Stacey E. Kulesza

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San Marcos, TX 78666

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EDUCATION AND CERTIFICATION

PhD, Civil Engineering, Geotechnical focus, Texas A&M University *August 2013*
ME, Civil Engineering, Geotechnical focus, Texas A&M University *December 2009*
BS, Civil Engineering, Geotechnical focus, Texas A&M University *December 2008*
Professional Engineer, State of Kansas, PE License 25692

RESEARCH INTERESTS

- Coastal and fluvial infrastructure durability
- Applied geophysics
- Soil erosion potential & erodibility
- Railroad substructure performance and ballast behavior
- Geotechnical asset management
- Asset-based engineering identities

PROFESSIONAL EXPERIENCE

Associate Professor, *Civil Engineering,* Texas State University *2021–present*
Director, CREATE University Transportation Center, US DOT *2023-present*
Int. Director, Infrastructure Research Laboratory, Texas State University 2025-*present*
Associate Professor, *Civil Engineering,* Kansas State University *2019–2021*
Assistant Professor, *Civil Engineering,* Kansas State University *2013–2019*
Graduate Research Assistant, *Civil Engineering*, Texas A&M University *2009–2013*

PUBLICATIONS

Peer-Reviewed Publications

Kulesza, S., Minichiello, A., and Liang, J. (2026). "Community, safety, and service: Attitudes of social responsibility among student veterans in undergraduate engineering degree programs." *Journal of Women and Minorities in Science and Engineering, 32(4)*. 10.1615/JWomenMinorScienEng.2025059147.

Zimmerman, A.[*], Parsons, R., **Kulesza, S.**, and Han, J. (2026). "Development of Geotechnical Asset Management for Embankments and Slopes (GAMES)." *Transportation Research Record*, 2380(6), 557-568. https://doi.org/10.1177/03611981251387121.

Almikati, A. and **Kulesza, S.** (2026). A "Simplified Model to Predict Critical Shear Stress in Plastic Soils for Bridge Scour." *Transportation Geotechnics*, 56, https://doi.org/10.1016/j.trgeo.2025.101818.

Gombac, A.[*], **Kulesza, S.**, and Almikati, A. (2025). "Efficacy of marine electrical resistivity surveys to determine maximum scour depth and scour infill." *Transportation Research Record*, 2679(10), 94-107. https://doi.org/10.1177/03611981251341346.

[**] Graduate student, [**]Undergraduate student

Parr, K.[*], **Kulesza, S**., and Barry, M. (2024). "Modified complex electrical resistivity technique: applications to saturated and unsaturated soils." *ASTM Geotechnical Testing Journal*, 47(6), https://doi.org/10.1520/GTJ20230491.

Kulesza, S., Parsons, R., and Han, J. (*2024*) "What are the most important items to inspect on an MSE Wall? A summary from 30 experts." *Transportation Research Record*, 2678(9), 886-895. https://doi.org/10.1177/03611981241230521.

Wu, X[*], Motaharitabari, S. [*], Hossain, M., **Kulesza, S.**, Velasquez, N. (2024). "Concrete pavement design analysis using AASHTOWARE PMED Software." *Transportation Research Record*, 2678(10), 315-324. https://doi.org/10.1177/03611981241233279.

Kulesza, S., Mathis, M.A. II[*], Alarcon, V., and Sassenrath, G. (2024) "Critical shear stress variability in claypan soils with depth." *Journal of Soil and Water Conservation*, 79(2), 66-77. https://doi.org/10.2489/jswc.2024.00099.

Kaminski, J.[*], Gambarian, B., **Kulesza, S.**, Iversen, B., Patrignani, A. (2023) "Estimating scale dependence of saturated hydraulic conductivity in soils." *Geoderma*, 436, 116532. https://doi.org/10.1016/j.geoderma.2023.116532.

Planned Publication Break *2020-2022*

- Samantha Kulesza, born May 2020
- Started new research program, August 2021
- Cooper Kulesza, born March 2022

Koehn, W. [*], **Tucker-Kulesza, S**., and Steward, D. (2020) "Characterizing riverbed heterogeneity across shifts in river discharge through temporal changes in electrical resistivity." *Journal of Environmental and Engineering Geophysics*, 25, 581-587. doi.org/10.32389/JEEG20-049.

Tavakol, M.[*], **Kulesza, S**., Jones, C., and Hossain, M. (2020). "Effect of low-quality aggregate on stabilized clay properties." *ASCE Journal of Materials in Civil Engineering*, 32(8), 04020196. doi.org/10.1061/(ASCE)MT.1943-5533.0003263

Wooten, R. L., **Kulesza, S**., El Mohtar, C., Diaz, B., Ilupeju, O., Rasulo, M., Bassal, P., Hussien, A., Kouchaki, B. M., Little, M. V., Mert, A. A., Nelsen, C. W. (2020). "Geotechnical effects of Hurricane Harvey in the Houston, Beaumont, and Port Arthur areas.", *International Journal of Geoengineering Case Histories*, 5(4), 77-105. doi.org/10.4417/IJGCH-05-04-05

Tran, T.[*], Karim, M.Z.[*], Kuili, S.[*], **Tucker-Kulesza, S.**, and Derby, M. (2020). "Temperature effects on cohesive geomaterial erodibility." *ASCE Journal of Materials in Civil Engineering*, 32(2), 06019017. doi.org/10.1061/(ASCE)MT.1943-5533.0003046

