Kaleigh M. Yost, Ph.D., P.E.

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EDUCATION

Ph.D., Civil Engineering (Geotechnical), Virginia Tech, Blacksburg, Virginia, 2022
Dissertation Title: *Improving CPT-based Earthquake Liquefaction Hazard Assessment at Challenging Soil Sites* (Advisors: Dr. Russell Green and Dr. Alba Yerro)

M.S., Civil Engineering (Geotechnical), University of Texas, Austin, Texas, 2017
Thesis Title: *Investigation of False-Positive Liquefaction Case History Sites in Christchurch, New Zealand* (Advisor: Dr. Brady Cox)

B.S., Civil Engineering (Structural), University of Notre Dame, Notre Dame, Indiana, 2015

PROFESSIONAL HISTORY

Assistant Professor, Department of Civil and Environmental Engineering, Pennsylvania State University, University Park, PA (June 2026 - present)

L. Robert and Mary L. Kimball Early Career Assistant Professor, Department of Civil and Environmental Engineering, Pennsylvania State University, University Park, PA (January 2023 - June 2026)

Staff Engineer, Langan Engineering and Environmental Services, Arlington, VA (June 2017 - December 2018)

AWARDS AND HONORS

Harry West Teaching Award for the Advancement of Civil Engineering Education, 2026
Penn State Social Science Research Institute (SSRI) Early Career Fellow, 2026
New Faces in Geotechnical Engineering, Geostrata Magazine, 2025
University of Notre Dame Domer Dozen Awardee, awarded to outstanding young alumni for significant contributions and extraordinary dedication to learning, service, faith, and work, 2025
Elected Board Member, U.S. Universities Council on Geotechnical Education and Research, 2025
Earthquake Engineering Research Institute (EERI) Younger Member Award, 2025
Kimball Early Career Assistant Professorship, Pennsylvania State University, 2023
Institute of International Education Graduate International Research Experience (IIE-GIRE), 2020
American Society of Civil Engineers (ASCE), Richmond Branch Civil Engineering Scholarship, 2020
Virginia Space Grant Consortium Fellowship (2nd award), 2020
Virginia Space Grant Consortium Fellowship, 2019
Charles Via Ph.D. Fellowship, Virginia Tech, 2019
New Horizon Graduate Fellowship, Virginia Tech, 2019
Rita T. and J. Crozier Brown Endowed Graduate Fellowship, University of Texas, 2015
Reverend Thomas A. Steiner Award, University of Notre Dame, awarded for all-around excellence as a graduating senior in the College of Engineering, 2015
American Society of Civil Engineers (ASCE) Activity Award, Indiana Chapter, for meritorious performance and demonstrated potential in civil engineering at Notre Dame, 2015

SPONSORED RESEARCH

PIs	Project Title	Source	Amount	Dates
Yost, K.	Modeling System Response of Partially Saturated Soil Deposits Subjected to Earthquake Shaking	Institute for Computational and Data Sciences, Pennsylvania State University	$24,624	01/27-05/27
Mejia, A., Kirchoff, C., **Yost, K.**	CIVIC-PG Track A: Accelerating Coproduced Flood Resilience in Underserved Levee Communities	National Science Foundation	$74,996	10/24-03/24
Yost, K., Zhu, T.	Geotechnical Data Fusion for Improving AI Subsurface Predictions	CIAMTIS U.S. DOT Region 3 University Transportation Center	$124,053 (including $62,027 matching funds)	07/24-07/25
Yost, K., Stempel, P., Raj, C.	Visualizing Inland Flood Hazard in the Face of Climate Change	Institute of Energy and the Environment, Pennsylvania State University	$40,000	07/24-06/25
Mejia, A., Raj, C., Brent, D., **Yost, K.**	CLIMA: Climate-resilient infrastructure adaptations for maladaptive levee networks	National Science Foundation	$757,974	09/23-08/27
Yost, K. Stolte, A. Mejia, A. Orense, R.	Towards Linking Hydro-Climatic Change and Earthquake Hazard	Seed Grant, Pennsylvania State University and University of Auckland	$25,048 ($13,000 USD + $25,000 NZD)	06/23 - 12/24

