrens, S., Poleacovschi, C., Vaziri, B., Padgett-Walsh, K., Feinstein, S., **Rutherford, C. J**., Nguyen, L., Faust, K.M. (2022). Engineering in a Crisis: Observing the Roles of Engineers During Pandemics and Natural Disasters. (in review)

(5) LaPatin, M., Roy, A., Poleacovschi, C., Padgett-Walsh, K., Feinstein, S., **Rutherford, C. J.,** Nguyen, L., Faust, K.M. (2022). Observations of the Ethical Development of Engineering Students using the DIT-2 Assessment. (In review)

(6) Nguyen, L., Poleacovschi, C., Faust, K., Padgett-Walsh, K., Feinstein, S., **Rutherford, C. J.,** LaPatin, M. (2022). Conceptualizing a Theory of Ethical Behavior in Engineering. To be submitted to the Journal of Engineering Education. (in review)

(7) Jiang, X[+], Vilar, R. P. , **Rutherford, C. J**, Ikuma, K., Ceti, B. (2022) "Reduction of sandy soil erodibility using bacterial enzyme-induced calcite precipitation" .Journal of Geotechnical and Geoenvironmental Engineering (in review).

(8) Jiang, X[+], **Rutherford, C. J**, and Trinidad, Y. (2022) "Influence of randomly distributed magnetic particles within Ottawa sand specimens" Journal of Geotechnical and Geoenvironmental Engineering (in review).

(9) Jiang, X[+], **Rutherford, C. J**, (2022) "Rotation of magnetic particles within transparent soil material." Journal of Geotechnical and Geoenvironmental Engineering (in review).

(10) Jiang, X[+], **Rutherford, C. J**, (2022) "Rotation of magnetic particles within Ottawa sand specimens using electro-magnet." Journal of Geotechnical and Geoenvironmental Engineering (in review).

(11) McEachran, A.R.[+], Dickey, L.C.[+], Rehmann, C.R., Isenhart, T.M., Groh, T.A., Perez, M.A., and **Rutherford, C.J.** (2022) Groundwater flow in saturated riparian buffers and implications for nitrate removal. *Journal of Environmental Quality* (in review).

(12) Cai, W.+ and **Rutherford, C. J.** (2022) "The Effect of Particle Breakage on the Shear Strength of Calcareous Sand Using A Modified Stress-Dilatancy Model" Canadian Geotechnical Journal, (2022) in review.

(13) Cai, W.+ and **Rutherford, C. J.** (2022) "Response of Calcareous Sand under Increasing Particle Crushing" Canadian Geotechnical Journal, (2022) in review.

3. Peer-Reviewed Conference Proceedings, Bulletins, or Reports – In Print/Accepted

(49) Estes, A., et al., ASCE's Response to the Pandemic: Execution of a Remote ExCEEd Teaching Workshop," (ASEE 2023 conference paper submitted).

(48) Sungur, H., Baran., E., Ahn, B., Karabulut-Ilgu, A., Rehmann, C., and **Rutherford, C. J.** "Factors and intervention strategies that influence recognition of women in civil engineering: Alumni experiences," Frontiers in Education 2022, Uppsala Sweden. (2022, abstract submitted).

(47) Lamba, K. H., Ashlock, J.C., and **Rutherford, C. J.** "Modulus and Damping of Overconsolidated Glacial Till from Laboratory Cyclic Triaxial Tests and Field Seismic Cone Penetration Tests," Geocongress 2023, Geotechnical Special Publications, (abstract accepted).

(46) Jiang, X. and **Rutherford, C. J.** "Use of a magnetic field to rotate iron fillings in sand as a means of soil improvement," Geocongress 2023, Geotechnical Special Publications, (abstract accepte4d).

(45) Jiang, X. and **Rutherford, C. J.** "Direct shear tests of sand reinforced with ferrous particles," Geocongress 2023, Geotechnical Special Publications, (abstract accepted).

(44) Cai, W., and **Rutherford, C. J**. "Monotonic Behavior of Ledge Point Calcareous Sands with Increasing Particle Crushing," Geocongress 2023, Geotechnical Special Publications, abstract accepted).

(43) Jiang, X^{+} and **Rutherford, C. J**, "Soil improvement by re-orienting magnetic particles using a magnetic field." Geocongress 2022: Geotechnical Special Publications GSP 331, doi.org/10.1061/9780784484012.012.

(42) LaPatin, M., Kim, K., Poleacovschi, C., Padgett-Walsh, K., Feinstein, S., **Rutherford, C. J.,** Nguyen, L., Faust, K.M. (2022). Evaluating Engineering Students' Moral Sensitivity through a Natural Disaster Case Study. American Society for Engineering Education Conference (ASEE), Minneapolis, MN.

(41) LaPatin, M., Verses, L., Poleacovschi, C., Padgett-Walsh, K., Feinstein, S., **Rutherford, C. J. ,** Nguyen, L., Faust, K. (2021). "What Role do Civil Engineering Students see for their Profession in the COVID-19 Response" American Society for Engineering Education (ASEE), Virtual.

(40) Nguyen, L. M., LaPatin, M., Poleacovschi, C., Faust, K., Padgett-Walsh, K., Feinstein, S., **Rutherford, C. J.** (2021). Investigating On-campus Engineering Student Organizations as Means of Promoting Ethical Development. American Society for Engineering Education (ASEE), Virtual.

(39) Cai, W.[+] and **C. J. Rutherford.** "The Effect of Particle Breakage of Calcareous Sand on Shear Strength Using a Stress-Dilatancy Model", International Foundation Congress and Equipment Expo, Geotechnical Special Publications, GSP 329 May 10-14, 2021.

(38) Nguyen, L., Poleacovschi, C., Faust, K., Padgett-Walsh, K., Feinstein, S., **Rutherford, C. J.,** LaPatin, M. (2020). The Culture of Disengagement in Engineering Education Revealed through the COVID-19 Pandemic. Engineering Project Organization Conference (EPOC), Virtual, October 2020.

(37) LaPatin, M., Faust, K., Poleacovschi, C., Padgett-Walsh, K., Feinstein, S., **Rutherford, C**. **J**., Nguyen, L. (2020). Macroethics in Undergraduate Engineering: An Institutional View. Engineering Project Organization Conference (EPOC), Virtual, October 2020.

(36) Nguyen, L. M., Poleacovschi, C., Faust, K., Walsh, K. P., Feinstein, S. G, **Rutherford, C. J.** "Conceptualizing a theory of ethical behavior in engineering" ASCE's Virtual Conference, June 22-26, 2020, Paper ID#30127. https://peer.asee.org/34324

(35) Dickey, L. [+], McEachran, A.[+], Perez M. A., **Rutherford**, **C. J.,** Rehmann, C. R., Groh, T. Isenhart, T., and D. Jaynes, (2020) "Slope Stability Analysis of Saturated Riparian Buffers", 2020 IECA Annual Conference and Expo.

(34) Satvati, S. [+], Cetin, B., Ashlock, J. C., Ceylan, H., and **C. J. Rutherford**, "Binding Capacity of Quarry Fines for Granular Aggregates", GeoCongress 2020, Geotechnical Special Publications GSP 316, Minneapolis, MN, Feb 25-28, 2020, (2020).