Parsons, R.L., Brady, Z. [*], Walkenbach, T. [*], Han, J., **Kulesza, S.**, Brennan, J. (2020). "Resistivity measurement of backfill for mechanically stabilized earth walls." *ASCE Journal of Materials in Civil Engineering*, 32(3), 04019367. doi.org/10.1061/%28ASCE%29MT.1943-5533.0003013

[**] Graduate student, [**]Undergraduate student

Koehn, W.[*], **Tucker-Kulesza, S**., and Steward, D. (2019) "Conceptualizing groundwater surface-water interactions within the Ogallala Aquifer with electrical resistivity." *Journal of Environmental and Engineering Geophysics*, 24(2), 85-199. doi.org/10.2113/JEEG24.2.185

Karim, M.Z.[*], **Tucker-Kulesza, S.**, and Bernhardt-Barry, M. (2019). "Electrical resistivity as a binary classifier for bridge scour evaluation." *Transportation Geotechnics*, 19, 146-157. https://doi.org/10.1016/j.trgeo.2019.03.002

Tucker-Kulesza, S., Rutherford, C., Bernhardt-Barry, M. (2019). "Electrical resistivity to detect internal erosion in levees." *International Journal of Geoengineering Case Histories*, 5(2), 55-69. doi.org/10.4417/IJGCH-05-02-01

Karim, M.Z.[*] and **Tucker-Kulesza, S**. (2018). "Predicting soil erodibility using electrical resistivity tomography," *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, 144(4), 04018012. doi.org/10.1061/(ASCE).GT.1943-5606.0001857

Wang, X.[*], Tao, J., Bao, R., Tran, T.[*], and **Tucker-Kulesza, S**. (2018). "Surficial soil stabilization against water-induced erosion using polymer-modified microbially-induced carbonate precipitation", *ASCE Journal of Materials in Civil Engineering*, 30(10), 04018267. doi.org/10.1061/(ASCE)MT.1943-5533.0002490

Fitzsimmons, E.J., **Tucker-Kulesza, S.**, and Shofstall, L.[*] (2018). "Case study of Class III (short line) system inventory to determine 286,000 lb (129,844 kg) railcar operational status in Kansas, USA. *Journal of Rail Transport Planning & Management*, 8, 158-166. doi.org/10.1016/j.jrtpm.2018.05.001

Tran, T.[*], **Tucker-Kulesza, S.**, and Bernhardt-Barry, M. (2017). "Determining surface roughness in erosion testing using digital photogrammetry." *ASTM Geotechnical Testing Journal, 46*(6), 1-12. doi.org/10.1520/GTJ20160277

Tucker-Kulesza, S., Sassenrath, G., Tran, T.[*], Koehn, W.[*], and Erickson, L.[**] (2017). "Site-specific erodibility in claypan soils: Dependence on subsoil characteristics," *Applied Engineering in Agriculture*, 33(5), 705-718. doi.org/10.13031/aea.12120

Snapp, M.[*], **Tucker-Kulesza**, **S.,** and Koehn, W.[*] (2017). "Electrical resistivity imaging of mechanically stabilized earth wall backfill." *Journal of Applied Geophysics,* 141, 98-106. doi.org/10.1016/j.jappgeo.2017.04.011

Tucker, S., Briaud, J.-L., Hurlebaus, S., Everett, M., and Arjwech, R. (2015). "Electrical resistivity and induced polarization imaging for unknown bridge foundations," *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, 141(5), 04015008. doi.org/10.1061/(ASCE)GT.1943-5606.0001268

Raef, A., Gad, S.[*], and **Tucker-Kulesza, S.** (2015). "Multichannel analysis of surface waves and integration of downhole acoustic televiewer imaging, ultrasonic Vs and Vp, and vertical seismic profiling in an NEHRP-standard classification, south of Concordia, Kansas, USA," *Journal of Applied Geophysics*, 121, 149-161. doi.org/10.1016/j.jappgeo.2015.08.005

[**] Graduate student, [**]Undergraduate student

Arjwech, R., Everett, M. E., Briaud, J.-L., Hurlebaus, S., Medina-Cetina, Z., **Tucker, S.**, and Yousefpour, N. (2013). "Electrical resistivity imaging of unknown bridge foundations," *Near Surface Geophysics*, 11(6), 591-598. doi.org/10.3997/1873-0604.2013023

Evans, R., Liang, J., Pajouh, M., and **Kulesza, S.** "Learning from the pre-college experiences of undergraduate women thriving on engineering project teams." In review at *Journal of Women and Minorities in Science and Engineering*. Addressed minor comments and resubmitted March 2026.

Espinoza, W., Halverson, K., and **Kulesza, S.** "From rock-like to raveling: A simple framework for shale erodibility and freeze-thaw degradation." In review at *Journal of Rock Mechanics and Geotechnical Engineering*. May 2026.

Castillo, R.[*], Akter, S. [*], Faroughi, S., Rhode-Barbarigos, L., and **Kulesza, S**. "Hexagonal, hollow and perforated concrete units as a green-grey scour solution." In review at *ASCE Journal of Geotechnical and Geoenvironmental Engineering*. Addressed minor comments and resubmitted August 2026.

