

CURRICULUM VITAE

THE WILLIAM STATES LEE COLLEGE OF ENGINEERING

NAME: Tara Cavalline

DATE: 12/2/2024

RANK OR TITLE: Professor

DEPARTMENT: Engineering Technology and Construction Management

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DATE OF FIRST EMPLOYMENT IN COE: 8/15/2006

DATE OF TENURE: 7/1/2018

EDUCATION

Degrees

- Ph.D., 2012 Infrastructure and Environmental Systems (area of specialization: civil engineering materials), University of North Carolina at Charlotte, Charlotte, NC
- M.S., 1999 Civil Engineering (area of specialization: civil engineering materials), The Pennsylvania State University, University Park, PA
- B.S., 1998 Civil Engineering with Honors and Distinction, The Pennsylvania State University, University Park, PA (Minor in Environmental Engineering)

Certificates and Licenses

Professional Engineer in North Carolina, South Carolina, Georgia, and Pennsylvania

EXPERIENCE

Academic and Industry Positions

- 2006- present University of North Carolina at Charlotte, Department of Engineering Technology and Construction Management, Ranks: Lecturer, 2006, Faculty Associate 2007-2012, Assistant Professor 2012-2018, Associate Professor 2018-2023, Professor 2023-present
- Affiliated Faculty, Department of Civil and Environmental Engineering
- Co-Director, Charlotte Aviation Innovation and Research (AIR) Institute (2023-2024),
Director, Charlotte AIR Institute (2024-present)
- 2003-2006 Sutton-Kennerly & Associates, Inc., Charlotte, NC, Project Engineer
- 2000-2003 MACTEC Engineering and Consulting, Inc., Charlotte, NC, Senior Engineer
- 1998-1999 The Pennsylvania Transportation Institute, University Park, PA, Graduate Research Assistant

RESEARCH ACCOMPLISHMENTS

Grants and Contracts Awarded

External Funding: \$5,304,333 total, with an additional \$985,000 awarded and in authorization phase. \$4,207,966 as PI, \$1,161,367 as Co-PI

1. PI, "Development and Deployment of Innovative Technologies for Concrete Pavements." Federal Highway Administration via the National Concrete Pavement Technology Center at Iowa State University. \$185,000 – awarded, in project authorization phase (Lead PI – Dr. Peter Taylor, \$5,000,000)
2. PI, "Reducing Embodied Greenhouse Gas Emissions for Construction Materials and Products." Environmental Protection Agency via Oklahoma State University. \$800,000 – awarded, in project authorization phase. (Lead PI – Dr. Deb Mishra, \$8,000,000)
3. PI, "Pumped Concrete Point of Placement Air System Evaluation." North Carolina Department of Transportation. (\$36,856). June 2024 to December 2024.
4. PI, "Reducing Embodied Carbon of Concrete with Mineral-Blended Polymeric Microspheres – MnRoad Field Trial." National Road Research Alliance via Iowa State University. (\$57,000) January 2024 to January 2028.
5. PI, "Advancing Performance Engineered Concrete Mixtures and Sustainability Assessment." North Carolina Department of Transportation. August 2024 to July 2026. (\$297,072). (Co-PI Dr. Brett Tempest)
6. PI, "Concrete Airfield Paving Continuity – Best Practices Guide." Federal Aviation Administration Airport Concrete Pavement Technology Program, administered by National Concrete Pavement Technology Center at Iowa State University. February 2024 to September 2027. (\$85,000). (Lead PI Matt Fonte, Fonte and Co., \$1,400,000).
7. PI, "Long Term Testing of Concrete Infrastructure for Alkali Silica Reactivity." North Carolina Department of Transportation. December 2023 to March 2025. (\$15,134).
8. PI, "Evaluation of J-Rox as SCM and Aggregate for Concrete Applications, Phase III" Global Sustainable Solutions. August 2023 to December 2024. (\$55,293).
9. PI, "Identification and Prioritization of Vulnerable Roadway Segments for Proactive Resilience Planning and Response." NCDOT via North Carolina State University. August 2023 to July 2025, \$74,759 (Lead PI Dr. Benjamin (Shane) Underwood, NCSU, \$272,845).
10. PI, "Quality Control and Quality Acceptance of Concrete Airport Pavement." Federal Aviation Administration Airport Concrete Pavement Technology Program, administered by National Concrete Pavement Technology Center at Iowa State University. August 2022 to February 2025. (\$500,000 + \$63,476 supplement = \$563,476)
11. PI, "Performance Engineered Mixtures for Airfield Pavements" Federal Aviation Administration Airport Concrete Pavement Technology Program, administered by National Concrete Pavement Technology Center at Iowa State University. April 2022 to June 2025. (\$222,823). (Lead PI Dr. Tyler Ley, Oklahoma State University, \$750,000).
12. PI, "Field and Laboratory Testing to Assess Airfield Concrete Pavements – 2022 Pavement Management Program, Hartsfield-Jackson Atlanta International Airport." Aviation Infrastructure Solutions. May 2022 to May 2023. (\$80,127).
13. PI, "Freeze-Thaw Durability of Concrete Containing Microspheres." CEM Innovations, LLC. September 2021 to August 2023. (\$4,224 + \$5,462 = \$9,686).
14. PI, "Investigating Thermal and Mechanical Inputs for Rigid Pavement Design in North Carolina." NCDOT via Western Carolina University. August 2021 to April 2024. (\$144,629) (Lead PI Dr. Gauhar Sabih, Western Carolina University, \$238,713)

15. PI, "Developing a Workflow for Safe and Cost-effective UAV-enabled Bridge Inspection with Multiple UAV Platforms." NCDOT via NCA&T. August 2021 to February 2024. (\$125,682) (Lead PI Dr. Ali Karimodini, North Carolina Agricultural and Technical State University, \$373,177)
16. PI, "Evaluation of J-Rox as SCM for Concrete Applications," Global Sustainable Solutions. November 2019 to May 2023. (\$41,534 phase 1 + \$48,815 phase 2 = \$90,349 total).
17. PI, "Advancing Concrete Pavement Technology Solutions – Performance Engineered Mixtures (PEMs)/AASHTO PP 84-19 QC Guidance." FHWA via Iowa State University. October 2019 to September 2024. (\$170,000) (Lead PI Dr. Peter Taylor, Iowa State University, \$7.0M plus \$2.0M in cost share).
18. PI, "Advancing Concrete Pavement Technology Solutions – Recycling and Reuse of Waste Products." FHWA via Iowa State University. July 2019 to November 2023. (\$132,074). (PI Dr. Peter Taylor, Iowa State University, \$7.0M plus \$2.0M in cost share)
19. PI, "Geospike Prototype Performance Testing" Geopier, Inc. May 2021 to April 2022. (\$7,000) (former PI – Benjamin Smith).
20. PI, "Developing a Safe and Cost-effective Physics-based Flight Control Methodology for a UAV-enabled Bridge Inspection." NCDOT via North Carolina Agriculture & Technical University. August 2019 to July 2021. (\$89,073) (former PI – Dr. Navid Goudarzi). (Project Lead PI Dr. Ali Karimodini, NC A&T, \$259,861).
21. PI, "Petrographic Examination and Laboratory Testing of Concrete Core Samples." Electric Power Research Institute (EPRI). May 2019 to February 2020. (\$5,001).
22. Co-PI, "Effective Characterizations of Recycled Concrete Aggregate (RCA) for Concrete Applications." ACI Foundation. June 2019 to January 2021. (\$20,000). (Lead PI - Dr. Jiong Hu, University of Nebraska-Lincoln \$50,000)
23. PI, "Continuing Toward Durable and Sustainable Concrete Through Performance Engineered Concrete Mixtures." NCDOT. August 2019 to December 2021. (\$294,204). (Co-PI Dr. Brett Tempest)
24. PI, "Petrographic Examination and Laboratory Testing of Concrete Core Samples," 2019 Pavement Management Program, Hartsfield-Jackson Atlanta International Airport, Atlanta, Georgia. Aviation Infrastructure Services. May 2019 to June 2020. (\$69,256) (Co-PI Dr. Wesley Williams).
25. PI, "Performance Engineered Concrete Mixtures – FHWA Implementation Funds." NCDOT. October 2018 to May 2021. (\$69,942). (Co-PI Dr. Brett Tempest)
26. Co-PI, "Evaluating Corrosive Site Performance and Policy with Concrete Admixtures." NCDOT. August 2018 to March 2022. (\$270,522+\$5,500 additional funding = \$276,022) (PI Dr. Brett Tempest).
27. PI, "Durable and Sustainable Concrete Through Performance Engineered Concrete Mixtures." NCDOT. August 2017 to July 2019. (\$280,025) (co-PI Dr. Brett Tempest). **Nominated by NCDOT as High Value Research Project for 2021 AASHTO High Value Research Program.**
28. PI, "Shalom Park Petrographic Evaluation," SKA Consulting Engineers. July 2017 to October 2017. (\$3,144).
29. PI, "Petrographic Examination and Laboratory Testing of Concrete Core Samples", 2016 Pavement Management Program, Hartsfield-Jackson Atlanta International Airport, Atlanta, Georgia. Aviation Infrastructure Services. October 2016 to November 2017. (\$66,334) (Co-PI Dr. Wesley Williams).
30. Co-PI, "Improving Replacement Cost Data for NCDOT Highway Bridges." North Carolina Department of Transportation (NCDOT). August 2016 to July 2018. (\$97,070). (PI – Dr. Matthew Whelan).
31. PI, "Scott Hall - Evaluation of Concrete Core Samples," KSQ Design. June 2016 to August 2016. (\$2,636).
32. PI, "Technical Assistance Project, I-85 Concrete Pavement." North Carolina Department of Transportation (NCDOT) Technical Assistance Project TA-2016-08. January 2016 to May 2016 (\$6,953)