(33) Jiang, X[+], **Rutherford, C. J.**, Cetin, B. and K. Ikuma, "Reduction of Water Erosion Using Bacterial Enzyme Induced Calcite Precipitation (Beicp) for Sandy Soil", GeoCongress 2020, Geotechnical Special Publications GSP 316, Minneapolis, MN, Feb 25-28, 2020, 2020).

(32) Cai, W. [+], **Rutherford, C. J.,** and J. Zheng, "Monotonic Behavior of Calcareous Sands with Increasing Particle Crushing", GeoCongress 2020, Geotechnical Special Publications GSP 316, Minneapolis, MN, Feb 25-28, 2020, (2020).

(31) Dickey, L. +, McEachran, A., **Rutherford**, **C. J.,** Perez M. A., Rehmann, C. R. , Isenhart, T., Jaynes, D. and T. Groh, "Slope Stability Analysis of a Saturated Riparian Buffer: A Case Study" GeoCongress 2020, Geotechnical Special Publications GSP 316 Minneapolis, MN, Feb 25-28, 2020, (2020).

(30) Padhye, N[+] and **C. J. Rutherford**, "Effects of Plastic and Non-Plastic Fines on the Shear Strength and Pore Water Pressure of Sands", GeoCongress 2020, Geotechnical Special Publications GSP 316, Minneapolis, MN, Feb 25-28, 2020, 2020).

(29) Fedakar, H. I., **Rutherford, C. J**. and B. Cetin, "Evaluation of Deformation Behavior of Sand-Clay Mixture under Traffic Loads", GeoCongress 2020, Geotechnical Special Publications GSP 316, Minneapolis, MN, Feb 25-28, 2020, (2020).

(28) Dickey, L.[+], McEachran, A., **Rutherford, C.**, Perez, M. A., Rehmann, C., Isenhart, T., and D. Jaynes, "Saturated Buffers: Treating Agricultural Subsurface Drainage", Proceedings of the IECA Annual Conference and Expo 2019, Denver, CO, Feb 19-22, 2019. ISBN: 978-1-5108-8389-5. (2019).

(27) Karim, M.Z., Tucker-Kulesza, S.E., **Rutherford, C. J**. and M. Bernhardt-Barry, "Geophysical Engineering to Identify Seepage Channels in the Hager Slough Levee", Proceedings of the Geo-Congress 2019. Geotechnical Special Publications GSP 311, DOI: 10.1061/9780784482131.035. (2019).

(26) Taukoor,V. [+], **Rutherford, C. J**., and S.M. Olson, "Cyclic Behavior of a Reconstituted Gulf of Mexico Clay", Proceedings of the Geo-Congress 2019: Earthquake Engineering and Soil Dynamics, Geotechnical Special Publications GSP 310, 313-321. DOI: 10.1061/9780784482100.032. (2019).

(25) Ikuma, K., Cetin, B., Rehmann, C., Ong, S. K., and **C. J. Rutherford,** (2018). "Use of Biocementation for Slope Stabilization of Levees," Report to the Midwest Transportation Department and U. S. Department of Transportation,

(24) Bhaumik, L. [+], Cerna-Diaz, A. A., [+] Numanoglu, O. A. [+], Olson, S. M., **Rutherford, C. J**., Hashash, Y. M. A., and T. Weaver, "Comparing Shear Response of Dense Sands from Centrifuge and Direct Simple Shear Tests with Published Correlations", Proceedings of the 5th Geotechnical Earthquake Engineering and Soil Dynamics Conference: Slope Stability and Landslides, Laboratory Testing, and In Situ Testing, GEESDV 2018 - Austin, TX. DOI: 10.1061/9780784481486.013. (2018).

(23) Wallace, J.F. [+], **Rutherford, C. J**. and Zheng, J. "Visualizing Failure Surfaces in Soft Clay Due to Suction Caisson Loading," Proceedings of the 2018 International Foundations Congress & Equipment Exposition (IFCEE 2018), Geotechnical Special Publications, March 5-10, 2018, Orlando FL. DOI: 10.1061/9780784481578.018. (2018).

(22) Cerna-Diaz, A., [+] Olson, S. M., Bhaumik, L., [+] **Rutherford, C. J**., Numanoglu, O. A.,[+] Hashash, Y. M. A., & Weaver, T. "Shear stress –shear strain during dynamic centrifuge and element level tests on sands", Proceedings of Geotechnical Earthquake Engineering and Soil Dynamics 2018, Austin, Texas. (2018).

(21) Taukoor, V. [+], **Rutherford, C. J**. and S. M. Olson, "Post-cyclic behavior of a Gulf of Mexico clay", Proceedings of the Geotechnical Earthquake Engineering and Soil Dynamics 2018, Austin, Texas. DOI: 10.1061/9780784481486.036. (2018).

(20) Olson, S., **Rutherford, C. J.,** Hashash, Y. M. A., Bhaumik, L[+]., Cerna-Diaz, A.[+], Numanoglu, O. A.,[+] "Dynamic Response of Soil under Multidirectional Loading: Experimental Investigation and Modeling", Report to United State Nuclear Regulatory Commission, (2017).

(19) Wallace, J. F.[+] and **C. J. Rutherford**, "Response of Vertically Loaded Centrifiuge Suction Caisson Models in Soft Clay", Proceedings of the Offshore Technology Conference, May 1-4, 2017, Houston Tx paper number: OTC-27698-MS. DOI: 10.4043/27698-MS. (2017).

(18) Wallace, J. F.[+] and **C. J. Rutherford**, "Response of Suction Caissons in Clay Under Monotonic and Cyclic Horizontal Loading", Proceedings of the GeoFrontiers 2017, Geotechnical Special Publications GSP 279, March 12-15, 2017, Orlando, FL. DOI: 10.1061/9780784480472.014. (2017).

(17) Bhaumik, L.[+], **Rutherford, C. J.,** Cerna-Diaz, A.[+], Olson, S. M., Numanoglu, O. A.[+], Hashash, Y. M. A., and T. Weaver, "Volumetric Strain in Non-plastic Silty Sand Subject to Multidirectional Cyclic Loading", Proceedings of the GeoFrontiers 2017, Geotechnical Special Publications GSP 280, March 12-15, 2017, Orlando, FL. DOI: 10.1061/9780784480489.016. (2017).

(16) Cerna-Diaz, A.[+], Olson, S. M., Numanoglu, O. A.[+], Hashash, Y. M. A., Bhaumik, L.[+], **Rutherford, C. J**., and T. Weaver, "Free-field cyclic response of dense sands in dynamic centrifuge tests with 1D and 2D shaking", Proceedings of the GeoFrontiers 2017, Geotechnical Special Publications GSP 280, March 12-15, 2017, Orlando, FL. DOI: 10.1061/9780784480489.013. (2017).

(15) Numanoglu, O. A.,[+] Hashash, Y.M.A., Cerna-Diaz, A.[+], Olson, S. M., Bhaumik, L.[+], **Rutherford, C. J**., and T. Weaver, "Nonlinear 3-D modeling of dense sand and simulation of soil-structure system under multi-directional loading", Proceedings of the GeoFrontiers 2017, Geotechnical Special Publications GSP 280, March 12-15, 2017, Orlando, FL. https://doi.org/10.1061/9780784480489.038. (2017).