Alshallaqi, H.[*], Parks, E.[*], Story, B., Barry, M., and **Kulesza, S.** "Full-scale experimental and analytical characterization of track modulus under ballast fouling and moisture conditions." In review at Transportation Research Board 2027 for *Transportation Research Record*. August 2026.

Peer-Reviewed Conference Proceedings

Gombac, A.[*], **Kulesza, S.**, Figlus, J. (2026). Imaging suspended sediment concentration in ship channels with marine electrical resistivity. *Proceedings of Geo-Congress 2026*, Salt Lake City, UT. https://doi.org/10.1061/9780784486740.031

Abid, M. S., and **Kulesza, S.** (2025). Evaluation of soil-water retention characteristics of fouled ballast using axis translation technique. *Proceedings of Geotechnical Frontiers 2025*, Knoxville, TN. https://doi.org/10.1061/9780784486016.061

Castillo, R.[*], **Kulesza, S.**, and Rhode-Barbarigos, L. (2025). Experimental Investigation for a Novel Bio-Inspired Scour Countermeasure. *Proceedings of Geotechnical Frontiers 2025*, Knoxville, TN. https://doi.org/10.1061/9780784485996.044

Kulesza, S., Parsons, R., Han, J. (2024). "Geotechnical Asset Management Inspection for Mechanically Stabilized Earth Walls." *Proceedings of Geo-Congress 2024*, Vancouver, BC. doi.org/10.1061/9780784485316.070

Parr, K.[*] and Kulesza, S. (2024). "Experimental Design for Complex Resistivity Measurements on Unsaturated Soils: Application for Fouled Ballast." *Proceedings of Geo-Congress 2024*, Vancouver, BC. doi.org/10.1061/9780784485354

Liang, G., Evans, R., Asadollahipajouh, M., and **Kulesza, S.** (2023). "A Qualitative Study of Undergraduate Women in Engineering Student Project Teams." *Proceedings of the 130th Annual ASEE Conference and Exposition*, Baltimore, MD.

[**] Graduate student, [**]Undergraduate student

Sarker, D., Radnor, W.[*], Barry, M. and **Kulesza, S.** (2023). "Evaluation of soil water retention curve models for fouled ballast." *Proceedings of Geo-Congress 2023*, Los Angeles, CA. doi.org/10.1061/9780784484708.062

Redmond, K.[**], Panther, G., Asadollahipajouh, M., Evans, R., **Kulesza, S.** and Liang, G. (2022). "We are thriving: Increasing the Number of Women in Engineering." *Proceedings of the 129th Annual ASEE Conference and Exposition*, Minneapolis, MN.

Clayton, P., Casteneda, D., Paloma, M., Rodak, C., **Kulesza, S.**, and Omur-Ozbek, P. (2022). ASCE's Response to the Pandemic: A Virtual ExCEEd Community Exchange." *Proceedings of the 129th Annual ASEE Conference and Exposition*, Minneapolis, MN.

Feng, R., Radnor, W.[*], Barry, M., and **Kulesza, S.** (2022). "Investigation of sand fouling and moisture on ballast behavior." *Proceedings of Geo-Congress 2022*, Charlotte, North Carolina, 103-112. doi.org/ 10.1061/9780784484036.011

Evans, R., Liang, J., Asadollahipajouh, M. and **Kulesza, S**. (2021). "Nevertheless, she persisted:" Women thrive when they experience the joy of doing engineering. *Research in Engineering Education Symposium*. Perth, AUS. December 2021.

Evans, R., Liang, J., Asadollahipajouh, M., and **Kulesza, S**. (2021). "Women thriving in engineering: An innovative approach to listening to and learning from women who flourish in undergraduate engineering project teams." *Frontiers in Education (FIE)* Lincoln, NE. October 2021.

Kulesza, S., Ghose Hajra, M., Mathis, M.[*], and Roberts, B. (2021). "Effects of Organic Matter and Salinity on Fine-Grained Sediment Erosion." *Proceedings of the 10th International Conference on Scour and Erosion*. October 2021.

Koehn, W.[*] and **Kulesza, S.** (2021). "Electrical resistivity for seeing deep foundations: A new framework for identifying long, slender elements." *IFCEE 2021*, 443-452. https://doi.org/10.1061/9780784483404.040

Sherwood, R.[*], **Kulesza**, S., and Bernhardt-Barry, M. (2020). "Unsaturated characteristics of fouled ballast to support in situ identification of fouling." *Proceedings of Geo-Congress 2020*, GSP 319, Minneapolis, MN, 320-329. doi.org/10.1061/9780784482827.036

Karim, M.[*] and **Kulesza**, S. (2020). "Soil properties affecting the onset of erosion in cohesive soils." *Proceedings of Geo-Congress 2020*, GSP 315, Minneapolis, MN, 737-747. doi.org/10.1061/9780784482780.073

Kulesza, S., Sherwood, R.[*], and Barry, M. (2019). "Estimation of soil-water characteristic curves in fouled ballast." *Proceedings of Geo-Structural Aspects of Pavements, Railways, and Airfields*, Colorado Springs, CO.