33. PI, "Petrographic Examination and Laboratory Testing of Concrete Airfield Pavements to Assist with Marking Adhesion Failure Analysis." Aviation Infrastructure Solutions. December 2015 to July 2016. (AIS) (\$17,314).
34. PI, "FHWA Concrete Recycling, Technology Transfer of Concrete Pavement Technologies – Year Four & Five." FHWA via Snyder & Associates, Inc. September 2015 to June 2018. (\$43,795).
35. PI, "Internal Curing of Concrete Using Lightweight Aggregate." NCDOT. August 2015 to July 2018. (\$284,649). (Co-PI Dr. Brett Tempest).
36. Co-PI, "Guidelines for Prioritization of Bridge Replacement, Rehabilitation, and Preservation Projects." NCDOT. August 2015 to July 2018 (\$181,802). (PI – Dr. Matthew Whelan).
37. Co-PI, "Beneficial Uses of High Carbon Fly Ashes in Portland Cement Concrete with Air Entrainment," Duke Energy Corporation. August 2015 to December 2017. (\$139,286). (PI – Dr. Brett Tempest)
38. PI, "Analysis of Hardened Air Void System of Concrete." NCDOT. Technical Assistance Project TA-2016-02. August 2015 December 2015 (\$6,776).
39. PI, "Evaluation of Thermal Performance of Lightweight Concrete." Stalite. May 2015 to September 2015. (\$9,817).
40. PI, "Testing of Roller Compacted Concrete Specimens." Andale Construction. May 2015 to June 2015. (\$3,751).
41. PI, "Improved Data for Mechanistic-Empirical Pavement Design for Concrete Pavements." NCDOT. August 2014 to August 2017. (\$235,955). (Co-PI Dr. Brett Tempest).
42. Co-PI, "Cost Analysis on the Reuse of Concrete Residuals." NCDOT. August 2014 to August 2016. (\$209,367). (PI – Dr. Nicholas Tymvios)
43. PI, "Petrographic Examination and Laboratory Testing of Concrete Core Samples - 2013 Pavement Management Program, Hartsfield-Jackson Atlanta International Airport, Atlanta, Georgia." Boudreau Engineering. April 2014 to May 2015. (\$62,963). (Co-PI Dr. Wes Williams)
44. PI, "Determination of Bridge Deterioration Models and Bridge User Costs for NCDOT Bridge Management System." NCDOT. August 2013 to August 2015 (\$174,801) (Co-PIs Dr. Matthew Whelan and Dr. Brett Tempest).
45. PI, "Laboratory Testing of Concrete Cores for Coefficient of Thermal Expansion," NCDOT. May 2013 to December 2013 (\$6,454).
46. PI, "Durability of Lightweight Concrete Bridge Decks – Field Evaluation." NCDOT. August 2010 to October 2012. (\$180,186). **Nominated by NCDOT as High Value Research Project for 2013 AASHTO High Value Research Program.**
47. Co-PI, "Development of a Concrete Masonry Design and Construction Course." National Concrete Masonry Association Foundation. January 2013 to May 2014 (\$8,511). (PI – Dr. Thomas Nicholas).
48. Co-PI, "Development and Validation of Pavement Deterioration Models and Analysis Weight Factors for the NCDOT Pavement Management System." NCDOT. April 2011 to April 2013. (\$180,509). (PI – Dr. Dong Chen, Co-PI Dr. Vincent Ogunro).
49. PI, "Petrographic Examination and Laboratory Testing of Concrete Core Samples." 2010 Pavement Management Program, Hartsfield-Jackson Atlanta International Airport, Atlanta, Georgia. Materials Managers and Engineers. May 2010 to October 2010. (\$38,150).
50. PI, "Petrographic Examination of Concrete Core Samples." 2007 Pavement Management Program, Hartsfield-Jackson Atlanta International Airport, Atlanta, Georgia. United Consulting. May 2007 to September 2007. (\$24,999).

Internal Funding \$17,000 total, \$67,000 as PI

1. Co-PI, Charlotte Aviation Innovation and Research Institute (Charlotte AIR Institute), July 2023 to August 2024 (\$50,000 Year 1, \$50,000 Year 2 pending approval)
2. PI, UNC Charlotte Atkins Library Mini-Grant for Affordable Textbooks, January 2018-August 2019 (\$1,000)
3. PI, "Study on the Feasibility of Use of Fine Aggregate From Crushed Recycled Brick Masonry as an Internal Curing Agent in Concrete." UNC Charlotte Department of Engineering Technology and Construction Management. March 2014 to May 2014 (\$4,000).
4. PI, "Durability Performance of North Carolina Bridge Decks (Additional work based on NCDOT Research Project 2011-06)." UNC Charlotte Department of Engineering Technology and Construction Management. March 2014 to May 2014 (\$4,000).
5. PI, "Effect of Temperature on Surface Resistivity of Concrete." UNC Charlotte Department of Engineering Technology and Construction Management. February 2012 to August 2012 (\$3,000).
6. PI, "Constructing Diversity, UNC Charlotte Women in Construction (WIC) Club." Chancellor's Diversity Challenge grant. September 2009 to May 2010 (\$5,000).

Consulting

- Facilitator, FHWA Concrete Pavements and Materials Technical Feedback Group 2019-2021. Prime contract was through Quality Engineering Services (QES).
- Developer, FHWA Quality Assurance Technical Information Products. 2022-2024. Prime contract was through Quality Engineering Services (QES).

Publications

Please note: *Italics* indicates student author advised by Tara Cavalline. Some publications are under maiden name, Tara L. Krize.