(14) Harder, L. D., **Rutherford, C. J.,** Gamez, J., Musgrove, M., Tinoco, R. O., Bernhardt, M. L., Mofarraj, B., Lobbestael, A., Rosenlad, B., Uong, M., and N. Pinter, "Preliminary Observations of Levee Performance and Damage following the 2015-16 Midwest Floods in Missouri and Illinois", Association of State Dam Safety Officials Annual Conference (Dam Safety), Philadelphia, PA. ISBN: 9781510830752. (2016).

(13) Wallace, J. F. [+] and **C. J. Rutherford**, "Suction Caissons in So Clay for Tidal Current Turbine Applications", Proceedings of the Geo-Chicago, American Society of Civil Engineers, Geotechnical Special Publications GSP 269, August 16-28, 2016, Chicago, IL, USA. DOI: 10.1061/9780784480137.047. (2016).

(12) **Rutherford, C. J**. and N. Pinter, "Preliminary Observations of Levee Performance and Damage following the 2015-16 Midwest Floods in Missouri and Illinois, USA", Geotechnical Extreme Events Reconnaissance report., DOI: 10.18118/g62s38. (2016).

(11) Olson, S. M., Hashash, Y. M. A., **Rutherford, C. J**., Cerna-Diaz, A.[+], Numanoglu, O. A.,[+] Bhaumik, L[+]. and T. Weaver, "Experimental and numerical investigation of cyclic response of dense sand under multidirectional shaking", February 14-17, 2016. Phoenix, AZ. (2016).

(10) Olson, S., Hashash, Y., **Rutherford, C. J**., Cerna-Diaz, A.[+], Numanoglu, O.[+] and L. Bhaumik,[+] "Cyclic Response of Dense Sands in Dynamic Centrifuge Tests with 1D and 2D Shaking", Proceedings of the 6th International Conference on Earthquake Geotechnical Engineering, November 2-5, 2015. Christchurch, New Zealand. (2015).

(9) Wallace, J. F[+], Chini, C.[+], **Rutherford, C. J.** and J. M. Peschel, "Visualizing the failure surface of a laboratory vane shear in soft clay using transparent soil" Proceedings of the 3rd International Symposium on Frontiers in Offshore Geotechnics (ISFOG), 10-12 June 2015, Oslo, Norway. DOI: 10.1201/b18442-185 (2015).

(8) Wallace, J. F[-+], Chini, C.,[+] Peschel, J. M. and **C. J. Rutherford**, "Visualizing the shallow failure mechanism of the T-bar penetrometer," Proceedings of the 2015 International Foundations Congress & Equipment Exposition (IFCEE 2015),

Geotechnical Special Publications GSP 256, 17-21 March 2015, San Antonio, Texas. DOI: 10.1061/9780784479087.033 (2015).

(7) **Rutherford, C. J.**[#] and G. Biscontin, "The effect of shearing rate and slope angle on the simple shear response of marine clays." 2010 AGU Fall Meeting, December 13-17, San Francisco, CA. (2010).

(6) Bukhair, C. L., Thomas, T., **Rutherford, C. J.**[#] and G. Biscontin, "Slope stability for submarine clays: Triaxial and Consolidation Testing", Proceedings of the Submarine Mass Movements and Their Consequences, 4th Intl. Symp. November 7-12, Austin, TX. (2009).

(5) **Rutherford, C. J.**[#] and G. Biscontin, "Multi-directional simple shear response of Gulf of Mexico clays", Proceedings of the Submarine Mass Movements and Their Consequences, 4th International Symposium, November 7 - 12, Austin, TX. (2009).

(4) Low, H. E., Randolph, M. F., **Rutherford, C. J.**[#], Bernie, B. B. and J. M. Brooks, "Characterization of near seabed surface sediment", Proceedings of the Offshore Technology Conference, Houston, TX, OTC 19149. (2008).

(3) **Rutherford, C. J.,**[#] Biscontin, G., Koutsoftas, D. and J. -L. Briaud, "Numerical Modeling of Deep Soil Mixing Excavation Support", Proceedings of the Geocongress, Geotechnical Special Publications GSP 126, Atlanta, GA. (2006).

(2) **Rutherford, C. J.,**[#] Biscontin, G. and J. -L. Briaud, "Deformation Predictions Based on Estimates of Soil Cement Modulus and Flexural Stiffness", Proceedings of the 11th International Conference of IACMAG, June 19-24, 2005, Turin, Italy, Vol, 3, 433-440. (2005).

(1) **Rutherford, C. J.**,[#] Biscontin, G. and J. -L. Briaud, "Deep Mixing for Excavation Support: Design Issues," Proceedings of the GeoTrans 2004, Yegian, Kavazanjian, eds., July 27-31, 2004, Los Angeles, CA, 1356-1365. (2004).

4. Books and Book Chapters
None

5. Formally Invited Seminars and Presentations

(28) "Geotechnical Engineering". CE 120 Civil Engineering Learning Community Course 2022, Iowa State University.
(27) "Geotechnical Engineering". CE 105 Intro to Civil Engineering, 2021 Iowa State University.

(26) “Geotechnical Engineering”. CE 105 Intro to Civil Engineering September 20, 2020 Iowa State University.
(25) “Geotechnical Engineering”. CE 120 Civil Engineering Learning Community Course September 5, 2019, Iowa State University.
(24) “Geotechnical Engineering”. CE 105 Intro to Civil Engineering September 4, 2019, Iowa State University.
(23) ExCYted Seminar Speaker, Iowa State University, March 19, 2018.
(22) CCEE Graduate Student Coffee, Iowa State University, September 4, 2018.
(21) “Introduction to Geotechnical Engineering”, CCEE Learning Communities, Iowa State University, October 2, 2018.
(20) GRAD SWE Speaker, Iowa State University, November 1, 2018.
(19) “History, Electrical Resistivity and Rehabilitation of the Hager Slough Levee”. S. Tucker-Kulesza, **C. J. Rutherford** & M. L Bernhardt. ASCE Quad City Sections, Engineering Training Conference, October 13, 2017, St. Ambrose University, Davenport, IA.
(18) “Response of Vertically Loaded Centrifuge Suction Caisson Models in Soft Clay”. Offshore Technology Conference, May 1-4, 2017, Houston, TX.
(17) “Geotechnical Engineering”. CE 120 Civil Engineering Learning Community Course October 4, 2017, Iowa State University.
(16) “Geotechnical Engineering”. CE 105 Intro to Civil Engineering September 21, 2017, Iowa State University.
(15) Wallace, J. F.[+] and **C. J. Rutherford**, “Response of Suction Caissons in Clay Subjected to Monotonic and Cyclic Vertical Loading”, Geotechnical and Structural Engineering Conference, February 14-17, 2016. Phoenix, AZ.
(14) “Characterizing Offshore Sediments for Design of Renewable Energy Foundations.” Invited Speaker, University of California at Davis, Davis, CA. January 23, 2016.
(13) “Offshore Geotechnical Engineering.” Invited Speaker, Summer Scholar’s Seminar, University of Illinois at Urbana-Champaign, College of Engineering, December 9, 2015.
(12) “Offshore Foundation Design for Renewable Energy.” Invited Geotechnical Seminar Speaker, Kansas State University, Manhattan, KS. October 1, 2015.
(11) “Offshore Foundation Design for Renewable Energy.” Invited Geotechnical Seminar Speaker, Brigham Young University, Provo, UT. June 29, 2015.
(10) “Offshore Geotechnical Engineering.” Invited Speaker, Summer Scholar’s Seminar, University of Illinois at Urbana-Champaign, College of Engineering, July 1, 2014.
(9) “Undrained Shear Strength of Submarine Slopes.” Invited Workshop Speaker, The 12th G.A. Leonards Lecture, Purdue University, West Lafayette, IN. April 26, 2014.
(8) “Women in Engineering Academics.” Speaker, GradSWE (Graduate Society of Women Engineers), University of Illinois at Urbana-Champaign, Invited Guest and Speaker, Nov. 4, 2013.
(7) “Women Empowered in Science, Technology, Engineering and Mathematics.” Speaker, WeSTEM Conference, University of Illinois at Urbana-Champaign, April 20, 2013.