PUBLICATIONS

[+]indicates current/former student supervised by K.M. Yost

Refereed Journal Publications

1. Ghimire, A.[+], **Yost, K.M.**, Stolte, A. (2026). "A Review of Partial Saturation in Liquefaction Assessment: Theory, Laboratory Studies, and Field Case Histories." *Natural Hazards* 122, 706. DOI: 10.1007/s11069-026-08471-5
2. Duhon, E.[+], **Yost, K.M.**, Kirchhoff, C., Brent, D., Everett, A.[+], Bellini, J., Cibin, R., Kumar Chaudhary, A., Stempel, P., Mejia, A. (2026). "The Levee Love Affair Decades Later, Still Stormy: Confronting the Accreditation Crisis and Charting Solutions." *Journal of the American Water Resources Association* 62(5), e70156. DOI: 10.1111/1752-1688.70156

3. Ghimire, A.[+], **Yost, K.M.**, Stolte, A., Orense, R., Mejia, A. (2026). "Collocated Geotechnical and Geophysical Test Dataset at Three Sites in Napier, New Zealand." *Earthquake Spectra* 42(4), e70122. DOI: 10.1002/esp4.70122
4. Ghimire, A.[+], **Yost, K.M.**, Stolte, A., Orense, R. (2026). "Assessments of Liquefaction Triggering and Manifestation at Three Case History Sites in Napier Based on 1931 Hawke's Bay, New Zealand, Earthquake." *Earthquake Spectra*, 42(3), 1-23. DOI: 10.1002/esp4.70093
5. **Yost, K.M.,** Yerro, A., Martin, E., Green, R. (2024). "A Cone Penetration Test Database for Multiple Thin Layer Correction Procedure Development." *Earthquake Spectra,* 40(1), 803-827. DOI: 10.1177/87552930231217002
6. **Yost, K.M.**, Martinelli, M., Yerro, A., Green, R., De Lange, D. (2023). "Addressing Complexities in MPM Modeling of Calibration Chamber Cone Penetrometer Tests in Homogenous and Highly Interlayered Soils." *Computers and Geotechnics*, 158(2023), 105378. DOI: 10.1016/j.compgeo.2023.105378
7. **Yost, K.M.**, Yerro, A., Green, R.A., Martin, E., and Cooper, J. (2022). "MPM Modeling of Cone Penetrometer Testing for Multiple Thin-Layer Effects in Complex Stratigraphy." *Journal of Geotechnical and Geoenvironmental Engineering,* 148(2), 04021189. DOI: 10.1061/(ASCE)GT.1943-5606.0002730
8. Cooper, J., Martin, E.M., **Yost, K.M.**, Yerro-Colom, A., and Green, R.A. (2021). "Robust identification and characterization of thin soil layers in cone penetration data by piecewise layer optimization." *Computers and Geotechnics*, 141, 104404. DOI: 10.1016/j.compgeo.2021.104404
9. **Yost, K.M.**, Green, R.A., Upadhyaya, S., Maurer, B.W., Yerro-Colom, A., Martin, E.R., and Cooper, J. (2021). "Assessment of the efficacies of correction procedures for multiple thin layer effects on Cone Penetration Tests." *Soil Dynamics and Earthquake Engineering*, Elsevier, 144, 106677. DOI: 10.1016/j.soildyn.2021.106677