Hood, J.C.[*], **Kulesza, S.**, Liang, J.G., Fitzsimmons, E., and Zacharakis, J. (2019). "Social responsibility and veteran student retention in engineering." *Proceedings of the 126th Annual ASEE Conference and Exposition*, Tampa, FL. *Awarded Best Paper in Military and Veterans Division.*

[**] Graduate student, [**]Undergraduate student

Kulesza, S., Liang, J.G., Fitzsimmons, E., Zacharakis, J., and Hood, J.C.[*] (2019). "Board 84: Associations between veteran and non-veteran student perceptions of social responsibility." *Proceedings of the 126th Annual ASEE Conference and Exposition*, Tampa, FL.

Liang, J.G., Evans, R. and **Kulesza, S**. (2019). "We are thriving! Undergraduate women in engineering student project teams. *Proceedings of the 126th Annual ASEE Conference and Exposition*, Tampa, FL.

Karim, M.[*], **Tucker-Kulesza, S**., Rutherford, C., Bernhardt-Barry, M. (2019). "Geophysical engineering to identify seepage channels in the Hager Slough Levee." *Proceedings of the 8th International Conference on Case Histories in Geotechnical Engineering*, GSP 311, Philadelphia, PA, 345-353. doi.org/ 10.1061/9780784482131.035

Koehn, W.[*], **Tucker-Kulesza, S**., Lebow, V., Rahimi, S.[*], Bernhardt, M., and Wood, C. (2019). "Enhanced analysis of landslide failure mechanism in the Ozark Plateau Region with electrical resistivity tomography." *Proceedings of the 8th International Conference on Case Histories in Geotechnical Engineering*, GSP 311, Philadelphia, PA, 197-203. doi.org/10.1061/ 9780784482131.021

Mathis, M.[*], Tran, T.[*], **Tucker-Kulesza, S**., and Sassenrath, G. (2019). Erosion Mechanisms in claypan soils." Proceedings of the 8th International Conference on Case Histories in Geotechnical Engineering, GSP 313, Philadelphia, PA, 76-85. doi.org/10.1061/ 9780784482155.008

Tavakol, M. [*], Hossain, M., and **Tucker-Kulesza, S.** (2019). "Subgrade soil stabilization using low-quality recycled concrete aggregate." *Proceedings of the 8th International Conference on Case Histories in Geotechnical Engineering*, GSP 301, Philadelphia, PA, 235-244. doi.org/10.1061/9780784482124.025

Tran, T. [*], **Tucker-Kulesza, S.**, and Bernhardt-Barry, M. (2018). "Soil surface roughness and turbidity measurements in erosion testing." *Proceedings of ASCE IFCEE 2018,* Orlando, FL, 506-515. doi.org/10.1061/9780784481585.049.

Karim, M.Z.[*], **Tucker-Kulesza, S.**, and Derby, M.M. (2018). "Synthesizing hydrophobic sand and comparison of shear strength properties with hydrophilic sand." *Proceedings of ASCE IFCEE 2018,* Orlando, Fl, 75-83. doi.org/10.1061/9780784481585.008

Tucker-Kulesza, S., Liang, G., Fitzsimmons, E., and Zacharakis, J. (2018). "Work in Progress: Investigating the role of social responsibility on veteran student retention." *Proceedings of the 125th ASEE Annual Conference and Exposition*, Salt Lake City, UT.

Karim, M.Z. [*]and **Tucker-Kulesza, S.** (2017). "Two-dimensional soil erosion profile using electrical resistivity surveys." *Proceedings of ASCE Geotechnical Frontiers 2017,* Orlando, Fl, *GSP 279*, 50-58. doi.org/10.1061/9780784480465.006.

[**] Graduate student, [**]Undergraduate student

[**] Graduate student, [**]Undergraduate student

Brady, Z.*, Parsons, R.L., Han, J., **Kulesza, S.**, and Brennan, J. (2017). "Resistivity measurement of backfill for mechanically stabilized earth walls." *Proceedings of ASCE Geotechnical Frontiers 2017,* Orlando, Fl, *GSP 277,* 94-102. doi.org/10.1061/9780784480441.011.

Fitzsimmons, E. J., **Tucker-Kulesza, S. E.,** Li, X.*, Jeter, W., and Falin, J. R. (2016). "The engineering classroom is still relevant." *Proceedings of the 123rd ASEE Annual Conference & Exposition*, New Orleans, LA. doi.org/10.18260/p.26152

Tucker, S., Hurlebaus, S., Medina–Cetina, Z., Yousefpour, N., Briaud, J.L., Everett, M., and Arjwech, R. (2011). "Evaluation of induced polarization for determining unknown bridge foundations," *Proceedings of the Texas Section ASCE Conference*, College Station, TX. (*Best in session)*.

Yousefpour N., Medina-Cetina Z., Jahedkar K., Delphia J., Hurlebaus S., Everett M., **Tucker S.**, Arjwech R and Briaud J.L. (2011), "Determination of unknown foundation of bridges for scour evaluation using artificial neural networks," *Proceedings of the Geo-Frontiers Conference*, Dallas, TX.

Everett, M.E., Arjwech, R., Briaud, J.L., Hurlebaus, S., Medina–Cetina, Z., **Tucker, S.**, and Yousefpour, N. (2010), "3–D resistivity imaging of buried concrete infrastructure with application to unknown bridge foundation depth determination," *Proceedings of the American Geophysical Union*, San Francisco, CA. 2010AGUFMNS23A1443E.