(6) “Undrained Shear Strength of Submarine Slopes.” Invited Seminar Speaker, Illinois State Geological Survey, Urbana, IL. April 1, 2013.
(5) “Offshore Geotechnical Engineering.” Invited Speaker, Civil and Environmental Engineering Alumni Dinner, Chicago, IL. March 14, 2012.
(4) “Development of a Multi-Directional Simple Shear Testing Device.” Invited Structures Seminar Speaker, Civil and Environmental Engineering, University of Illinois, Urbana, IL. September 10, 2012.
(3) “Development of a Multi-Directional Simple Shear Testing Device.” Invited Departmental Seminar Speaker, Civil and Environmental Engineering, University of Illinois, Urbana, IL. May 5, 2011.
(2) “Development of a Multi-Directional Simple Shear Testing Device.” Invited Departmental Seminar Speaker, Civil Engineering, University of Nebraska, Lincoln, NE. March 7, 2011.
(1) “Development of a Multi-Directional Simple Shear Testing Device.” Invited Departmental Seminar Speaker, Civil Engineering, Texas A&M University, College Station, TX. March1, 2011.

6. Contributed Presentations

(1) “Evaluating and Improving Current Design Standards for Saturated Buffers”, SWCS 75th International Annual Conference, July 27-20, 2020, McEachran, A., Dickey, L., Rehmann, C., **Rutherford, C. J.,** Perez, M., Ishenhart, T., and Groh, T.
(2) “Streambank Stability of Saturated Buffers” Iowa Water Conference, 2020, Dickey, L., McEachran, A., **Rutherford, C. J.**, Perez, M. Rehmann, C. and Groh, T.

7. Other Scholarly Contributions

(1) Jiang, X., , **Rutherford, C. J.,** Ikuma, K., and Cetin, B. “Use of Biocementation for Slope Stabilization of Levees” Final Report November 2018, Institute for Transportation, Iowa State University.
(2) Satvati, S., Cetin, B., Ashlock, J.A., Ceylan, H. and **Rutherford, C. J.** “Use of Waste Quarry Fines as a Binding Material in Unpaved Roads” Final Report August 2020, Institute for Transportation, Iowa State University.
(3) Radio interview, Windy Wilde, WHO-Radio AM 1040, “Flooding in the Midwest”, January 2020.
(4) Podcast interview, Kate Tindall, Iowa State University College of Engineering News Services, “Flooding Impact on Levee System”, October 3, 2019. https://www.news.iastate.edu/news/2019/04/22/levees
(5) News article interview, Jeff Martin and Janet McConnaughley, The Associated Press, “Flooded Mississippi a Threat as Hurricane Season Heats Up”, August 14, 2019. https://www.usnews.com/news/us/articles/2019-08-14/flooded-mississippi-a-threat-as-hurricane-season-heats-up
(6) Television interview, Channel 5 We Are Iowa, “Iowa’s flood prevention receives C-“, August 5, 2019. https://www.weareiowa.com/news/iowas-flood-prevention-receives-c/

(7) News article interview, Mike Krapfl, Iowa State University News Services, "Iowa State geotechnical engineer studied failed levees, researches potential solutions", April 22, 2019. https://www.news.iastate.edu/news/2019/04/22/levees

(8) McEachran, A., Dickey, L.[+], Rehmann, C., Perez, M. A., **Rutherford, C. J.**, Isenhart, T., and D. Jaynes, "Evaluation of saturated buffers as a conservation practices for treating surface drainage", 2019 Iowa Water Conference, Ames, IA, March 12-13, 2019. poster. (2019).

(9) Dickey, L.[+], McEachran, A., **Rutherford, C. J.**, Perez, M. A., Rehmann, C., Isenhart, T., and D. Jaynes, "Evaluation of slope stability at saturated buffer sites", 2019 Iowa Water Conference, Ames, IA, March 12-13, 2019. poster. (2019).

(10) Podcast interview, Peggy Smedley Show, "A conversation about Critical Infrastructure", July 24, 2018, episode 573, average number of listeners ~115,000. https://peggysmedleyshow.com/072418-a-conversation-about-critical-infrastructure

(11) News article interview, Tindall, K. "NSF CAREER recipient Cassandra Rutherford joins CCEE", January 9, 2017. https://news.engineering.iastate.edu/2017/01/09/rutherford/

(12) Olson, S. M., Hashash, Y. M. A., **Rutherford, C. J**., Cerna-Diaz, A.[+], Numanoglu, O. A.,[+] Bhaumik, L[+]., & T. Weaver," Experimental and numerical investigation of cyclic response of dense sand under multidirectional shaking." Geotechnical and Structural Engineering Conference, February 14-17, 2016. Phoenix, AZ, peer-reviewed abstract (2016).

(13) Wallace, J. F.[+] and **C. J. Rutherford**, "Response of laterally loaded suction caissons," Geotechnical and Structural Engineering Conference, February 14-17, 2016. Phoenix, AZ. peer-reviewed abstract (2016).

(14) News article interview, "Rutherford Wins CAREER Award", CEE University of Illinois Urbana Champaign, January 9, 2015. https://cee.illinois.edu/news/rutherford-wins-career-award

(15) News article interview, Mike Koon, Engineering Communications Office, University of Illinois Urbana-Champaign, "Sketch-based Learning Becoming a Reality Thanks to CEE Professors", September 22, 2014. https://cee.illinois.edu/news/sketch-based-learning-becoming-reality-thanks-cee-professors

(16) News article interview, CEE University of Illinois, "Four New Faculty Members Join CEE", September 14, 2011. https://cee.illinois.edu/news/four-new-faculty-members-join-cee

(17) **Rutherford, C. J.** [#] and G. Biscontin, "The effect of shearing rate and slope angle on the simple shear response of marine clays", 2010 AGU Fall Meeting, poster, December 13-17, San Francisco, CA. (2010).

B. Patents, Disclosures, and Technology Transfer

None.

C. Funded Grants and Contracts

Generated over $3.43 million ($1.3M as PI, $2.13M as Co-PI) funding to support research from federal, state, local and industry sources as a principal and co-principal investigator.