Refereed Conference Publications

1. Thum, T.S., Zhang, L., **Yost, K.**, Hryciw, R.D., and Green, R.A. (2026). "VisCPT and large-scale calibration chamber tests for thin layer identification and characterization." Proceedings, 21st International Conference on Soil Mechanics and Geotechnical Engineering (ICSMGE). Vienna, Austria. 14-19 June 2026.
2. Clavin, C., **Yost, K.M.**, Neber, H., Guo, J., and Gerber, B. (2026). "Examining the Scope of Resilience Guides and Standards from the Building to the Community Scale: An Analysis and Case Studies of Consensus-Based Resilience Standards for the Built Environment." Proceedings, ASCE Architectural Engineering Institute | Infrastructure Resilience Division 2026 Conference. San Antonio, TX. 18-20 March, 2026. DOI: 10.1061/9780784486955.0
3. Ghimire, A.[+], **Yost, K.M.**, Zhu, T., and Cutts, R. (2026). "Validating Machine Learning Based Subsurface Predictions with Geophysical and Boring Data." Proceedings, Geo-Congress 2026. Salt Lake City, UT. 9-12 March 2026. Geotechnical Special Publication 379, pp. 238-248. DOI: 10.1061/9780784486740.025
4. Kaintz, R.[+] and **Yost, K.M.** (2025). "A Study of Flood Protection Systems in the Susquehanna River Basin." Proceedings, Dam Safety 2025. Cleveland, OH. 21-25 September 2025.
5. Ghimire, A.[+], **Yost, K.M.**, Stolte, A., Mejia, A., and Orense, R. (2025). "Past, Present, and Future Liquefaction Hazard at Greenmeadows School, Napier, New Zealand." Proceedings, Geotechnical Frontiers 2025. Louisville, KY. 2-5 March 2025. Geotechnical Special Publication 366, pp. 134–144. DOI: 10.1061/9780784485996.014
6. **Yost, K.M.**, Green, R.A., Yerro, A., and Martin, E.R. (2024). "Utilizing CPT Databases to Better Inform Liquefaction Evaluations." Proceedings, 18th World Conference on Earthquake Engineering (WCEE2024). Milan, Italy. 30 June-5 July 2024.

7. **Yost, K.M.**, Cooper, J., Green, R.A., Martin, E., and Yerro, A. (2022). "Correcting Measured CPT q_c for Multiple Thin Layer Effects." Proceedings, 5th International Symposium on Cone Penetration Testing (CPT'22). Bologna, Italy. 8-10 June 2022. DOI: 10.1201/9781003308829-115
8. **Yost, K.M.**, Yerro, A., Green, R.G., and Martin, E. (2022). "Harnessing Numerical Tools to Study the Limitations of CPTs for Characterizing Complex Soil Stratigraphies for Liquefaction Assessment." Proceedings, 12th U.S. National Conference on Earthquake Engineering. Salt Lake City, Utah. 27 June-1 July 2022.
9. **Yost, K.M.,** Green, R.A., Herwitz, E., and Wotherspoon, L. (2021). "Bench-Scale Testing of Grouts for Geo-Slice Peels." Proceedings, International Foundations Congress and Equipment Exposition (IFCEE 2021). Dallas, TX. 10-14 May 2021. Geotechnical Special Publication 325, pp. 318-329. DOI: 10.1061/9780784483428.033
10. Bassal, P.C., Boulanger, R.W., Cox, B.R., **Yost, K.M**., and DeJong, J.T. (2020). "Dynamic Analyses of Liquefaction at Palinurus Road During the Canterbury Earthquake Sequence." Proceedings, United States Society on Dams Annual Conference, Denver, CO. 2020.
11. **Yost, K.M.,** Cox, B.R., Wotherspoon, L., Boulanger, R.W., van Ballegooy, S., and Cubrinovski, M. (2019). "In-situ Investigation of False-Positive Liquefaction Sites in Christchurch, New Zealand: Palinurus Road Case History." Proceedings, Geo-Congress 2019. Philadelphia, PA. 24-27 March 2019. Geotechnical Special Publication 308, pp. 436-451. DOI: 10.1061/9780784482100.044
12. Cox, B.R., **McLaughlin, K.A.**, van Ballegooy, S., Cubrinovski, M., Boulanger, R.W., and Wotherspoon, L. (2017). "In-situ Investigation of False-Positive Liquefaction Sites in Christchurch, New Zealand: St. Teresa's School Case History." Proceedings, Performance-based Design in Earthquake Geotechnical Engineering, PBD-III Vancouver. 16-19 July 2017. Vancouver, British Columbia. ISSMGE Technical Committee TC203, Paper 265.