Peer-Reviewed Journal Publications

1. Marfo, E.A., Khan, M.A., *Wu, T.*, **Cavalline, T.L.**, and Karimoddini, A. (2024). "Resource Assessment Tool for Effective UAV-Assisted Bridge Inspections." *Transportation Research Record: Journal of The Transportation Research Board*, accepted April 26, 2024.
2. McIntosh, M., Sabih, G., *Summers, C.*, **Cavalline, T.L.**, and Tempest, B.Q. (2024). "Quantifying the Effects of Material Input Levels on Jointed Plain Concrete Pavement (JPCP) Performance and Slab Thickness." *Construction Materials*. Accepted Jan 26, 2024.
3. *Dey, A.*, **Cavalline, T.L.**, Mamirov, M., and Hu, J. (2023). "Residual mortar content and chemical characterization of recycled concrete aggregates using a handheld x-ray fluorescence device." *ACI Materials Journal*, 120(5), 53-65. doi: 10.14359/51738890
4. Kasana, D., Smithwick, J., Dodd, J., **Cavalline, T.L.**, and Mayo, G. (2023). "Successful Change Management Strategies for Unforeseen Events: Facility Management and the Case of COVID-19." Submitted to *ASCE Journal of Engineering Management* January 2022, <https://doi.org/10.1061/JMENEAM-4870>
5. Attiogbe, E.K., **Cavalline, T.L.**, and Neuwald, A.D. (2023). "Lowering Carbon Footprint while Achieving Frost-Resistant Concrete: Mineral-blended Polymeric Microsphere Powder." *Concrete International*. May 2023, 36-41.
6. *Sheffield, M.T.*, **Cavalline, T.L.**, and Dean, G. (2022). "Insights Into Increasing the Implementation of Concrete Overlay Rehabilitation Methods for Highway Pavements." *Transportation Research Record: The Journal of the Transportation Research Board*, 2677(3), 757-767. <https://doi.org/10.1177/03611981221117539>

7. Mamirov, M., Hu, J., and **Cavalline, T.L.** (2022). "Geometrical, Physical, Mechanical, and Compositional Characterization of Recycled Concrete Aggregate," *Journal of Cleaner Production*.
<https://doi.org/10.1016/j.jclepro.2022.130754>
8. Mamirov, M., Hu, J., and **Cavalline, T.L.** (2022). "Mixture Design of Recycled Aggregate Concrete Based on Particle Packing and Excess Paste Theory." *ACI Materials Journal*. Accepted November 16, 2021.
9. **Cavalline, T.L.**, White, F.D., Tempest, B.Q., Hunter, B.J., Ange, C.M., and Simpson, R.P. (2022). "Performance Engineered Concrete Mixtures: Implementation at an Interstate Rigid Pavement Project." *Transportation Research Record: Journal of the Transportation Research Board*, 2676(5), 450-459.
<https://doi.org/10.1177%2F03611981211067981>
10. **Cavalline, T.L.**, Gallegos, J., Castrodale, R.W., Freeman, C., Liner, J., and Wall, J. (2021). "Influence of Lightweight Aggregate Concrete Materials on Building Energy Performance." *Buildings*, 11(3), 94.
<https://doi.org/10.3390/buildings11030094>.
11. Milla, J., **Cavalline, T.L.**, Rupnow, T.D., Melugiri-Shakaramurthy, B., Lomboy, G., and Wang, K. (2021). "Methods of Test for Concrete Permeability: A Critical Review." *ASTM Advances in Civil Engineering Materials*, 10(1), 172-209. <https://doi.org/10.1520/ACEM20200067>
12. **Cavalline, T.L.**, Newsome, R.A., Tempest, B.Q., and Leach, J.W. (2020). "Autogenous Shrinkage of Internally Cured Conventional, Latex-Modified, and Very High Early Strength Latex-Modified Concrete and Mortar." *ASTM Advances in Civil Engineering Materials*, 9(1), 557-573.
<https://doi.org/10.1520/ACEM20200059>
Received 2020 Best Paper Award for ASTM Advances in Civil Engineering Materials.
13. Kasana, D., Smithwick, J., Mayo, G., and **Cavalline, T.** (2020). "Enhanced Product Evaluation Tools for State Transportation Agencies to Overcome Commonly Faced Challenges." *ASCE Journal of Management in Engineering*, 36(3). DOI: [https://doi.org/10.1061/\(ASCE\)ME.1943-5479.0000756](https://doi.org/10.1061/(ASCE)ME.1943-5479.0000756)
14. Goyal, R., Whelan, M.J., and **Cavalline, T.L.** (2019). "Multivariable Proportional Hazards-based Probabilistic Model for Bridge Deterioration Forecasting." *Journal of Infrastructure Systems*, 26(2). 10.1061/(ASCE)IS.1943-555X.0000534
15. Tymvios, N., **Cavalline, T.L.**, Maycock, R., Albergo, C., and Roberts, J. (2019). "State of US Practice for the Disposal and Reuse of Concrete Residuals." *ASCE Practice Periodical on Structural Design and Construction*. 24(4). DOI: 10.1061/(ASCE)SC.1943-5576.0000447
16. **Cavalline, T.L.**, Tempest, B.Q., Blanchard, E., Medlin, C., Chimmula, R., and Morrison, C. (2018). "Impact of Local Calibration Using Sustainable Materials for Rigid Pavement Analysis and Design." *ASCE Journal of Transportation: Part B Pavements*, 144(4).
17. **Cavalline, T.L.**, Castrodale, R.W., Freeman, C., and Wall, J. (2017). "Impact of Lightweight Aggregate on Concrete Thermal Properties." *ACI Materials Journal*, 114(6), 945-956.
18. Nicholas, T., **Cavalline, T.**, Johnson, D., and Laney, M. (2017). "Thermal Performance of a Recycled Aggregate Using Building Energy Simulation Programs." *International Journal of Engineering Research and Innovation*, (9)1, 30-39.
19. Tempest, B.Q., **Cavalline, T.L.**, and Gergely, J. (2017) "Predicting Corrosion-related Bridge Durability with Laboratory Measured Permeability Results: A Case Study of the Virginia Dare Memorial Bridge." *ASCE Journal of Performance of Constructed Facilities*, 31(5), [https://doi.org/10.1061/\(ASCE\)CF.1943-5509.0001048](https://doi.org/10.1061/(ASCE)CF.1943-5509.0001048).
20. **Cavalline, T.L.**, Calamusa, J.T., and Kitts, A.M. and Tempest, B.Q., (2016). "Field Observed Cracking of Paired Lightweight and Normalweight Concrete Bridge Decks." *International Journal of Concrete Structures and Materials*, 11(1), 85-97. DOI: 10.1007/s40069-016-0176-1.
21. Goyal, R., Whelan, M., and **Cavalline, T.L.** (2016). "Characterizing the effect of external factors on deterioration rates of bridge components using multivariate proportional hazards regression." *Structure*

and Infrastructure Engineering. <http://www.tandfonline.com/doi/full/10.1080/15732479.2016.1217888>.

22. **Cavalline, T.L.** and Delatte, N.J. (2015). "Learning from the World Trade Center Collapse – Use of a Failure Case Study in a Structures and Materials Laboratory Course." *Journal of Engineering Technology*, 32(2), 2-17. **Winner of American Society for Engineering Education (ASEE) Engineering Technology Division (ETD) Best Paper Award.**
23. **Cavalline, T. L.**, *Schwerin, D.E.*, Weggel, D. C., & McClure, C. (2014). "Construction of a Recycled Brick Masonry Aggregate Concrete Test Pavement." *The Technology Interface International Journal*, 15(1), 11-20.
24. Nicholas, T., Radford, P., **Cavalline, T.**, & Brizendine, A. L. (2014). "Compressive Performance of Recycled Aggregate Mortar." *The International Journal of Engineering Research and Innovation*, 6(2), 49-55.
25. Chen, D., **Cavalline, T.L.**, and Mastin, N. (2014). "Development of Piecewise Linear Performance Models for Flexible Pavements Using PMS Data." *Journal of Performance of Constructed Facilities*, DOI: 10.1061/(ASCE)CF.1943-5509.0000647, 04014148.
26. **Cavalline, T.** and Weggel, D. (2013). "Recycled Brick Masonry Aggregate Concrete: Use of Brick Masonry from Construction and Demolition Waste as Recycled Aggregate in Concrete." *Structural Survey*, 31(3), 160-180.
27. *Schwerin, D.E.*, **Cavalline, T.L.**, and Weggel, D.C. (2013). "Use of Recycled Brick Masonry Aggregate and Recycled Brick Masonry Aggregate Concrete in Sustainable Construction." *KICEM Journal of Construction Engineering and Project Management*, 3(1), 28-34.
28. Tikalsky, P.J., Roy, D.M., Scheetz, B.E., and **Krize, T.L.** (2002). "Redefining Cement Characteristics for Sulfate Resistant Portland Cements," *Journal of Cement and Concrete Research*, 32(8), 2002, 1239 -1246.