(1) Investigators/Institutions: **Cassandra Rutherford**, Poleacovschi, C. (ISU CCEE), Franz, K. (ISU GE AT), Woelfle-Erskine, C. (University of Washington)
Title: NNA Planning: Community-based Mitigation and Adaptive Strategies for River Flooding and Erosion in Alaska Native Communities
Funding agency: National Science Foundation
Dates: 9/1/2021-8/31/2023
Amount: $300,000
Role: Principal Investigator

(2) Investigators/Institutions: **Cassandra Rutherford**, Chris Rehmann (ISU), Evrim Baran(ISU), Aliye Karabulut-Ilgu (ISU), Benjamin Ahn (ISU)
Title: IrecognizeU: Finding the Pathway to Increasing Women Civil Engineering Students' Feeling of Recognition to Develop an Engineering Identity
Funding agency: National Science Foundation
Dates: 8/1/2020-7/31/2022
Amount: $199,938
Role: Principal Investigator

(3) Investigators/Institutions: **Cassandra J. Rutherford** and Alesandra Morles (University of Puerto Rico)
Title: "Collaborative Proposal for GTWF Seed Grants 2019-2020"
Funding agency: National Science Foundation/ Women Geotechnical Engineering Networking
Dates: 2020-2020
Total: $6000
Role: Principal Investigator

(4) Investigators/Institutions: Sritharan, S. (ISU CCEE), Tootle, D. (ISU), MacKenzie, C. (ISU IMSE), Poleacovschi, C. (ISU CCEE), **Rutherford, C. J. (ISU CCEE)**
Title: Planning Grant: Engineering Research Center for Hazard Mitigation and Community Resilience (HMCR)
Funding agency: National Science Foundation
Dates: 9/1/19-8/31/2022
Amount: $100,000
Role: Co-Principal Investigator (added after awarded)

(5) Investigators/Institutions: Poleacovschi, C. (ISU CCEE), **Rutherford, C. J.** (ISU CCEE), Feinstein, S. (ISU POLS), Walsh, S. (ISU PHIL).
Title: Collaborative: Standard: Institutions in Student Organizations Cultivating Cultures of Ethical Engineering

Funding agency: National Science Foundation
Dates: 9/1/19-8/31/2022
Amount: $311,249
Role: Co-Principal Investigator

(6) Investigators/Institutions: Ceylan, H. (ISU CCEE), **Rutherford C. J.** (ISU CCEE), and Cetin, B. (Michigan State)
Title: Base Stabilization Additives – Effect on Granular Equivalency
Funding agency: Minnesota Department of Transportation
Dates: July 2019 – December 2021
Amount: $197,864 (Co-PI: $98,932)
Role: Co-Principal Investigator

(7) Investigators/Institutions: Ashlock, J.C. (ISU CCEE), **Rutherford C. J.** (ISU CCEE), Ceylan, H. (ISU CCEE), and Cetin, B. (Michigan State)
Title: Use of Waste Quarry Fines as a Binding Material in Unpaved Roads
Funding agency: Federal Highway Administration – Iowa Department of Transportation
Dates: April 2018 – March 2020
Amount: $150,000 (Co-PI: $50,000)
Role: Co-Principal Investigator

(8) Investigators: **Rutherford, C J.** (ISU CCEE), Perez, M.A. (Auburn), Rehmann, C. (ISU CCEE), and Isenhart, T. (NREM)
Title: "Evaluation and Enhancement of Saturated Buffers as a Conservation Drainage Practice for Agricultural Subsurface Drainage Treatment".
Funding agency: United States Department of Agriculture – Natural Resources Conservation Service
Dates: 2018 – 2020
Total: $150,000
Role: Principal Investigator

(9) Investigators: Rehmann, C. (ISU CCEE), Perez, M.A. (Auburn), **Rutherford, C. J.** (ISU CCEE), and Isenhart, T. (NREM)
Title: "Hydrologic Evaluation of Saturated Buffers as a Conservation Drainage Practice for Agricultural Subsurface Drainage Treatment".
Funding agency: Iowa Nutrient Research Center
Dates: 2018 – 2020
Total: $97,911 (Co-PI: $32,637)
Role: Co-Principal Investigator

(10) Investigators: Ikuma, K., Cetin, B., Rehmann, C., Ong, S. K. and **Rutherford, C. J.**
Title: "Use of Biocementation for Slope Stabilization of Levees".
Funding agency: ISU Midwest Transportation Center, USDOT/OST-R

Dates: 09/01/16-11/30/18
Total: $162,233
Role: Co-Principal Investigator (added after awarded)

(11) Investigators: **Rutherford, C. J.**
Title: "Research Experience for Undergraduates"
Funding agency: National Science Foundation
Dates: 5/31/2016-8/31/2016
Total: $10,000
Role: Principal Investigator

(12) Investigators: Hashash, Y, (UIUC). Olson, S. (UIUC) and **Rutherford, C. J.**
Title: "Hysteretic Soil Constitutive Model Development in MOOSE"
Funding agency: "Battelle Energy Alliance (subcontract from Department of Energy)
Dates: 1/31/2016-12/31/2016
Total: $62,369 (Co-PI: $20,789)
Role: Co-Principal Investigator

(13) Investigators: **Rutherford, C. J.**
Title: "CAREER: Experimental Modeling of Tidal Current Turbine Foundations: An Integrated Research and Education Plan"
Funding agency: National Science Foundation
Dates: 2/1/2015-2/1/2020
Total: $500,000
Role: Principal Investigator

(14) Investigators: **Rutherford, C. J.**
Title: "Research Experience for Undergraduates"
Funding agency: National Science Foundation
Dates: 5/31/2015-8/31/2015
Total: $10,000
Role: Principal Investigator

(15) Investigators: **Rutherford, C. J.**
Title: "CEE Women Exploring Graduate Opportunities in Civil and Environmental Engineering Workshop (We Go CEE)"
Source: University of Illinois Urbana Champaign, Department of Civil and Environmental Engineering, Urbana IL
Dates: 20014-2016
Total: $60,000
Role: Principal Investigator

(16) Investigators: **Rutherford, C. J.**
Title: "Geotechnical Laboratory Instructional Innovation Grant"

Source: University of Illinois Urbana Champaign, College of Engineering, Urbana, IL
Dates: 2014-2015
Total: $78,363
Role: Principal Investigator

(17) Investigators: Peschel, J. M. (UIUC), Konar, M. (UIUC), **Rutherford, C. J.**
Title: "Extending the Curriculum Content of Existing Sketch Recognition Tutoring System with Immediate Feedback to Engage Cross-Disciplinary Instructors"
Source: University of Illinois Urbana Champaign, College of Engineering, Urbana, IL
Total: $63,973 (Co-PI: $21,324)
Role: Co- Principal Investigator

(18) Investigators: Peschel, J. M. (UIUC), Konar, M. (UIUC), **Rutherford, C. J.**
Title: "A Flow Net Sketch Recognition Tutoring System: Improved Student Learning through Mobile Active Learning and Immediate Student Feedback"
Source: University of Illinois Urbana Champaign, College of Engineering, Urbana, IL
Total: $50,000
Role: Co- Principal Investigator