Research Reports

Kulesza, S., Espinoza, W., Barman, K.*, Castillo, R.* (in press). A Study of Intermediate Geomaterials and Highly Erodible Rock. Final Report. Kansas Department of Transportation.

Kulesza, S., Koehn, W., Ghadr, S., and Alam, T.* (in press). Predicting Critical Shear Stress of Cohesive Sediments/Soils in Riverbeds. Final Report. Kansas Department of Transportation.

Barry, M., **Kulesza, S.**, Davis, B.*, Feng, R., and Abid, M.S. (in press). A Mechanistic-Phenomenological Investigation of Fouled Ballast to Support in Situ Identification of Fouling. Final Report, Federal Railroad Administration.

Akter, S.*, Castillo, R.*,Faroughi, S., Rhode-Barbarigos, L., and **Kulesza, S.** (2026). SEAHIVE Solutions to mitigate bridge scour Phase I. Final Report, CREATE UTC. https://rosap.ntl.bts.gov/view/dot/92746

Figlus, J., Lawrence, A.*, Gombac, A.*, and Kulesza, S. (2026). Quantifying Vessel Propeller Wash Impacts on Sedimentation in Shallow-Bay Ports and Waterways. Final Report, CREATE UTC. https://rosap.ntl.bts.gov/view/dot/89744

Kulesza, S., Parsons, R., Liu, H.*, and Han, J. (2025). Long Term Corrosion Monitoring in MSE Walls. Final Report Award RE 0751 / 0765. Kansas Department of Transportation. https://rosap.ntl.bts.gov/view/dot/86791

Parsons, R., **Kulesza, S.**, Radnor, W.[*], Liu, H.[*] and Han, J. (2025). Development of a Geotechnical Asset Management System. Final Report Award RE-0831-01. Kansas Department of Transportation. https://rosap.ntl.bts.gov/view/dot/86780

Tavakol, M.[*], **Kulesza, S**., and Hossain, M. (2024). Evaluation of Lower Quality Recycled Portland Cement Concrete Pavement for Paving Applications. Final Report Award RE – 0688-01, Kansas Department of Transportation.

Kulesza, S., Barry, M., Feng, R., Radnor, W. [*], Sarker, D, and Parr, K.[*] (2023). Unsaturated characteristics of fouled ballast to support in situ identification of fouling using ground penetrating radar - Phase 2. DOT/FRA/ORD-23/18. Federal Railroad Administration. https://rosap.ntl.bts.gov/view/dot/68246

National Academies of Sciences, Engineering, and Medicine. 2023. *Corrosion of Buried Steel at New and In-Service Infrastructure*. Washington, DC: The National Academies Press. doi.org/10.17226/26686

Kulesza, S., Barry, M., Sherwood, R.[*], Santos, A. (2022). Unsaturated characteristics of fouled ballast to support in situ identification of fouling using ground penetrating radar - Phase 1. No. DOT/FRA/ORD-22/09. https://rosap.ntl.bts.gov/view/dot/60621

Kulesza, S., and Karim, M.Z.[*] (2021). "Critical shear stress of cohesive soils in Kansas." Final Report Award KSU-18-5, Kansas Department of Transportation. https://trid.trb.org/view/1765870

Parsons, R.L., Han, J., and **Kulesza, S**. (2021). "Measuring corrosion conditions in mechanically stabilized earth walls." Final Report Award RE – KSU-18-5, Kansas Department of Transportation. *https://trid.trb.org/view/1875166*

Tucker-Kulesza, S., Augustine, L.[*], Parameswaran, P., and Crowder, A.[*] (2019). "Galvanized and aluminized pipe durability field review and evaluation." Final Report Award RE-0700-01, Kansas Department of Transportation. https://trid.trb.org/view/1650210

Mathis, M.[*], **Tucker-Kulesza, S**., and Sassenrath, G. (2019). "Characterization of claypan soils in Southeastern Kansas." Kansas Agricultural Experiment Station Research Reports, 5(2).

Mathis, M.[*], **Tucker-Kulesza, S**., and Sassenrath, G. (2018). "Electrical resistivity tomography of claypan soils in Southeastern Kansas." Kansas Agricultural Experiment Station Research Reports, 4(3).

Wooten, R.L., **Kulesza, S.**, Mohtar, C., Diaz, B., Illupeju, O., Rasulo, M., Bassal, P., Hussien, A., Kouchaki, B., Little, M., Mert, A., and Nelsen, C. (2017). "Geotechnical effects of Hurricane Harvey in the Houston, Beaumont, and Port Arthur Areas." GEER Report 054b.

Tucker-Kulesza, S. and Karim, M.Z.[*] (2017). "Characterizing soil erosion potential using electrical resistivity imaging." Final Report Award RE – KSU 15-4, Kansas Department of Transportation.

[**] Graduate student, [**]Undergraduate student

[**] Graduate student, [**]Undergraduate student

Fitzsimmons, E.J., **Tucker-Kulesza, S.**, and Shofstall, L.* (2017). "Class III/Shortline system inventory to determine 286,000 lb (129,844 kg) railcar operational status in Kansas." Final Report Award RE - KSU 16-5. https://trid.trb.org/view/1481083

Sassenrath, G. and **Kulesza, S**. (2017). "Measuring soil electrical conductivity to delineate zones of variability in production fields." Kansas Agricultural Experiment Station Research Reports, 3(2).