Technical Reports

1. **Yost, K.M.**, Ghimire, A.+, Zhu, T. (2025). "Geotechnical Data Fusion for Improving AI Subsurface Predictions." CIAMTIS U.S. DOT Region 3 University Transportation Center, Larson Transportation Institute, Pennsylvania State University, September 2025.

Published Data

1. **Yost, K.**, Peng, I.+, Ghimire, A.+, Dedinsky, K., Grilliot, M., Lyda, A., Mejia, A. (2026). "Kingston and Forty Fort Levee Investigation, Luzerne County, Pennsylvania", in *Geospatial, Geotechnical, and Geophysical Characterization for Modeling Levee Performance During Susquehanna River Flood Events*. DesignSafe-CI. https://doi.org/10.17603/ds2-dh71-0s11
2. Stolte, A., Ghimire, A.+, **Yost, K.**, Orense, R., Mejia, A. (2025). "Geotechnical and Geophysical Measurements in November 2023 and June 2024 at Three Sites in Napier", in *Subsurface Testing for Evaluating Seasonal Changes in Groundwater Table and Liquefaction Hazard in Napier, New Zealand*. DesignSafe-CI. https://doi.org/10.17603/ds2-44ae-wz03
3. **Yost K.**, Yerro Colom A., Martin E., Green R. (2022). Data Associated with A CPT Database for Multiple Thin-Layer Correction Procedure Development. University Libraries, Virginia Tech. Dataset. DOI: 10.7294/21408450

Articles in Popular Press

1. **Yost, K.M.** (2026). "Pennsylvania's Aging Levees are Under Pressure from Scarce Funding and Severe Weather." *The Conversation*. https://doi.org/10.64628/AAI.3jcwjcqer

PRESENTATIONS

Conference Presentations

Presentations made by K.M. Yost or supervised student indicated with +

1. Clavin, C., **Yost, K.M.** (Panelist), Neber, H., Guo, J., and Gerber, B. "Examining the Scope of Resilience Standards from the Building to the Community Scale," ASCE Architectural Engineering Research Institute | Infrastructure Resilience Division Conference, San Antonio, TX, March 20, 2026
2. Ghimire, A.+ (Presenter), **Yost, K.M.**, Zhu, T., & Cutts, R. "Validating Machine Learning Based Subsurface Predictions with Geophysical and Boring Data," Geo-Congress 2026, Salt Lake City, UT, USA. March 10, 2026
3. **Yost, K.M.**, "Novel Geospatial, Geophysical, and Geotechnical Technologies to Characterize Pennsylvania Levees," Pennsylvania Association of State Floodplain Managers Conference, State College, PA, September 15, 2025
4. Ghimire, A.+ (Presenter), **Yost, K.M.,** Stolte, A., Orense, R., Mejia, A. "Towards Linking Hydroclimatic Change and Earthquake Hazards in Hawke's Bay, New Zealand," Penn State Water Conference 2025, State College, PA, USA. March 20, 2025
5. Ghimire, A.+ (Presenter), **Yost, K.M.,** Stolte, A., Mejia, A., & Orense, R. "Past, Present, and Future Liquefaction Hazards at Greenmeadows School, Napier, New Zealand," Geotechnical Frontiers 2025, Louisville, KY, USA. (March 3, 2025)
6. **Yost, K.M.**, Peng, Y.+ (Presenter). "Forty Fort Levee Seepage and Stability Modeling with MPM." Anura3D MPM Workshop 2025, Barcelona, Spain. January 30, 2025
7. Reja, A.+ (Presenter), Abolfazl, H.A., Mejia, A., **Yost, K.** (2025). "Rising Water, Rising Concerns: Levee Residual Risk in the Susquehanna River Basin." 105th Annual Meeting of the American Meteorological Society. New Orleans, LA. January 12, 2025 (poster)
8. **Yost, K.M.**, Mejia, A., Cibin, R., Brent, D., Kaintz, R.+, Peng, Y.+ "Leveraging Geospatial, Geophysical, and Geotechnical Technologies to Study Flood Hazard in Pennsylvania," American Geophysical Union Annual Meeting (AGU24), Washington, DC, December 11, 2024
9. **Yost, K.M.**, Lang, A., Mijic, Z. "Advancing Seismic Safety and Community Resilience in the Era of Climate Change: Public Policy and Advocacy in the Earthquake Engineering Community," American Geophysical Union Annual Meeting (AGU24), Washington, DC, December 10, 2024 (poster presentation)
10. **Yost, K.M.** "Understanding Hydroclimatic Effects on Liquefaction Hazard in Hawke's Bay, New Zealand: Greenmeadows School Case History," 2024 Earthquake Engineering Research Institute Annual Meeting, Seattle, WA, April 11, 2024 (invited)
11. **Yost, K.M.,** Ghimire, A.+, Stolte, A., Mejia, A., Orense, R. "Towards Linking Hydroclimatic Change and Earthquake Hazards in Hawke's Bay, New Zealand," 2024 Earthquake Engineering Research Institute Annual Meeting, Seattle, WA, April 11, 2024 (poster presentation)
12. **Yost, K.M.**, Yerro, A., Martinelli, M., Green, R., Martin, E. "MPM Modeling to Overcome Limitations of Cone Penetration Testing in Complex Stratigraphy," 14th Annual MPM Workshop, Orono, ME, September 15, 2023 (virtual)
13. **Yost, K.M.** "Earthquake Hazard is Climate Hazard," 2023 Natural Hazards Workshop, Broomfield, CO, July 10, 2023 (poster presentation)
14. **Yost, K.M.**, Yerro, A., Martinelli, M., Green, R., Martin, E. "Challenges and Innovations in Numerical Modeling of CPTs in Interlayered Soils," 2023 Anura3D Workshop, June 30, 2023 (virtual)
15. **Yost, K.M.**, Yerro, A., Green, R.G., and Martin, E. "Harnessing Numerical Tools to Study the Limitations of CPTs for Characterizing Complex Soil Stratigraphies for Liquefaction