Journal Papers Under Review

Books

1. **Cavalline, T.L.**, Morian, D., and Schexnayder, C.J. (2021). *Construction Quality in the Alternate Project Delivery Environment*. American Society of Civil Engineers (ASCE) Press. 446 pages. ISBN: 978-0-7844-1582-5. <https://doi.org/10.1061/9780784415825>

Other Peer-Reviewed Publications

1. Armaghani, J., and **Cavalline, T.L.** (2025, in review). *Use of Supplementary Cementitious Materials for Concrete*. National Cooperative Highway Research Program Synthesis. Topic 55-05. Transportation Research Board, National Research Council. Washington, D.C.
2. Smith, G., Wathne, L., Hanson, T., Masten, M., Reichelt, S., Bahmer, E., Davis, N., **Cavalline, T.L.**, Tempest, B.Q., and Hunter, B.J. (2024). *Using Performance Engineered Mixtures to Improve Pavement Performance and Sustainability: State Experiences*. Transportation Research Circular E-287. Transportation Research Board, Washington, DC. 94 pages.
3. Armaghani, J., and **Cavalline, T.L.** (2020). *Concrete Technology for Transportation Applications*. National Cooperative Highway Research Program Synthesis 544. Topic 49-09. Transportation Research Board, National Research Council. Washington, D.C. 194 pages.

FHWA Cooperative Agreement: Advancing Concrete Pavement Technology Solutions

1. **Cavalline, T.L.** and Sutter, L. (2024). "Use of Industrial Byproducts in Concrete Paving Applications." Report FHWA-HIF-24-049. Federal Highway Administration. Washington, DC.
2. **Cavalline, T.L.**, *Bansal, A.*, Snyder, M.B., and Taylor, P. (2024). "Use of Construction Byproducts in Concrete Paving Mixtures." Technical Brief: National Concrete Pavement Technology Center, Iowa State University, Ames, Iowa.

3. **Cavalline, T.L.**, Snyder, M.B., and Taylor, P.C. (2022). "Use of Recycled Concrete Aggregate in Concrete Paving Mixtures." Technical Brief. National Concrete Pavement Technology Center, Iowa State University, Ames, Iowa. Tech Brief FHWA-HIF-20-020. Available at: <https://www.fhwa.dot.gov/pavement/concrete/>
 4. **Cavalline, T.L.**, Fick, G.J., and Innis, A. (2021) "Quality Control for Concrete Paving: A Tool for Agency and Industry." National Concrete Pavement Technology Center, Iowa State University, Ames, Iowa. (165 pages, peer reviewed by representatives from 10 state DOTs, FHWA, ACPA and industry stakeholders) https://intrans.iastate.edu/app/uploads/2021/12/QC_for_concrete_paving_web.pdf
- Assisted in drafting AASHTO Standard Practice R XXX-25, Standard Practice for quality Assurance of Concrete.

FHWA Concrete Recycling Initiative

(Peer reviewed by representatives from 10 state DOTs, FHWA, ACPA and industry stakeholders)

1. Snyder, M.B., **Cavalline, T.L.**, Fick, G., Taylor, P., Klokke, S., and Gross, J. (2018). *Recycling Concrete Pavement Materials: A Practitioners Reference Guide*. National Concrete Pavement Technology Center, Iowa State University, Ames, Iowa. 88 pages. <http://www.cptechcenter.org/concrete-recycling/>
Lead author of three of seven total chapters:
 - Chapter 2: Economics and Sustainability
 - Chapter 3: Project Selection and Scoping
 - Chapter 7: Mitigating Environmental Concerns
2. **Cavalline, T.L.** (2016). "Quantifying the Sustainability Benefits of Concrete Pavement Recycling." Technical Brief, December 2016. National Concrete Pavement Technology Center, Iowa State University, Ames, Iowa. <http://www.cptechcenter.org/concrete-recycling/Recycling-tech-brief-sustainability.pdf>
3. **Cavalline, T.L.** (2017). "Concrete Pavement Recycling – Project Selection and Scoping". Technical Brief, September 2017. National Concrete Pavement Technology Center, Iowa State University, Ames, Iowa. Available at <http://www.cptechcenter.org/>
4. **Cavalline T.L.** (2018). "Concrete Pavement Recycling Series – Protecting Water Quality Through Planning and Design Considerations" Technical Brief, February 2018. National Concrete Pavement Technology Center, Iowa State University, Ames, Iowa. Available at <http://www.cptechcenter.org/>
5. **Cavalline T.L.** (2018). "Concrete Pavement Recycling Series – Protecting the Environment During Construction" Technical Brief, February 2018. National Concrete Pavement Technology Center, Iowa State University, Ames, Iowa. Available at <http://www.cptechcenter.org/>

Other FHWA Sponsored Publications

1. Cavalline, T.L., and Mawdsley, R. (2024). Quality Assurance: Random Sampling and Sampling Security. FHWA-HIF-24-022. United States Department of Transportation. Federal Highway Administration. Available at: <https://rosap.ntl.bts.gov/view/dot/77867>
2. Mawdsley, R. and Cavalline, T.L. (2024) Quality Assurance: Asphalt Mixture Sampling. FHWA-HIF-24-071. United States Department of Transportation. Federal Highway Administration. Available at: <https://rosap.ntl.bts.gov/view/dot/77866>

Peer-Reviewed Conference Papers

1. **Cavalline, T.L.**, Sears, A.E., Pilkington, S.F. (2024). "Use of the Champlain Towers (Surfside) Condominium to Teach Engineering and Construction Ethics." American Society of Civil Engineers 10th Forensic Engineering Congress. November 1-4, 2024. Accepted April 2024.
2. Rogers, L., Reynolds, V., *Rizzolo, J.*, **Cavalline, T.**, and Sabih, G. (2024). Coefficient of Thermal Expansion (CTE) and Modal Mineralogy of North Carolina Aggregate Used for Infrastructure

Applications." Geological Society of America Southeastern Section Meeting. Geological Society of America Abstracts with Programs, 56(2). doi: 10.1130/abs/2024SE-398153