(19) Investigators: Olson, (UIUC) S. M., Hashash, Y. (UIUC) and **Rutherford, C. J.**
Title: "Investigation and Modeling of Element-Level Soil Behavior under Multi-Dimensional Loading"
Funding agency: Nuclear Regulatory Commission
Dates: 9/20/2012-9/30/2017
Total: $786,560 (Co-PI: $262,186)
Role: Co- Principal Investigator

(20) Investigators: Garcia, M. (UIUC) and **Rutherford, C. J.**
Title: "Hydrodynamic Behavior of Thickened Tailings"
Funding agency: Exxon-Mobil Corporation
Dates: 2012-2013
Total: $46,130 (Co-PI: $23,065)
Role: Co- Principal Investigator

D. Pending Grants and Contracts

III. TEACHING AND STUDENT MENTORING

A. Instruction for ISU

Term (most recent first)	Course number	Course Title	Credits	Lab	Number of students	TA/graders
Fall 2021	CE 360	Geotechnical Engineering	4	Yes	52	1/0

Fall 2021	CE 561	Applied Foundation Engineering	3	No	12	0/0
Fall 2021	CE 581	Geotech and Mat Engr Seminar	1	No	19	0/0
Spring 2021	CE 360	Geotechnical Engineering	4	Yes	51	1/0
Fall 2020	CE 565	Fundamentals of Geomaterials Behavior	3	No	10	0/0
Fall 2020	CE 360	Geotechnical Engineering	4	Yes	49	1/0
Spring 2020	CE 561	Applied Foundation Engineering	3	No	7	0/0
Spring 2020	CE 581	Geotech and Mat Engr Seminar	1	No	20	0/0
Fall 2019	CE 360	Geotechnical Engineering	4	Yes	40	1/0
Fall 2019	CE 563	Experimental Methods in Geo-Engineering	3	Yes	8	0/0
Spring 2019	CE 581	Geotech and Mat Engr Seminar	1	No	36	0/0
Fall 2018	CE 360	Geotechnical Engineering	3	Yes	98	2/0
Spring 2018	CE 561	Applied Foundation Engr	3	No	15	0/0
Fall 2017	CE 581	Geotech and Mat Engr Seminar	1	No	39	0/0
Fall 2017	CE 360	Geotechnical Engineering	3	Yes	54	1/0
Spring 2017	CE 563	Experimental Methods in Geo-Engineering	3	Yes	9	0/0

B. Curricular Development Activity for ISU

(1) CEE 563 – “Experimental Methods in Geo-Engineering”, Spring 2017, updated entire course to include advance laboratory testing methods and dynamic testing data analysis
(2) Developed online video examples to be used by undergraduate CE students to prepare for Fundamentals of Engineering Exam
(3) Re-established the Geotechnical and Materials Engineering Seminar course CE 581
(4) Developed virtual laboratory videos for CE 360 and study guide with online examples

C. Supervision of Students as Major Professor

(1) Mr. Trevor Meinholz, ISU CCEE, MS, expected August 2022, Co-major professor with Dr. Vern Schaefer
(2) Ms. Shiva Ourang, ISU CCEE MS, expected August 2022, co-major professor with Dr. Cristina Poleacovschi
(3) Ms. Xinyi Jiang, ISU CCEE, PhD, August 2019-present, work in progress - degree expected May 2022.

(4) Ms. Wenjing Cai, ISU CCEE, PhD, May 2017-Dec 2020, "Monotonic Loading Behavior of Calcareous Sands with Increasing Particle Crushing", May 2020, first position: Lecturer/Instructor Chengdu University of Technology, China
(5) Mr. Yufeng Cuo, ISU CCEE, MS, May 2020, Non-thesis.
(6) Mr. Nikheel Padhye, ISU CCEE, MS, May 2017-May 2020, "Effect of plastic and silty fines om the shear behavior and pore water pressure generation in sands", May 2020, position accepted at Terracon.
(7) Ms. Loulou Dicky, ISU CCEE, MS, Aug 2018-August 2020, "Evaluation of the slope stability of streambanks at saturated riparian buffer sites" August 2020. Now a Ph.D. student with Dr. Chris Rehmann.
(8) Mr. Weihao Wu, May 2019, MS, Non-thesis.
(9) Mr. Michael Withuski, May 2019, MS, Non-thesis.
(10) Ms. Xinyi Jiang, ISU CCEE MS, May 2017-May 2019, "Development of novel ground improvement methods", May 2019, now PhD student with Dr. Rutherford.
(11) Mr. Adam Maher, ISU CCEE, MS, May 2017-May 2018, "Development of a split mold for internal consolidated undrained isotropic compression (CUIC) testing of low effective stress soils from slurry", May 2018, First Position: Terracon.
(12) Mr. Abdullah Abdullah, ISU CCEE, MS, May 2018, Non-thesis.
(13) Mr. Zhengkai Zhu, ISU CCEE, MS, May 2018, Non-thesis.
(14) Mr. Chang, Zhao, ISU CCEE, MS, May 2018, Non-thesis.
(15) Mr. Vashish Taukoor, UIUC CEE, PhD, 2014-2018, Dissertation Title: "Undrained Shear Strength Degradation of So Clays Under Cyclic Loading", Dec 2019, First Position: Geosyntec Consultants.
(16) Mr. Jeff Wallace, UIUC CEE PhD, 2012-2018, Dissertation Title: "Response of Suction Caissons Under Cyclic Loading for Tidal Current Foundation Applications", May 2018. First position: Mott McDonald.
(17) Mr. Ozgun Numanoglu, UIUC CEE PhD (co-advised with Y. Hashash); 2013-2018, Dissertation Title: "Modeling of Dense Sand Behavior Under Multi-Dimensional Loading", Dec 2019. First Position: Golder Associates.
(18) Ms. Lopamurda Bhaumik, UIUC CEE PhD, 2013-2018, Dissertation Title: "Investigation of Element-Level Behavior of Dense Sand Under Multidirectional Cyclic Simple Shear Loading Conditions", Dec 2018. First position: Mott McDonald.
(19) Mr. Alfonso Cerna Diaz, UIUC CEE PhD. (co-advised with S. Olson); 2013-2018, Dissertation Title: "Evaluation of Cyclic Behavior of Dense Sand Under Multidirectional Loading Using Centrifuge Tests", Dec 2018. First Position: AECOME URS.
(20) Mr. Daniel Hauser, UIUC CEE MS non-thesis, 2015-2016, Project Title: "Design and Testing of Resonant Column/Torsional Shear Device for Saturated Transitional Soils", May 2016. First position: Mott McDonald.
(21) Mr. Adrian Naranjo Castillo, UIUC CEE MS non-thesis (co-advised with S. Olson), 2014-2015, Project Title: "Use of Resonant Column/Torsional Shear Device for Transitional Soils". December 2015, first position: Mott McDonald.
(22) Mr. Christopher Chini, UIUC CEE M.S. (co-advised with J. M. Peschel); 2013-2015, Thesis: "An Experimental Method for Visualizing Undrained Shearing Failure in a

Transparent Soft Clay Surrogate", May 2015, continued with PhD with Dr. Stillwell (UIUC).