Assessment," 12th International Conference on Earthquake Engineering (12NCEE), Salt Lake City, UT, June 27, 2022

16. **Yost, K.M.,** Green, R.A., Herwitz, E., and Wotherspoon, L. "Bench-Scale Testing of Grouts for Geo-Slice Peels." International Foundations Congress and Equipment Exposition," International Foundations Congress and Equipment Exposition (IFCEE 2021), May 10, 2021 (virtual poster presentation)
17. **Yost, K.M.,** Cox, B.R., Wotherspoon, L., Boulanger, R.W., van Ballegooy, S., and Cubrinovski, M. "In-Situ Investigation of False-Positive Liquefaction Sites in Christchurch, New Zealand: Palinurus Road Case History," GeoCongress, Philadelphia, PA, March 24, 2019

Invited Seminars

1. "Improving Liquefaction Modeling for Partially Saturated Soils Under Fluctuating Groundwater Conditions," Transcending Natural Hazards Forecasting (TRAIN) Center Initiative Hybrid Seminar, Penn State University, September 18, 2026
2. "Transforming Levee Evaluation through Community-Based Research and Techno-Engineering Innovations," Pennsylvania Department of Environmental Protection Flood Protection Sponsor Workshop, State College, PA, May 19, 2026 (co-presented with A. Mejia)
3. "Levee Digital Twins: Navigating Multi-Modal Data Integration for Distributed Infrastructure," Convergence Workshop on Digital Twins, Penn State Institute for Computational and Data Sciences, March 3, 2026
4. "Building Flood Resilience in the Susquehanna River Basin," Flood Risk in the Mid-Atlantic - Goddard Forum, Harrisburg, PA, September 10, 2025
5. "Rising Waters: Understanding Evolving Flood Risk in Pennsylvania," Millennium Cafe, Penn State University, April 1, 2025
6. "Kaleigh Yost - Geotechnical Engineer; Hazards Researcher," Meet the Mentors Event, Penn State University Climate Science REU Program, July 16, 2024
7. "Past, Present, and Future Liquefaction Hazard in Hawke's Bay, New Zealand," University of Maine, Orono, ME, March 8, 2024
8. **"**Numerical modeling to understand limitations of CPT-based liquefaction hazard assessment," ASCE Geo-Institute Web Conference, December 6, 2023 (virtual)
9. "Geotechnical Engineering: An Overview," Penn State University, CE 100S, Topics and Contemporary Issues in Civil and Environmental Engineering: First-Year Seminar, November 1, 2023
10. "Improving Earthquake-Induced Liquefaction Hazard Assessment for Complex Geologies in a Changing Hazard Landscape," Penn State University, EDSGN 590 Colloquium, October 30, 2023
11. "Improving Earthquake-Induced Liquefaction Hazard Assessment for Complex Geologies," presented at Colorado School of Mines, Golden, CO, July 12, 2022
12. "Characterizing Complicated Soil Profiles: Using Numerical Methods to Better Understand Cone Penetrometer Test Data," presented at ASCE Richmond Branch Technical Meeting, February 2021 (virtual)