3. Tafannum, T., Sabih, G., **Cavalline, T.L.**, Tempest, B.Q., and Islam, M.M. (2024). "Effects of thermal Conductivity of Concrete on Jointed Plain Concrete Pavement's Performance and Design Slab Thickness." Proceedings of the 60th Annual Associated Schools of Construction International Conference. Volume 5. <https://doi.org/10.29007/8k32>.
4. Tafannum, T., Sabih, G., Summers, C., Islam, Md M., **Cavalline, T.L.**, and Tempest, B.Q. (2024). "Effects of Heat Capacity on Longevity and Performance of Rigid Pavements." ASCE Transportation Conference 2024. (accepted February 1, 2024).
5. Gudimettla, J., Praul, M., **Cavalline, T.L.**, Grove, J., and Taylor, P.C. (2024). "Performance Engineered Mixtures (PEM) Approach for Improved Concrete Durability and Sustainability – Case Studies." Submitted to the 13th International Conference on Concrete Pavements, Minneapolis, MN, August 25-29, 2024. (accepted January 26, 2024).
6. McIntosh, M., Sabih, G., **Cavalline, T.L.**, *Summers, C.J.*, and Tempest, B.Q. (2024). "Effects of Jointed Plain Concrete Pavement's Design Inputs on Performance Indicators." ASCE Geo-Congress 2024 (accepted for publication December 13, 2023).
7. Mahama, E., Karimoddini, A., Khan, M., **Cavalline, T.L.**, Hewlin Jr., R.L., Smith, E. (2022). Testing and Evaluating the Impact of Illumination Levels on UAV-assisted Bridge Inspection." IEEE Aerospace Conference. Big Sky, Montana. March 5-12, 2022.
8. **Cavalline, T.L.**, Sullivan-Green, L.E., Liu, R., Hailes, P., Delatte, N.J., Carper, K.L., Bosela, P.A., Rens, K., Adamtey, S., and Wood, J.G.M. (2022) "Failure Case Studies of Concrete Structures." 9th Forensic Engineering Congress, American Society of Civil Engineers, Denver, CO. November 4-7, 2022.
9. Liu, R., Ataei, H., Rens, K., **Cavalline, T.L.**, Hailes, P., Sullivan-Green, L., Bosela Sr., P., Delatte, N., Rice-Boayue, J., Adamtey, S., and Onsarigo, L. (2022). "A Practical Application of Code of Ethics in Failure Case Studies." 9th Forensic Engineering Congress, American Society of Civil Engineers. Denver, CO. November 4-7, 2022.
10. Hewlin, R.L. Jr., Smith, B., **Cavalline, T.**, and Karimoddini, A. (2021). "Aerodynamic Performance Evaluation of a Skydio UAV via CFD as a Platform for Bridge Inspection: Phase 1 Study." 2021 ASME Fluids Engineering Division Summer Meeting.
Awarded 3rd place Best Technical Presentation for CFD Technical Track
11. Mahama, E.K., Walpita, T., Karimoddini, A., Eroglu, A., Goudarzi, N., and **Cavalline, T.L.** (2021). "Testing and Evaluation of Radio Frequency Immunity of Unmanned Aerial Vehicles for Bridge Inspection. IEEE Aerospace Conference. Big Sky, Montana. March 6-13, 2021.
12. **Cavalline, T.L.**, Snyder, M.B., Cackler, T., and Taylor, P. (2020). "Guidance for Increasing the Use of Recycled Concrete Pavement Materials." Accepted for presentation/publication for ISCP 12th International Conference (August/September 2020, rescheduled for August/September 2021 due to coronavirus).
13. Sprinkel, M., Greer, C., Shah, S.P., Meininger, R., Kevern, J., Fou, P., Kayat, K., Lu, L., Armaghani, J., **Cavalline, T.**, and Streeter, D. (2020). "Transportation Research Board's Influence on Concrete in Transportation Infrastructure." Submitted to Transportation Research Board as TRB Centennial Paper from Concrete Section.
14. Goyal, R., Whelan, M., and **Cavalline, T.** (2019). "Duration-based Forecasting of Bridge Condition with Non-Parametric Kaplan-Meier Survival Functions." 5th Annual Conference on Smart Monitoring, Assessment, and Rehabilitation of Civil Structures. Potsdam, Germany, August 27-19, 2019.
15. **Cavalline, T.L.**, Green, C.S., Tymvios, N., (2018). "Failures All Around Us: Use of Student-Identified Failure Case Studies to Teach the Investigation Process." American Society of Civil Engineers Forensic Engineering 8th Congress, Austin, TX, November 29-December 2, 2018.
16. Liu, R., Nastar, N., **Cavalline, T.**, Sullivan-Green, L.E., Bosella, P.A., Delatte, N.J., Parfitt, M.K., and

- Carper, K.L. (2018). "Failing Forward – Construction Failure Case Studies." American Society of Civil Engineers Forensic Engineering 8th Congress, Austin, TX, November 29-December 2, 2018.
17. Goyal, R., Whelan, M.J., and **Cavalline, T.L.** (2018). "Predictive fidelity of bridge deterioration models: probabilistic vs. deterministic." 9th International Conference on Bridge Maintenance, Safety and Management (IABMAS2018), Melbourne, Australia. July 9-13, 2018.
 18. Chen, D. and **Cavalline, T.L.** (2017). "A Robust Data Processing Method for Pavement Performance Models." Submitted to the World Conference on Pavement and Asset Management (WCPAM) 2017. Milan, Italy, June 12-16, 2017.
 19. Tymvios, N., **Cavalline, T.L.**, and Albergo, C. (2017). "Cost Factors Affecting Decisions for Recycling and Reuse of Concrete Residuals in North Carolina." Canadian Society for Civil Engineering Conference, Leadership in Sustainable Infrastructure, Vancouver, Canada. May 31-June 1, 2017.
 20. Castrodale, R.W. and **Cavalline, T.L.** (2017). "Thermal Properties of Lightweight Concrete and Their Impact on Bridge Design." 2017 Precast Concrete Institute (PCI) Convention and National Bridge Conference. Cleveland, Ohio, February 28 – March 4, 2017.
 21. Goyal, R., Whelan, M., and **Cavalline, T.** (2016). "Multivariate Regression Modeling of Bridge Deterioration: Identifying Factors Influencing Deterioration over the Life-Cycle." Proceedings of the 8th International Conference on Bridge Maintenance, Safety, and Management (IABMAS 2016). Foz do Iguaçu, Brazil, 26-30 June 2016.
 22. Nicholas, T., **Cavalline, T.L.**, Johnson, D., and Laney, M. (2016). "Thermal Performance of a Recycled Aggregate Utilizing Building Energy Simulation Programs." IAJC/ISAM Joint International Conference, Orlando, Florida, November 6-8, 2016.
 23. **Cavalline, T.L.**, Ley, M.T., Weiss, W.J., Van Dam, T., and Sutter, L. (2016). "A Road Map for Research and Implementation of Freeze-Thaw Resistant Highway Concrete." 11th International Conference on Concrete Pavements, San Antonio, TX, August 28-31, 2016.
 24. *Ramsey, J.D.*, **Cavalline, T.L.**, Whelan, M.J., Goyal, R., and Tempest, B.Q. (2016) "A 25-Year Retrospective on Bridge-Related Crashes in North Carolina: Frequencies, User Costs, and Crash Forecasting Models." Transportation Research Board 2016 Annual Meeting.
 25. **Cavalline, T.L.** and Delatte, N. (2015). "Learning from the World Trade Center Collapse – Use of a Failure Case Study in a Structures and Materials Laboratory Course." Proceedings of the 122nd American Society for Engineering Education (ASEE) Annual Conference and Exposition (Seattle, WA), June 14-17, 2015.
 26. Chen, D., **Cavalline, T.**, and Mastin, N. (2015) "Piecewise Linear Models for Ordinal Pavement Distress Data". 9th International Conference on Managing Pavement Assets (ICMPA9), Washington D.C., May 18-21, 2015.
 27. **Cavalline, T.L.**, *Schwerin, D.E.*, Weggel, D.C., and McClure, C. (2014). "Construction of a Recycled Brick Masonry Aggregate Concrete Test Pavement." Proceedings of IJAC/ISAM, September 25-27, 2014.
 28. Nicholas II, T., Radford, P., **Cavalline, T.**, and Brizendine, A.L. (2014). "Compressive Performance of Recycled Aggregate Mortar." Proceedings of IJAC/ISAM, September 25-27, 2014.
 29. Goyal, R., Ramsey, J., Whelan, M.J., **Cavalline, T.L.**, Tempest, B.Q. (2014). "A Framework for Statistical Regression of Bridge Deterioration Rates for Improved BMS Classification." 9th International Conference on Short and Medium Span Bridges. Calgary, Alberta, Canada, July 15-18, 2014.
 30. Delatte, N., Bagaka's, J.G., Roberts, M.W., Atadero, R.A, Zoghi, M., Johnson, P.W., **Cavalline, T.** and Thompson, M.K. (2013). "Results from Implementation and Assessment of Case Studies in the Engineering Curriculum." Proceedings of the 120th American Society for Engineering Education (ASEE) Annual Conference and Exposition (Atlanta, GA), June 23-26, 2013.
 31. Tempest, B., **Cavalline, T.**, Gergely, J., and Weggel, D., (2010). "Construction and Demolition Waste Used as Recycled Aggregates in Concrete: Solutions for Increasing the Marketability of Recycled Aggregates

Concrete.” Proceedings of the Concrete Sustainability Conference sponsored by the National Ready Mixed Concrete Association (NRMCA). Tempe, AZ, April 13-15, 2010.