Tucker-Kulesza, S., Snapp, M.*, and Koehn, W.* (2016). "Electrical resistivity measurements of MSE wall backfill." Final Report Award RE-0657-01 KSU 15-6, Kansas Department of Transportation.

Hurlebaus, S., Briaud, J.-L., and **Tucker, S. (**2014). "Sustainability of bridge foundations using electrical resistivity imaging and induced polarization to support transportation safety." Final Report Award 600451-00028-1, Southwest Region University Transportation Center.

Briaud, J.L., Medina–Cetina, Z., Hurlebaus, S., Everett, M., **Tucker, S.**, Yousefpour, N., and Arjwech, R. (2011). "Unknown foundation determination for scour," Texas Department of Transportation Technical Report, Texas A&M University, College Station, TX.

FUNDING AS PI

US Army Corps of Engineers Engineering Research and Development Center. ($149,120), 2025-2027. "Optimal geosynthetic design for unsaturated fouled ballast on weak subgrade." PI Kulesza; Co-PI Almikati. 75% Effort.

National Academies of Sciences, FRA Rail Safety IDEA Program. ($100,000), 2025 – 2027. "Large Scale Testing for Detecting Changes in Track Modulus with Low Cost Sensors." PI: Kulesza; Co-PI Barry and Story. 50% Effort.

US Department of Transportation, University Transportation Center ($10,000,000), 2023 – 2028. "Coastal Research and Education Actions for Transportation Equity (CREATE)." PI (Center Director): Kulesza; co-PIs: F. Wang (TXST), C. Higgins (OSU), A. Puppala (TAMU), A. Nanni (U. Miami), A. Figueroa-Medina (UPRM); TXST Senior Personnel: X. Shi. 50% Effort.

Kansas Department of Transportation, K-TRAN ($65,982), 2021-2023. "A study of intermediate geomaterials and highly erodible rock." PI: Kulesza; co-PI: W. Koehn. 85% Effort.

Kansas Department of Transportation, K-TRAN ($52,536), 2021-2023. "Critical Shear Stress of Cohesive Sediments/Soils in Riverbeds." PI: Kulesza; co-PI: W. Koehn. 85% Effort.

Kansas Department of Transportation, K-TRAN ($48,349), 2021-2022. "Geotechnical Asset Management for KDOT – Joint project with KU." PI: Kulesza. 100% Effort.

Federal Railroad Administration, US-DOT ($151,220), 2020-2021. "Unsaturated characteristics of fouled ballast to support in situ identification of fouling using ground penetrating radar – Phase II." PI: Kulesza. 100% Effort.

Kansas Department of Transportation, K-TRAN ($49,374), 2020-2021. "Long term corrosion monitoring in MSE walls." PI: Kulesza. 100% Effort.

Federal Railroad Administration, US-DOT ($81,364), 2018-2020. "Unsaturated characteristics of fouled ballast to support in situ identification of fouling using ground penetrating radar – Phase I." PI: Kulesza. 100% Effort.

Kansas Department of Transportation, K-TRAN ($52,723), 2018-2019. "Measuring Corrosion conditions in MSE Walls." PI: Kulesza. 100% Effort.

National Science Foundation, EEC Division ($199,907), 2017-2019. "Research initiation: Investigating the role of social responsibility on Veteran student retention." PI: Tucker-Kulesza; co-PI: Fitzsimmons, Liang, and Zacharakis. 60% Effort.

US Department of Transportation, KDOT Implementation ($110,853), 2017-2019. "Predicting critical shear stress of fine-grained soils in Kansas." PI: Tucker-Kulesza 100% Effort.

Kansas Department of Transportation, Ad Hoc Program ($72,802), 2015-2018. "Galvanized and aluminized pipe durability field review and evaluation." PI: Tucker-Kulesza. 100% Effort.

Kansas Department of Transportation, K-TRAN ($68,000), 2014-2016. "Characterizing soil erosion potential using electrical resistivity imaging." PI: Tucker. 100% Effort.

Kansas Department of Transportation, K-TRAN ($60,000), 2014-2016. "Electrical resistivity measurement of MSE wall backfill." PI: Tucker. 100% Effort.

Phillips 66, ($104,125), 2015. "Meeting the groundwater needs of Phillips 66 Borger refinery: proof of concept." PI: Tucker; co-PI: Steward. (*funding withheld).*

University Small Research Grant, ($4,500), 2014-2015. "Research Project: Heating up – reducing thermal stress in levees." PI: Tucker; co–PI: Derby. 50% Effort.

FUNDING AS CO-PI

Federal Railroad Administration, US-DOT. ($299,574), 2022-2024. "A mechanistic-phenomenological model investigation of fouled ballast to support in situ identification of fouling." PI: Barry (Arkansas); co-PI: Kulesza. 47% Effort, $140,024 to TXST (100% to Kulesza).

Federal Railroad Administration, US-DOT. ($403,579) 2022-2025. "Enhancing railroad workforce training through equitable smart infrastructure experiences." PI: Story (SMU); co-PI: Kulesza. 39% Effort, $156,432 to TXST. (100% to Kulesza).