COURSES TAUGHT

- Geotechnical Subsurface Characterization (CE 597, graduate, Penn State)
- Foundation Engineering (CE 435, undergraduate/graduate, Penn State)
- Engineering Mechanics of Soils (CE 335, undergraduate, Penn State)
- Civil Engineering Materials Lab (CE 337, undergraduate, Penn State)
- Introduction to Geotechnical Engineering (CEE 3514, undergraduate, Virginia Tech)

STUDENT ADVISEES

PhD Dissertation Advisor *(4 in progress)*

- Tisha Sikder, "Liquefaction in Complex, Partially Saturated Soils." (August 2026 - Present).
- Erin Duhon, "Uncertainty-informed Levee Decision Making." (January 2026 - Present). (co-advised with Dr. Alfonso Mejia). Passed Qualifying Exam in 05/2026.
- Yipin (Irene) Peng, "Transient Analysis and Dynamic Risk Assessment of Aging Levees Under Time-Dependent Hydraulic Loading." (August 2024 - Present). Passed Comprehensive Exam in 08/2026.
- Aavash Ghimire, "Characterizing Liquefaction Hazard at Complex Soil Sites with Partially Saturated Soils in the Face of Climate Change." (August 2023 - Present). Passed Comprehensive Exam in 08/2025.

DEng Praxis Advisor *(2 in progress)*

- Anthony Daniel Pedonesi, "Performance-based Design of Manufactured Housing Foundations." (August 2026 - Present).
- G. Alexander Riveros, "Statistical Approaches for Geotechnical Applications." (January 2025 - Present).

MS Thesis Advisor *(1 in progress)*

- Sakar Hada, "Convergent Resilience for Flood-Prone, Levee-Protected Communities in Pennsylvania." (August 2026 - Present).

Undergraduate Student Researchers Supervised *(1 in progress, 5 completed)*

- Mia Torgan, "Quantifying Flood Resilience in Levee-Protected Pennsylvania Communities." URIP Program. (January 2026 - present).
- Alyssa Ottes, "Using HVSR to Characterize Heterogeneity in Subsurface Conditions and Geometry Along a 9-Mile-Long Earthen Levee." WISER/MURE/FURP Program. (January 2025 - May 2025).
- Audrey Everett, "Climate-Sensitive Levee Risk Assessment and Policy Considerations Needed for Flood Resiliency." Penn State Climate Science REU Program. (May 2025 - August 2025).
- Gabriel Louw, "Climate Change Impacts on Groundwater Levels in Napier, New Zealand." Schreyer Honors Thesis Student, (October 2024 - May 2025).
- Rachel Kaintz, "Understanding the Impact of Climate Change on Levee Infrastructure and Related Flood Hazards." WISER/MURE/FURP Program. (January 2024 - December 2024).
- Anika Reja, "Rising Water, Rising Concerns: Levee Residual Risk in the Susquehanna River Basin." Penn State Climate Science REU Program. (May 2024 - August 2024).