32. Scheetz, B.E., Roy, D.M., Tikalsky, P.J., **Cavalline, T.L.**, “Delayed Ettringite Formation and the Influence of Cement Characteristics,” Proceedings of the World Congress of Cement Chemistry, Durban, South Africa, May 2003, pp. 75-83.
33. Tikalsky, P.J., Scheetz, B.E., Roy, D.M., Rosenberger, J., Arjunan, P., and **Cavalline, T.** (2003) “Relationship between Cement Characteristics, Heat of Hydration and Concrete Strength,” Proceedings of the World Congress of Cement Chemistry, Durban, South Africa, May 2003, 1054-1062.
34. Scheetz, B., Roy, D.M., Tikalsky, P.J., **Cavalline, T.L.**, Arjunan, P., and Rosenberger, J. “Influence of Portland Cement Characteristics on Alkali-Silica Reactivity.” (2003). Proceedings of the 82nd Annual Meeting of the Transportation Research Board, January 2003.
35. Roy, D.M., Tikalsky, P.J., Scheetz, B.E., Rosenberger, J., **Cavalline, T.L.**, and Arjunan, P. (2002). “Influence of Portland Cement Characteristics on Alkali Silica Reactivity,” 11th International Congress on the Chemistry of Cement (ICCC) meeting.
36. Roy, D.M., Tikalsky, P.J., Scheetz, B., Rosenberger, J.L., **Krize, T.L.**, Malek, R.I. (2002). “Influence of Cement Composition on AASHTO T 277 Rapid Chloride Ion Permeability: Recommended Changes to the Method.” Proceedings of the 81st Annual Meeting of the Transportation Research Board, January 2002.
37. Tikalsky, P.J., **Krize, T.L.**, Roy, D.M., Scheetz, B., and Gottschall, C. (2001). “Influence of Cement Characteristics on Sulfate Attack.” Proceedings of the 80th Annual Meeting of the Transportation Research Board, January 2001.
38. Tikalsky, P.J., Roy, D.M., **Krize, T.L.**, Gottschall, C., Arjunan, P., and Rosenberger, J.L. (2001). “Influence of Portland Cement on Alkali Silica Reactivity.” Proceedings of the 80th Annual Meeting of the Transportation Research Board, January 2001.

Conference Papers Under Review

1. Alsen, D.L., Akanji, S.M., Marandi, R., Smith, M., and Cavalline, T. Hewlin, R.L.. (2024). Evaluation of a 3d Printed Single Layer Polyvinylidene Fluoride-Trifluoroethylene (Pvdf- Trfe) Sensor as a Wall Shear Stress Measuring Device in High Frequency Oscillatory Flows. International Mechanical Engineering Congress and Exposition (IMECE2024). Portland, Oregon. November 17-21, 2024.

Conference Proceedings

1. Liu, R., Mulea, C., Parfitt, K., and **Cavalline, T.L.** (2022). Proceedings of the 9th Forensic Engineering Congress. Denver, Colorado. American Society of Civil Engineers Press, Reston, VA.
2. Kim, H., Brizendine, T., Gehrig, B., Hildreth, J., Cho, C., Chen, D., Lu, N., **Cavalline, T.**, Juneja, P., and Shen, Z. (2013). Proceedings of the Fifth International Conference in Construction Engineering and Project Management (ICCEPM) 2013, Garden Grove, NC.

Other Publications

1. ASCE (2022, in press). Failure Case Studies Series: Concrete Structures. Edited by Sullivan-Green, L.E., and **Cavalline, T.L.** American Society of Civil Engineers Press. Reston, VA.
2. ASCE (2023, in development). Failure Case Studies Series: Ethics. Edited by **Cavalline, T.L.** and Sullivan-Green, L.E. American Society of Civil Engineers Press. Reston, VA.

Project Reports

1. Karimoddini, A., **Cavalline, T.L.**, Khan, M.A., Marfo, E., and Wu, T. (2024). Workflows, Implementation Tools, and Guidance for Efficient UAV-enabled Bridge Inspection. Final Report, Project FHWA/NC/2022-10, North Carolina Department of Transportation, Raleigh, NC. In final review.
2. Sabih, G., **Cavalline, T.L.**, Tempest, B.Q., Summers, C., McIntosh, M., Tafannum, T., and *Sheffield*,

- M.T.* (2024). "Investigating Thermal and Mechanical Inputs for Rigid Pavement Design in North Carolina. Final Report, Project FHWA/NC/2022-07, North Carolina Department of Transportation, Raleigh, NC. June 8, 2024.
3. **Cavalline, T.L.**, Tempest, B.Q., Doughty, S.R., and *Summers, C.J.* (2023). "Evaluation of J-Rox as SCM and Aggregate for Concrete Applications, Phase 2: Final Report." Global Sustainable Solutions. December 14, 2023.
 4. **Cavalline, T.L.** and *Jonna, R.R.* (2023). "Freeze-Thaw Durability of Concrete Containing Microspheres, Phase II Report – Part 2." CEM Innovations. September 8, 2023.
 5. **Cavalline, T.L.**, and *Sikhakolli, S.K.S.* (2023). "Freeze Thaw Durability of Concrete Containing Microspheres – Phase II Report Part 1." CEM Innovations. January 26, 2023.
 6. **Cavalline, T.L.**, Tempest, B.Q., Theilgard, P., *Dillworth, D.A.*, and *OCampo, J.* (2023). "Continuing Toward Implementation of Performance Engineered Concrete Mixtures for Durable and Sustainable Concrete." Final Report, Project FHWA/NC/2019-22, North Carolina Department of Transportation.
 7. **Cavalline, T.L.**, Smith, M., *Ellis, B.*, and Schultz, C. (2023). "Petrographic Examination and Laboratory Testing of Concrete Core Samples." Hartsfield-Jackson Atlanta International Airport, Atlanta, Georgia. Final Report submitted to Aviation Infrastructure Services, Inc. January 19, 2023.
 8. Tempest, B.Q., **Cavalline, T.L.**, *Newsome, R.*, Violette, K., and Al-Salihi, T. (2022). "Evaluating Corrosive Sites Policy for Concrete Bridges at the North Carolina Coast." Final Report, Project FHWA/NC/2019-22, North Carolina Department of Transportation. Submitted December 2022.
 9. Karimodini, A., **Cavalline, T.L.**, Smith B., and Hewlin, R. (2022). "UAV Selection Methodology and Performance Evaluation to Support UAV-Enabled Bridge Inspection." Final Report, Project FHWA/NC/2020-23, North Carolina Department of Transportation. March 15, 2022.
 10. **Cavalline, T.L.**, Tempest, B.Q., and *Summers, A.A.* (2022). "Use of J-Rox as a Supplementary Cementitious Material – Phase I Report." Final Report submitted to Global Sustainable Solutions, February 18, 2022.
 11. **Cavalline, T.L.** and Tempest, B.Q. (2021). "Performance Engineered Mixtures – FHWA Implementation Funds." Final Report, Project FHWA/NC/2019-41, North Carolina Department of Transportation.
 12. Hu, J., **Cavalline, T.L.**, Mamirov, M., and *Dey, A.* (2021). "Effective Characterization of Recycled Concrete Aggregate (RCA) for Concrete Applications." Final Report, Project 2019 P0027. American Concrete Institute Concrete Research Council.
https://www.acifoundation.org/Portals/12/xBlog/uploads/2022/7/21/CRC_2019_P0027_Effective_Character_of_RCA.pdf
 13. **Cavalline, T.L.**, Tempest, B.Q., Hunter, B.J., White, F.D., and Ange, C.M. (2020). "Post Construction Report for North Carolina Demonstration Project, Implementation of Performance Engineered Concrete Mixtures (PEM)/AASHTO PP 84." Final Report Project FHWA 2019-41, North Carolina Department of Transportation. Submitted to Federal Highway Administration, April 2020.
 14. **Cavalline, T.L.**, Tempest, B.Q., *Biggers, R.B.*, Lukavsky, A.J., *McEntyre, M.S.*, and *Newsome, R.A.* (2020). "Durable and Sustainable Concrete Through Performance Engineered Concrete Mixtures." Final Report, Project FHWA/NC/2018-14, North Carolina Department of Transportation.
 15. **Cavalline, T.L.** and Williams, W.B. (2020). "Petrographic Examination and Laboratory Testing of Concrete Core Samples." Hartsfield-Jackson Atlanta International Airport, Atlanta, Georgia. Final Report submitted to Aviation Infrastructure Services, Inc. May 1, 2020.
 16. **Cavalline, T.L.**, Fick, G., and Innis, A. (2020). "Summary Report of Agency and Industry QC Practices for Concrete Pavement." Report submitted to Iowa State University and FHWA, April 5, 2020.
 17. Whelan, M.J., **Cavalline, T.L.**, *Phillips, P.*, and Rice, C. (2019). "Improving Replacement Cost Data for NCDOT Highway Bridges." Final Report, Project FHWA/NC/2017-09, North Carolina Department of Transportation.