Federal Railroad Administration, US-DOT. ($3,947,110), 2020-2023. "Rural Railroad Safety Center." PI: Fitzsimmons; co-PI: Jones, Kulesza, Peterman. 25% Effort.

National Science Foundation, EEC Division ($211,254), 2020-2023. "COLLABORATIVE RESEARCH: We are thriving: Challenging negative

discourse through voices of women in project teams." PI: Liang; co-PI: Kulesza. 50% Effort.

National Science Foundation, CBET Division ($300,000), 2019-2021. "EAGER SitS: Sustainable biosensor integration for precision management of agricultural soils." PI: Welch; co-PI: Tucker-Kulesza, Parameswaran, Hansen, Hettiarchchi. 31% Effort.

National Science Foundation, EPSCoR Research Infrastructure Improvement Program ($3,982,202), 2018. "RII Track-2 FEC: Building field based ecophysiological genome-to-phenome prediction." PI: Welch; co-PIs: Asebedo, Flippo, Duke, Alvarez Santos, SV, Hettiarchchi, Fritz, Poland, Albin, Bellow, Dunn, Tucker-Kulesza. 2% Effort.

Kansas Department of Transportation, K-TRAN ($104,448), 2018-2020. "Implementation AASHTOWare Pavement ME Design Software for KDOT. PI: Hossain; co-PI: Tucker-Kulesza. 40% Effort.

Kansas Water Resources Institute ($89,877, $59,959 required match), 2018-2020. "Evaluation of the geomorphological adjustments of a meandering, alluvial river subject to streambank stabilization structures." PI: Moore; co-PI: Keane, Tucker-Kulesza, and Bigham. 10% Effort.

National Science Foundation, CBET Division ($114,084), 2017-2019. "Erodibility of claypan soils: Identifying erosion mechanisms for sustainable reduction of sediment loss." PI: Sassenrath; co-PI: Tucker-Kulesza and Hallaq. 81% Effort.

US Department of Agriculture, Conservation Innovation Grants Program ($49,990), 2017-2018. "Improving soil health & profitability with cover crops and precision conservation." PI: Sassenrath; co-PI: Tucker-Kulesza. 40% Effort.

OAP2016 US Department of Agriculture *(*$990,221, $75,265 to Civil Engineering*)*, 2016 – 2020. "Extending the useable lifetime of the Ogallala Aquifer by filling it through riverbeds." PI: Steward; co-PI: Tucker-Kulesza and Welch. 40% Effort. *Project update 2018-2020 PI: Tucker-Kulesza, 100% Effort.

KSU Academic Excellence Grant, ($5,000), 2016. "Soil Health Impact on Society." PI: Sassenrath; co-PI: Tucker-Kulesza, Hallaq, and Lin. 20% Effort.

Kansas Department of Transportation, K-TRAN ($50,000), 2015-2016. "Class III/Shortline system inventory to determine 129,844 kg (286,000 lb.) railcar operational status in Kansas." PI: Fitzsimmons; co-PI: Tucker-Kulesza. 50% Effort.

Southwest Region Transportation Center. ($30,000), 2012. "Sustainability of Bridge Foundations Using Electrical Resistivity Imaging and Induced Polarization to Support Transportation Safety." PI: Hurlebaus; co–PIs: Briaud, Tucker. 80% Effort.

PROFESSIONAL ACIVITIES AND SERVICE

Research Advising

- Current M.S. thesis advisor: T. Laramore, P. Amatya, J. Fowler
- Current Ph.D. dissertation advisor: A. Gombac
- Ph.D. dissertation advisor (graduated): W. Koehn (5/20), M.Z. Karim (12/19), M. Tavakol (5/19), T. Tran (12/18)
- M.S. thesis advisor (graduated): E. Parks (5/26), S. Akter (5/25), R. Castillo (5/25), A. Gonzalez (12/24), D. Price (12/24), K Parr (8/23), M.T. Alam (8/23), W. Radnor (12/22), S. Kaminski (12/22), S. Haroon (8/22), W. Lu (5/22), R. Sherwood (8/20), M. Mathis (5/20), L. Augustine (12/19), A. Crowder (5/18), L. Shofstall (5/17), M.Z. Karim (8/16), A. Al-Ali (5/16), M. Snapp (8/15)
- M.S. non-thesis advisor: H. Hrubes (5/21), J. Kankovsky (8/16), J. Franz (5/20), B. Gardels (12/19), T. Spade (12/17), G. Thome (5/20)
- Undergraduate research advisor: A. Ebrahimi (Women in Engineering Research), C. Ridlen (Women in Engineering Research), S. Bahsoon, J. Fowler, M. Ferguson (Women in Engineering Research), V. Krylova (Women in Engineering Research), J. Del Bosque, C. Grumbles, T. Laramore (Women in Engineering Research, Veteran), L. Totino, W. Radnor (Veteran), J. Smith, S. Cleve (Women in Engineering Research, Veteran), N. Hittle, R. Sherwood, L. Augustine, Z. Hughes, T. Collins (Women in Engineering Research), L. Erickson (Women in Engineering Research), S. Valenzuela, J. Palma, S. Stevenson (Women in Engineering Research)