D. Service on Graduate Student Committees

(1) Mr. Hasung Kim, PhD, in progress, Iowa State University, Department of Civil, Construction and Environmental Engineering, Committee Member
(2) Ms. Joyce Kamau, PhD, in progress, Iowa State University, Department of Civil, Construction and Environmental Engineering, Committee Member
(3) Mr. Luan Nguyen , PhD, in progress, Iowa State University, Department of Civil, Construction and Environmental Engineering, Committee Member
(4) Ms. Kanika Lamba, PhD, in progress, Iowa State University, Department of Civil, Construction and Environmental Engineering, Committee Member
(5) Mr. Hossein Alimohammadi, PhD, August 2021, Iowa State University, Department of Civil, Construction and Environmental Engineering, Committee Member
(6) Mr. Kwangwoo Wi, PhD, in progress, Iowa State University, Department of Civil, Construction and Environmental Engineering, Committee Member
(7) Ms. Derya Genc, PhD, May 2021, Iowa State University, Department of Civil, Construction and Environmental Engineering, Committee Member
(8) Ms. Andrea McEachran, MS, August 2020, Iowa State University, Department of Civil, Construction and Environmental Engineering, Committee Member
(9) Mr. Sharif Gushgari, PhD, May 2020, Iowa State University, Department of Civil, Construction and Environmental Engineering, Committee Member
(10) Ms. Yuderka Trinidad Gonzalez, PhD, May 2020, Iowa State University, Department of Civil, Construction and Environmental Engineering, Committee Member
(11) Mr. Irvin Pinto, PhD, May 2020, Iowa State University, Department of Civil, Construction and Environmental Engineering, Committee Member
(12) Mr. Zefeng Zhou, PhD, 2019, University of Western Australia, Perth, External Evaluator
(13) Mr. Andrew Anderson, PhD, in progress, University of Illinois Urbana-Champaign, Department Civil and Environmental Engineering, Committee Member
(14) Ms. Dimitra Zografou, PhD, 2018, University of Western Australia, Perth, External Evaluator
(15) Mr. Joon Han Kim, 2018, PhD, University of Illinois Urbana-Champaign, Department Civil and Environmental Engineering, Committee Member
(16) Mr. Xuan Mei, 2017, University of Illinois Urbana-Champaign, Department Civil and Environmental Engineering, Committee Member
(17) Mr. Pouyan Assem, PhD, 2017, University of Illinois Urbana-Champaign, Department Civil and Environmental Engineering, Committee Member
(18) Ms. Erin Dillion Sibley, 2016, PhD, University of Illinois Urbana-Champaign, Department of Civil and Environmental Engineering, Committee Member
(19) Ms. Randa Asmar, 2016, PhD, University of Illinois Urbana-Champaign, Department of Civil and Environmental Engineering, Committee Member

E. Supervision of Post-Doctoral Students and Professional Staff

(1) Dr. Halil Ibrahim Fedakar, November 2018 - November 2019, “Cyclic Hollow Cylinder Testing of Sands”, Visiting Scholar from Department of Civil Engineering, Abdullah Gül University

F. Supervision of Independent Study and Undergraduate Research

(1) Mr. Gabe Cook, ISU Honors Thesis student, Spring 2022. Project Title: Development of Tilt Table

(2) Mr. Nathan Pearson, ISU Honors Thesis student, Spring 2022. Project Title: Development of Tilt Table

(3) Mr. John Seagrist (ISU CCEE student) Spring 2022. Project Title: Modeling of the Y-K Delta, Alaska

(4) Ms. Grace Freed (ISU CCEE student) Fall 2021.

(5) Mr. Alberto (ISU CCEE student) Fall 2021.

(6) Ms. Libby Rodman (ISU CCEE student) Fall 2021.

(7) Ms. Leah Thornquist (ISU CCEE student) Spring 2017.

(8) Ms. Kenya Mercado (UIUC CEE REU); Summer and Fall 2016. Project Title: “Characterization of Silty and Well graded Sand in Oedometer and under Triaxial Loading.”

(9) Mr. Grant Wu (UIUC CEE REU); Summer and Fall 2016. Project Title: “Characterization of Clean and Well graded Sand Under Triaxial Loading and Shear wave Velocity Interpretation from Bender Elements.”

(10) Ms. Hannah Blomberg (UIUC CEE REU); Fall 2016. Project Title: “Laboratory Characterization of Sand and Shear wave Velocity Interpretation from Bender Elements”

(11) Mr. Wesley Parish (UIUC CEE REU); Fall 2016. Project Title: “Characterization of Silty Sand Under Cyclic Simple Shear.”

(12) Ms. Morgan King (UIUC CEE REU); Fall 2016. Project Title: “Preparation of Kaolin Test Beds for 1G Foundation Model Testing”

(13) Mr. Steven Nowak (UIUC CEE REU); Summer 2016. Project Title: “Resonant Column/Torsional Shear Testing of Silty Sands”

(14) Ms. Nicole Vail (UIUC CEE REU); Summer 2016. Project Title: “Laboratory Testing of Kaolin”

(15) Ms. Sarah Menz (UIUC CEE REU); Fall 2015. Project Title: “Geotechnical Characterization of Kaolin for use in Model Scale Testbeds”

(16) Mr. Andrew (A.J.) Unander (UIUC CEE REU); Fall 2015. Project Title: “PLAXIS 2D/3D Modeling for Underwater Foundations in Clay”

(17) Mr. Daniel Chang (UIUC CEE REU); Fall 2015. Project Title: “Characterization of Sand Under Cyclic Loading”

(18) Mr. Krish Saxena (UIUC CEE Undergradaute Research Assistant); August 2015-May 2016. Project Title: “3D Printing of Modified Split Model of Triaxial Testing”

(19) Mr. Antonio Domel (UIUC CEE 497 Independent Study); Spring/Fall 2015. Project Title: “Small Scale Testing of Tidal Current Turbines”

(20) Mr. Daniel Hauser (UIUC CEE REU); Spring 2014. Project Title: “Characterization of Kaolinite Testbeds for 1G Scale Model Testing”; First Position: CEE MS Program with C.J. Rutherford, University of Illinois at Urbana-Champaign
(21) Mr. Gordon Stone (UIUC CEE REU); Fall 2014. Project Title: “Characterization of Laponite Samples for In Situ Testing”; First Position: CE MS Pro-gram with Dr. N. Stark, Virginia Tech
(22) Ms. Catherine Alice (UIUC CEE REU); Summer 2014. Project Title: “Geotechnical and Optical Properties of Laponite and Layered Laponite-Soil”; First Position: CE MS Program in Structural Engineering, University of Illinois at Urbana-Champaign

G. Non-ISU Instruction (e.g., Short Courses, Workshops, Training)
(1) Instructor, CEE 585 - Deep Foundations, University of Illinois at Urbana-Champaign, Dept. of Civil and Environmental Engineering, Fall 2016 (36 students).
(2) Instructor, CEE 380 - Introduction to Geotechnical Engineering, University of Illinois at Urbana-Champaign, Dept. of Civil and Environmental Engineering, Spring 2015 (62 students).
(3) Instructor, CEE 585 - Deep Foundations, University of Illinois at Urbana-Champaign, Dept. of Civil and Environmental Engineering, Fall 2015 (34 students).
(4) Instructor, CEE 380 - Introduction to Geotechnical Engineering, University of Illinois at Urbana-Champaign, Dept. of Civil and Environmental Engineering, Spring 2014 (111 students).
(5) Instructor, CEE 585 - Deep Foundations, University of Illinois at Urbana-Champaign, Dept. of Civil and Environmental Engineering, Fall 2014 (29 students).
(6) Instructor, CEE 380 - Introduction to Geotechnical Engineering, University of Illinois at Urbana-Champaign, Dept. of Civil and Environmental Engineering, Spring 2013 (50 students)
(7) Instructor, CEE 380 - Introduction to Geotechnical Engineering, University of Illinois at Urbana-Champaign, Dept. of Civil and Environmental Engineering, Fall 2012 (114 students).