18. Whelan, M.J., **Cavalline, T.L.**, Alar, A., and Lane, K. (2019). "Guidelines for Prioritization of Bridge Replacement, Rehabilitation, and Preservation Projects." Final Report, Project FHWA/NC/2016-05, North Carolina Department of Transportation.
19. **Cavalline, T.L.**, Tempest, B.Q., Leach, J.W., Newsome, R.A., Loflin, G.D, and Fitzner, M.J. (2019). "Internal Curing of Concrete Using Lightweight Aggregate." Final Report, Project FHWA/NC/2016-06, North Carolina Department of Transportation. May 2019.
20. **Cavalline, T.L.**, Tempest, B.Q., Blanchard, E.H., Medlin, C.D., and Chimmula, R.R. (2018). "Improved Data for Mechanistic-Empirical Design for Concrete Pavements". Final Report, Project FHWA/NC/2015-03, North Carolina Department of Transportation. August 2018.
21. Tempest, B.Q, **Cavalline, T.L.**, and Ojo, T. (2018). "Performance of Portland Cement Concrete Containing Chemically Beneficiated High Loss On Ignition Fly Ashes With Air Entrainment." Final Report, submitted to Duke Energy. April 30, 2018.
22. **Cavalline, T.L.** (2017). "Petrographic Evaluation of Concrete Core Samples." Final Report, submitted to SKA Consulting Engineers. August 25, 2017.
23. **Cavalline, T.L.** and Williams, W.B. (2017). "Petrographic Examination and Laboratory Testing of Concrete Core Samples." Hartsfield-Jackson Atlanta International Airport, Atlanta, Georgia. Final Report submitted to Aviation Infrastructure Services, Inc. July 14, 2017.
24. Tymvios, N., **Cavalline, T.L.**, and Albergo, C. (2017). "Cost Analysis on the Reuse of Concrete Residuals." Final Report, Project FHWA/NC/2015-12, North Carolina Department of Transportation.
25. **Cavalline, T.L.** (2016). "Evaluation of Concrete Core Samples." Scott Hall, University of North Carolina at Charlotte. Final Report submitted to KSQ/Peterson. September 27, 2016.
26. **Cavalline, T.L.** (2016). "Petrographic Examination and Laboratory Testing of Concrete Core Samples." Hartsfield-Jackson Atlanta International Airport, Atlanta, Georgia. Final Report submitted to Aviation Infrastructure Services, Inc. May 26, 2016.
27. **Cavalline, T.L.** (2016). "Evaluation of Thermal Performance of Lightweight Concrete." Final report, submitted to Stalite. March 18, 2016.
28. **Cavalline, T.L.** (2016). "Final Report of Technical Assistance Project, I-85 Concrete Pavement." North Carolina Department of Transportation (NCDOT) Technical Assistance Project TA-2016-30. February 15, 2016.
29. **Cavalline, T.L.** (2016). "Final Report of Technical Assistance Project, Hardened Air Void Analysis of Concrete." North Carolina Department of Transportation (NCDOT) Technical Assistance Project TA-2016-30. February 4, 2016.
30. **Cavalline, T.L.** (2015). "Air Content Testing of Roller Compacted Concrete." Final Report, submitted to Andale Construction, Inc. November 4, 2015.
31. **Cavalline, T.L.** (2015). "Abrasion Testing of Roller Compacted Concrete." Final Report, submitted to Andale Construction, Inc. July 14, 2015.
32. **Cavalline, T.L.**, Whelan, M.J., Tempest, B.Q., Goyal, R., and Ramsey, J.D. (2015). "Determination of Bridge Deterioration Models and Bridge User Costs for the NCDOT Bridge Management System." North Carolina Department of Transportation Final Report No. FHWA/NC/2014-07.
33. **Cavalline, T.L.** and Williams, W.B. (2015). "Petrographic Examination and Laboratory Testing of Concrete Core Samples." 2013 Pavement Management Program, Hartsfield-Jackson Atlanta International Airport, Atlanta, Georgia. Final Report submitted to Boudreau Engineering, Inc.
34. **Cavalline, T.L.** (2014). "Final Report of Laboratory Testing of Concrete Cores, I-485 Interchange Concrete Pavement, I-85 Widening Concrete Pavement and Shoulder." North Carolina Department of Transportation (NCDOT) Technical Assistance Project TA-2013-15. April 28, 2014.

35. Chen, D., **Cavalline, T.**, Ogunro, V., and Thompson, D. (2014). "Development and Validation of Pavement Deterioration Models and Analysis Weight Factors for the NCDOT Pavement Management System. Part I: Windshield Survey Data." Final Report. Report No. FHWA/NC/2011-01.
36. Nicholas, T. and **Cavalline, T.** (2014). "Development and Delivery of a Concrete Masonry Design and Construction Course." Final report submitted to the National Concrete Masonry Association (NCMA), May 2014.
37. **Cavalline, T.**, Kitts, A., and *Calamusa, J.* (2013). "Durability of Lightweight Concrete Bridge Decks – Field Evaluation." Final Report, North Carolina Department of Transportation Research Project 2011-06, Report No. FHWA/NC/2011-06, February 2013.
38. Weggel, D.C., Chen, S.E., Hilger, H, Besnard, F., **Cavalline, T.**, Tempest, B., Alvey, A., Grimmer, M, and Turner, R. (2011). "Final Scientific Report, Building Materials Reclamation Program." Department of Energy (DOE) Project # DE-FG26-08NT01982, March 2011.
39. **Cavalline, T.L.** (2010). "Petrographic Examination and Laboratory Testing of Concrete Core Samples." 2010 Pavement Management Program, Hartsfield-Jackson Atlanta International Airport, Atlanta, Georgia. Final report submitted to Materials Managers and Engineers, December 2010.
40. **Cavalline, T.L.** (2007). "Petrographic Examination of Concrete Core Samples." 2007 Pavement Management Program, Hartsfield-Jackson Atlanta International Airport, Atlanta, Georgia." Final report submitted to United Consulting, September 2007.

Theses and Dissertations

1. **Cavalline, T.L.** (2012). Recycled Brick Masonry Aggregate Concrete: Use of Recycled Aggregates from Demolished Brick Masonry Construction in Structural and Pavement Grade Portland Cement Concrete. Ph.D. dissertation, University of North Carolina at Charlotte.
2. **Krize, T.L.** (1999). Influence of Cement Characteristics on Concrete Durability. Master's Thesis, The Pennsylvania State University.
3. **Krize, T.L.** (1998). Prediction of Municipal Roadway Conditions Using PAVER and Markov Models. Undergraduate Honors Thesis, The Pennsylvania State University.