Service Activities

- TRB Committee on Rail and Track Design & Maintenance member *2026-present*
- ASCE 2027 Planning Committee 2025-*present*
- ASCE Geo-Institute *Hour of Scour* Host 2025-*present*
- TXST Presidential Run-2-R1 Committee 2023-*present*
- Associate Editor, *Advances in Civil Engineering Materials* 2020 - *present*
- ASCE Geo-Institute Geotechnics of Soil Erosion committee member 2017-*present*
- ASCE Geo-Institute Outreach and Engagement committee *2015-present*
- Geo-Strata “New Faces in Geotechnical Engineering” Articles Lead 2024-*present*
- TXST TT Faculty Search Committee Chair 2025, 2026
- TXST Prof of Practice Search Committee Chair 2022, 2023
- TXST Prof of Instruction Faculty Search Committee Chair 2022, 2023
- TXST TT Faculty Search Committee Member 2023, 2025, 2026
- TXST Prof Practice Faculty Search Committee Member 2022
- NAE Ad Hoc Committee on Corrosion of Buried Steel 2020-2022
- TXST ASCE Student Chapter Co-Advisor 2021-2022
- TXST Undergraduate student career advisor *2022-present*
- 2021 ASCE Geo-Institute / IFCEE Planning Committee 2019-*2021*
- 2019 ASCE Geo-Institute Geo-Congress Planning Committee 2017-2019
- 2017 Hurricane Harvey NSF GEER team Houston 2017
- ASCE Geo-Institute Outreach and Engagement committee, Chair *2019-2023*
- TRB Committee on Transportation Earthworks younger member *2014-2025*
- TRB Committee on Corrosion younger member *2016-2020*

- KSU Civil Engineering Graduate Program Director *2018-2021*
- KSU Undergraduate student academic advisor *2014-2021*
- Advisor for KSU ASCE Geo-Institute Chapter *2013–2021*
- Advisor for KSU Women in Civil Engineering *2017–2021*
- Volunteer KSU KAWSE Spring *GROW* event *2014-2021*
- Kansas Geotechnical Conference committee member *2014-2021*
- Kansas State University Faculty Senator *2018-2021*

Peer Reviewer

- National Science Foundation: Civil, Mechanical and Manufacturing Innovation Division and Division of Earth Sciences
- *ASCE Journal of Geotechnical and Geoenvironmental Engineering*
- *ASCE Journal of Materials in Civil Engineering*
- *ASTM Geotechnical Testing Journal*
- *ASTM Journal of Testing and Evaluation*
- *Geophysical Journal International*
- *Journal of Environmental and Engineering Geophysics*
- *Computers and Geotechnics*
- *Construction and Building Materials*
- ASCE Annual Geo-Congress Conference
- *Transportation Research Record*
- Transportation and Development Institute Congress

Professional Membership

American Society of Civil Engineers, ASCE Geo-Institute, Transportation Research Board, United States Universities Council on Geotechnical Education and Research, American Society for Engineering Education, Deep Foundations Institute, Kansas Society of Professional Engineers

TEACHING EXPERIENCE

Courses Taught

CE 4330 – Earth Retaining Structures	Fall 2022 - 2026
CE 3331 – Infrastructure Foundations (co-teach)	Spring 2022
CE 3330 – Soil Mechanics	Fall 2021, Spring 2023
CE 5330/7330 – Advanced Soil Mechanics	Spring 2024, Spring 2026
CE 5334/7334 – Advanced Foundation Design	Spring 2025
ENGR 5332 – Earth Retaining Structures and Slopes	Fall 2022
CE 5390 – Infrastructure Systems Analysis (co-teach)	Spring 2022, Spring 2023
CE 5391 – Advanced Mechanics of Materials	Fall 2021
CE 522 – Soil Mechanics I	*2013-2020*
CE 528 – Foundation Engineering	*Fall 2017*
CE 625 – Principles of Geoenvironmental (co-teach)	Spring 2018, Fall 2019
CE 728 – Advanced Geotechnical Design	*Spring 2014-2020*
CE 816-I – Deep Foundation Design	*Fall 2016, 2018, Spring 2021*
CE 816-F – Advanced Testing of Geosystems	*Fall 2014, 2015, Spring 2019*
CVEN 305 – Mechanics of Materials	*Fall 2012*

AWARDS

Presidential Award for Excellence in Scholarly Activities (TXST)	2024
Geo-Strata New Faces in Geotechnical Engineering	2024
Transportation Research News - Transportation Influencer	2023
James L. Hollis Award for Excellence in Undergraduate Teaching	2021
Carl R. Ice College of Engineering Dean's Award for Teaching Excellence	2019
Darold and Debbie Davis Cornerstone Faculty Scholar	2019-2022
Steve Hsu Keystone Faculty Scholar	2018-2019
KSU College of Engineering Outstanding Assistant Professor Award	2018
ASCE Section 7 Outstanding Engineer Volunteer	2018
KSPE Tri-Valley Chapter Young Engineer of the Year	2018
KSU Multicultural Engineering Program Faculty Engagement Award	2018
KSU Chi Epsilon Outstanding Teaching Award	2018
KSU Civil Engineering Outstanding Colleague Award	*2015*
KSU Civil Engineering Outstanding Teaching Award	2015
KSU Chi Epsilon Advisor of the Year	2015
Zachry Distinguished Graduate Fellowship	*2011–2013*