H. Other Teaching and Student Mentoring Contributions
(1) ISU Preparing Future Faculty Mentor 2021 Joyce Kamau (CCEE PhD student)
(2) ISU Preparing Future Faculty Mentor 2020 Carolina Barbosa Resende (CCEE PhD student)
(3) ISU Preparing Future Faculty mentor 2020 Nathan Miner (CCEE PhD student)
(3) Presenter and volunteer, CCEE Freshman Research Initiative Spring 2017, Fall 2017.
(4) Instructor, ENGR 198-GC “Grand Challenges”, freshman design course on “Restoring and Improving Urban Infrastructure” University of Illinois at Urbana-Champaign, Dept. of Civil and Environmental Engineering Fall 2012, Fall 2013.

IV. INSTITUTIONAL SERVICE

A. University-Level Service
None.

B. College-Level Service

2017-present United Way College of Engineering, Committee Member, organized two full day craft days and twelve bake sales to fund raise for United Way of Story County.

C. Department-Level Service

2021-present CCEE Geotechnical Engineering faculty search committee, Committee Member
2021-CCEE Construction engineering term faculty search committee, Committee Member
2020-present CCEE Peer Teaching Observer
2020-2021 CCEE Geotechnical Engineering faculty search committee, Committee Member
2019-present, advisor for Geo-Institute student chapter
2019-2020, CCEE Environmental Engineering faculty search committee, Committee Member
2019 – present, CCEE Student Recruitment Committee, Chair
2017-2019, Environmental Health and Safety, CCEE committee, Committee Member
2018-2021 CCEE Promotion and Tenure Review Committee, Committee Member
2018, CCEE ABET, meet with evaluator, prepared CE 360 documents
2017-2020 Geotechnical and Materials Engineering Graduate Advisor
2017-present, CCEE social events, organize department wide coffees and lunches
2017-CCEE Geotechnical Engineering laboratory manager search committee, Committee Member
2017-CCEE Geotechnical Engineering faculty search committee, Committee Member
2017-2019, CCEE Space and lab cost recovery subcommittee, Committee Member
2017-present, Volunteer Food at First as department representative
2018-present CyGrad Recruitment weekend, Co-Organizer

V. PROFESSIONAL SERVICE

A. Editorial and Review Service for Manuscripts

Soils and Foundations, reviewer, 2011-present
Geotechnical Testing Journal, reviewer, 2011-present
Offshore Technology Conference, reviewer, 2011-present
Canadian Geotechnical Journal, reviewer, 2011-present
ASCE Journal of Geotechnical and Geoenvironmental Engineering, reviewer, 2011-present

B. Service to Professional Societies

(1) MC for Geo-Wall Challenge at GeoCongress 2022
(2) Deep Foundation Institute, chair subcommittee on Young Professor and Student Paper Competition, 2022
(3) Geo-Institute, Student Participation Committee, chair, 2021-present
(4) Deep Foundation Institute Journal, Board of Editors, 2020-present
(5) Geo-Institute, Soil Properties and Modeling Technical Committee, Subcommittee for awards, Chair since 2016
(6) Geo-Institute, Student Participation Committee, treasurer, 2018-2021
(7) American Society of Civil Engineers, Marine Renewable Energy Technical Committee, Member since 2015
(8) American Society of Testing and Materials, ASTM Member, D18 Soil and Rock Technical Committee, Member since 2014
(9) American Society of Testing and Materials, ASTM D18.09 Cyclic and Dynamic Properties of Soils Technical Committee, Member since 2014
(10) Geo-Institute, Soil Properties and Modeling Technical Committee, Member since 2014
(11) Geo-Institute, Student Participation Committee, member since 2014
(12) International Society of Soil Mechanics and Geotechnical Engineering, Students and Younger Members Presidential Group (SYMPG), Member 2013-2015
(13) Deep Foundations Institute, Women of DFI Committee, Member since 2013
(14) Deep Foundations Institute, Marine Foundations Technical Committee, Member since 2013
(15) International Society of Soil Mechanics and Geotechnical Engineering Member, Offshore Geotechnics Technical Committee, Member since 2011
(16) United States Universities Council on Geotechnical Education and Research Geo-Institute, Member since 2011, Board Member since 2017
(17) American Society of Civil Engineers, Member since 2002
(18) American Society of Engineering Education, Member since 2002
(19) National Honor Society Chi Epsilon, Member since 2001

C. Grant Review Activities

National Science Foundation, Geotechnical Engineering Panel Member, served on 8 panels, Panel Member
National Science Foundation, Graduate Research Fellowship, Panel Member, served on 2 panels, Panel Member

D. Government, Educational, or Corporate Advisory Committees

Governor Reynold of Iowa, Blue Ribbon Committee on Flooding, Infrastructure and Levee subcommittee member, 2019 – 2020

E. Other Professional Service
(1) Remote Excellence in Civil Engineering Education (ExCEEd) workshop, mentor 2021

(2) Co-Chair, GeoCongress 2022, Civil Engineering Education Session
(3) Advisory board, 4th International Symposium on Frontiers in Offshore Geotechnics 2020, Austin TX
(4) Technical program co-chair, Deep Foundations Institute 2019 DFI 44 conference
(5) Chair, Geo-Chicago 2016, Offshore Geotechnical Engineering Session

VI. DIVERSITY, EQUITY, AND INCLUSION ACTIVITIES

- Participated in f2f: Faculty-to-Faculty Mentoring Dialogues program through the Midwest Experiences in Mentoring Excellence with sessions specifically on diversity, equity, and inclusivity.

VII. OUTREACH, COMMUNITY ENGAGEMENT AND OTHER ACTIVITIES

A. Outreach Activities

(1) STEAM Event, Nevada Central Elementary, 1-day STEAM Event for 500 students and family members, Organizer 2019-present
(2) STEM Boone, STEM Event, Geotechnical engineering booth
(3) STEM Outreach, Booker T. Washington Elementary, 2-week Geotechnical Engineering lesson plan on renewable energy for 4th grade, 2014, 2015, 2016.
(4) Girls' Adventures in Mathematics, Engineering, and Science (GAMES) Camp: Environmental Engineering and Sustainability Track, Tidal Current Turbine experiments, 2014, 2015, 2016.
(5) STEM Outreach, Booker T. Washington Elementary, 2-week Geotechnical Engineering lesson plan and design project for 2nd grade, 2013, 2014, 2015, 2016.
(6) Coordinator, Exploring Your Options Summer Camp, College of Engineering, University of Illinois Urbana Champaign, Geotechnical Engineering Mechanically Stabilized Earth Wall Activity, 2012, 2013, 2014, 2015

B. Community Engagement Activities

- Training for engineers and designers for saturated buffers.