PhD Dissertation Committee Member *(3 completed, 5 in progress)*

- Jun Xiong, "Coupling Physics and Machine Learning for Geotechnical Engineering Under Data Scarcity." (September 2026 - October 2026). Stage of Completion: Passed Thesis Defense in 10/2026.

- Lillian Miller, "Numerical Modeling of Volcanic Landslides." (September 2026 - Present). Stage of Completion: Passed Qualifying Exam.
- Swarnadeep Mukherjee, "Levee Residual Risk and Flood Adaptation Strategies." (June 2026 - Present). Stage of Completion: Passed Qualifying Exam.
- Souradip Dey, "Numerical Modeling for Coupled Flow and Deformation in Porous Media." (March 2026 - Present). Stage of Completion: Passed Comprehensive Exam in 05/2026.
- Abdolmehdi Behroozi, "Solving Shallow Water Equations for Flood Inundation Simulation using Neural Operators." (February 2025 – Present). Stage of Completion: Passed Comprehensive Exam in 08/2025.
- Xueyang Wang, "Mapping and Predicting Spatiotemporal Permafrost Characteristics Using Ground-Based and Airborne Geophysical Methods." (November 2024 - Present). Stage of Completion: In process. Passed Comprehensive Exam in 01/2025.
- David Caballero Russi, "Vibration Mitigation of Seismic Waves Implementing Metamaterials Principles." (June 2023 - July 2026). Passed Thesis Defense in 07/2026.
- Xiaohang Ji, "Understanding Seasonal Variations of In-Situ Thermal and Seismic Characteristics of Degrading Permafrost in the Arctic Based on Distributed Fiber Optic Sensing." (November 2024 - April 2025). Passed Thesis Defense in 04/2025.

Masters Committee Member *(1 completed)*

- Matthew Hallissey, "Development of Electromagnetic Geophysical Surveys for Permafrost using Unmanned Aerial Systems." (January 2025 - March 2025). Passed Thesis Defense in 03/2025.

Awards Won by Students

- Irene Peng
  - Leo P. Russell Graduate Fellowship, College of Engineering, Penn State, 2026
- Aavash Ghimire
  - Penn State ICDS Rising Researcher, 2026
  - Deep Foundations Institute Penn State Scholarship, 2025
  - Leo P. Russell Graduate Fellowship, College of Engineering, Penn State, 2025
  - Deep Foundations Institute At-Large Scholarship, 2024
  - National Science Foundation: Innovation in Graduate Education (NSF-IGE) Award, 2024
  - University Graduate Fellowship, 2023
- Rachel Kaintz
  - Association of State Dam Safety Officials Undergraduate Student Paper Competition Winner, 2025

PROFESSIONAL CONTRIBUTIONS

Professional Registration

- Professional Engineer, Commonwealth of Pennsylvania, #PE098044, 2025-present

Service on Committees in Professional Organizations

- U.S. Universities Council on Geotechnical Education and Research (USUCGER)
  - Junior Board Member (2025 - Present)
    - Student Travel Grant Coordinator (2025 - Present)
  - Member (2023 - Present)
- American Society of Civil Engineers (ASCE) Geo-Institute

    - Contributor, "Levees" chapter of 2026 Pennsylvania ASCE Infrastructure Report Card
    - Geo-Institute
        - Soil Dynamics and Earthquake Engineering Committee
            - Member, Technical Paper Review Subcommittee (2025 - Present)
        - Innovative Technologies & Tools in Geotechnical Engineering Committee
            - Member (2023 - Present)
    - Member (2012 - Present)
- Earthquake Engineering Research Institute (EERI)
    - Virtual Earthquake Reconnaissance Team (VERT) Contributor (2026 - Present)
        - Chen, C., L. Espinoza Otalora , M. Griffith, A. Hiscock, S. Hyde , N. Ingabire Abayo, J. Johnson, D. Joshi, S. Khanal, S. Loos, A. Makdisi, Y. Merino, R. Moss, L. Namazie, M. Ortiz-Millan, M. Petersen, J. Rea-Avila, H. Rose , M. Sanger, M. Seage, H. Sezen, O. VanBuskirk, K. Yost (2026). " EERI Virtual Earthquake Reconnaissance Team (VERT) Phase 1 Report on the 2026 Yumare, Venezuela Earthquakes", in *EERI 2026 Yumare, Venezuela Earthquake Reconnaissance*. DesignSafe-CI. https://doi.org/10.17603/ds2-4sg3-3e11
    - Public Policy and Advocacy Committee
        - Co-chair (2024 - Present)
        - Member (2020 - Present)
    - Younger Member Committee
        - Mentorship Coordinator (2025)
        - Member (2020 - Present)
    - Member (2011 - Present)
- Geotechnical Extreme Events Reconnaissance Association (GEER)
    - Member (2023 - Present)

Conference Organization and Session Chairmanship

- Co-organizer, USUCGER presents Artificial Intelligence in Geotechnical Engineering Education - University and Practitioner Perspectives, Geo-Institute of ASCE Webinar, October 15, 2026
- Organizing committee member, Anura3D Online Workshop 2026, September 4, 2026
- Special session organizer and chair, "Federal Shifts in Earthquake Risk Reduction: Policy, Programmatic, and Funding Reforms and EERI's Advocacy Response," 13th National Conference in Earthquake Engineering, Earthquake Engineering Research Institute, Portland, OR, July 13-17, 2026
- Chair, "Resilience Standards Across Industry Sectors" panel, ARISE-US 2025: Building Connections for Resilient Communities conference, Providence, RI, October 1-2, 2025
- Special session organizer and chair, "Changing Climate, Changing GeoHazards," Geocongress 2024, Vancouver, BC, Canada, February 25-28, 2024
- Organizer, US-New Zealand Workshop on Interconnected Hazards, Auckland, New Zealand, November 21, 2023

Other Professional Service

- Mentor, ARISE-US, a private sector alliance for disaster resilient societies through the United Nations Office for Disaster Risk Reduction, 2024 - present
    - McDuffie, J. (Ph.D. Student, Civil Engineering, Vanderbilt University), "Capturing Private-Sector Perspectives on Built-Environment Resilience." (February 2024 – Present).

    - Legenza, R. and Fuller, R. (M.S. students, Emergency Management, Arizona State University), "Compiling and Analyzing Public Domain Methodologies Advancing Community Infrastructure Resilience." (January 2024 – May 2024).
- Developer, Anura3D Material Point Method (MPM) Research Community, 2020-present
- Organizing Committee Member, Risk and Resilience DAT/Artathon, Summer 2023

University Service

- Member, Search Committee for Tenure Track Faculty Position in CEE (October 2026 - Present)
- Member, Strategic Actions Committee, Civil and Environmental Engineering (August 2026 - Present)
- Judge, Undergraduate Exhibition for Research, Inquiry, and Creative Activity (April 2026)
- Member, Communications Committee, Civil and Environmental Engineering, (January 2026 - May 2026)
- Advisory Committee Member, Computational Sciences Hub, Penn State Institute for Computational and Data Science (ICDS) (September 2025 - Present)
- Member, Penn State Flood Hazard Working Group (December 2024 - Present)
- Member, Search Committee for Professional Track Faculty Position in CEE (August 2024 - May 2025)
- Faculty Advisor, Penn State Chapter of the Earthquake Engineering Research Institute (January 2024 - Present)
- Judge, College of Engineering Research Symposium (April 2023)
- Member, Undergraduate Program Committee, Civil and Environmental Engineering, (January 2023 - Present)

OUTREACH, ENGAGEMENT, AND MEDIA

- Panelist, Notre Dame Leaders speaker series, "Equity and Resilience" (October 27, 2025)
- Guest lecturer, Penn State ASCE Fundamentals of Engineering Review Class (December 2, 2024)
- Interviewee, Growing Impact Podcast, "Visualizing Flood Risk" (November 1, 2024)
- Panelist, Penn State Multicultural Engineering Program FaculTEA Event (November 27, 2023)
- Interviewee, ASCE Geo-Institute Director's Cut (May 12, 2021)