Webinars

1. **Cavalline, T.L.**, Hunter, B.J., and Tempest, B.Q. "North Carolina DOT's Progress Toward Implementation of Surface Resistivity." Presented at TRB Webinar Resistivity and Concrete Durability: Why Should I Care. October 11, 2022. 280 attendees.
2. **Cavalline, T.L.** (2022). "Quality Control for Concrete Paving: A Tool for Agency and Industry." Presented at National Concrete Pavement Technology Center's Technology Tuesday webinar series. June 14, 2022. 244 attendees.
3. **Cavalline, T.L.** (2022). "Reuse of Concrete Materials" Presented at National Institute of Standards and Technology (NIST) Workshop: Fostering a Circular Economy and Carbon Sequestration for Construction Materials." Virtual. June 8, 2022. **230 participants from US, Europe, Asia, and South America.**
4. **Cavalline, T.L.** (2021). "Recycled Concrete Aggregates (RCA): The Basics." Presented as part of the National Concrete Pavement Technology Center's Technology Tuesday webinar series. May 11, 2021. 488 attendees.
5. **Cavalline, T.L.**, (2017). "Environmental Considerations in Concrete Pavement Recycling." Webinar offered nationally as part of FHWA Concrete Recycling Program. Presented three times: March 15, March 29, and May 18, 2017. Available at: <http://www.cptechcenter.org/concrete-recycling/>
6. Snyder, M.B., and **Cavalline, T.L.** (2016) "Concrete Pavement Recycling." Webinar offered nationally as part of FHWA Concrete Recycling Program. Presented five times: April 20, May 4, May 18, October 19, and November 16, 2016. Available at: <http://www.cptechcenter.org/concrete-recycling/>

7. **Cavalline, T.L.** (2016). “Durability of Concrete Pavements at Hartsfield-Jackson Atlanta International Airport: A Ten-Year Review.” Webinar “Concrete Pavement Performance at Hartsfield-Jackson Atlanta International Airport” held live May 2, 2016, and offered on-demand by American Society of Civil Engineers (ASCE) Transportation and Development Institute (TD&I).

Training Sessions and Short Courses

1. **Cavalline, T.L.** and Fonte, M. (2024). “Quality Control for Concrete Paving.” Full-day workshop presented to New York State Department of Transportation and industry stakeholders, funded by the Technology Transfer Concrete Consortium (TTCC), via the National Concrete Pavement Technology Center. Syracuse, NY, April 4, 2024.
2. **Cavalline, T.L.** and Fonte, M. (2024). “Quality Control for Concrete Paving.” Full-day workshop presented New York State Department of Transportation and industry stakeholders, funded by the Technology Transfer Concrete Consortium (TTCC), via the National Concrete Pavement Technology Center. Maspeth, Queens, New York, April 2, 2024.
3. **Cavalline, T.L.**, and Snyder, M.B. (2024). “Recycled Concrete Aggregate Workshop.” Full-day workshop presented to the Colorado Department of Transportation and industry stakeholders, funded by the Technology Transfer Concrete Consortium (TTCC), via the National Concrete Pavement Technology Center. Denver, CO. January 6, 2024.
4. **Cavalline, T.L.** and Fonte, M. (2023). “Quality Control for Concrete Paving.” Full-day workshop presented to Illinois Tollway Authority and industry stakeholders, funded by the Technology Transfer Concrete Consortium (TTCC), via the National Concrete Pavement Technology Center. Downers Grove, IL, April 18, 2023.
5. **Cavalline, T.L.** (2020). “Recycled Concrete Aggregate Workshop.” Half-day workshop presented to the Tennessee Department of Transportation and industry stakeholders, funded by the Technology Transfer Concrete Consortium (TTCC), via the National Concrete Pavement Technology Center. Nashville, TN. March 5, 2020.

Invited Presentations

Presenter unless otherwise noted. Students I advised are in *italics*.

1. **Cavalline, T.L.** (2024). “Performance Engineered Mixtures for Carolinas Concrete Infrastructure.” Carolinas Ready Mixed Concrete Association, Summer Meeting. Hilton Head, SC. June 10, 2024.
2. **Cavalline, T.L.** (2024). “Introduction to Construction Quality Assurance.” Center for Durable and Resilient Transportation Infrastructure (Du-Re Transp) University Transportation Center (UTC) Seminar. Virtual. May 21, 2024.
3. **Cavalline, T.L.** (2024). “Concrete Recycling: Basic Practices for Production and Use of Recycled Concrete Aggregate (RCA). Presented to the Ukrainian Ministry for Restoration. Virtual. April 30, 2024.
4. **Cavalline, T.L.** (2024). “Incorporating Undergraduates into Graduate Research with Meaningful Outcomes.” Best Practices for Incorporating Research into Concrete Education, Session at American Concrete Institute Spring Convention, New Orleans, LA. March 2024.
5. **Cavalline, T.L.**, *Jonna, R.R.*, Attigiobe, E., and Neuwald, A. (2024). “Microspheres for Low-Carbon Freeze-Thaw Durable Concrete.” 44th Annual Portland Cement Concrete Pavement Conference, hosted by Missouri/Kansas Chapter of the American Concrete Pavement Association. Kansas City, MO. February 22, 2024.
6. **Cavalline, T.L.** (2024). “Learning from the World Trade Center 1 and 2 Collapses,” Architectural Engineering 537, Building Performance Failures and Forensic Techniques. Pennsylvania State University. Guest Lecture, February 19, 2024.
7. **Cavalline, T.L.** and Underwood, S. (2024). “North Carolina DOT Resilience Efforts for Pavements and Associated Infrastructure.” TRB Annual Meeting Workshop #1023, “Pavement Resilience: Effects of

Extreme Flooding and Wildfire Events on Pavement Systems – Local, State, and Federal Experiences.” Transportation Research Board Annual Meeting, Washington, DC. January 7, 2024.

8. Underwood, S., (presenter) and **Cavalline, T.** (2023). “Understanding Long-Term Pavement Performance Impacts from Extreme Weather Events.” Presented to FHWA/Virginia Transportation Research Council Peer Exchange. Charlottesville, VA. December 13, 2023.
9. **Cavalline, T.L., Jonna, R.R.,** Attigiobe, E., and Neuwald, A. (2023). “Microspheres for Low-Carbon Freeze-Thaw Durable Concrete.” Iowa Better Concrete Conference. Ames, IA. November 9, 2023.
10. **Cavalline, T.L.** (2023). “Introduction to Construction Quality Assurance.” Structural Engineering and Materials Graduate Seminar Course. Virginia Tech. September 20, 2023. (virtual)
11. **Cavalline, T.L., Jonna, R.R.,** Attigiobe, E., and Neuwald, A. (2023). “Microspheres for Low-Carbon Freeze-Thaw Durable Concrete.” National Concrete Consortium. Portland, OR. September 13, 2023.
12. **Cavalline, T.L., Snyder, M.B.,** and Taylor, P.C. (2023). “Concrete Pavement Recycling: Improved Guidance to Support Practitioners.” ConPaveStruc 2023, 1st National Conference on Concrete Roads and Allied Structures. Online Conference hosted by Cement and Concrete South Africa. August 29, 2023. (460 attendees)
13. **Cavalline, T.L.,** Tempest, B.Q., Theilgard, P., *Dillworth, D.A.,* and *OCampo, J.* (2023). “Performance Engineered Concrete Mixtures for Durable, Sustainable Concrete Infrastructure: Update on Research and Pilot Projects.” NCDOT Research and Innovation Summit, March 30, 2023.
14. Khan, M., Marfo, E., Karimodini, A., *Wu, T.,* and **Cavalline, T.L.** (2023). “Inspector-In-The-Loop: UAV-Assisted Bridge Inspections.” NCDOT Research and Innovation Summit, March 30, 2023.
15. **Cavalline, T.L.,** Parfitt, M.K., Green, C.S., and Tymvios, N.J., (2023). "Failures All Around Us: Use of Student-Identified Failure Case Studies to Teach the Investigation Process." Forum on Forensic Engineering Education: Using Failure Case Studies to Teach the Investigation Process. ASCE Forensic Engineering Division, Education Committee Seminar. University of Maryland, College Park. February 24, 2023.
16. **Cavalline, T.L.** and Delatte, N.J. (2023). “Learning from the World Trade Center Collapse – Use of a Failure Case Study in a Structures and Materials Laboratory Course.” Forum on Forensic Engineering Education: Using Failure Case Studies to Teach the Investigation Process. ASCE Forensic Engineering Division, Education Committee Seminar. University of Maryland, College Park. February 24, 2023.
17. **Cavalline, T.L.** (2023). “Use of Failure Case Studies to Support UNC Charlotte’s Prospect for Success Quality Enhancement Plan.” Forum on Forensic Engineering Education: Using Failure Case Studies to Teach the Investigation Process. ASCE Forensic Education Division. University of Maryland, College Park. February 24, 2023.
18. **Cavalline, T.L.** (2022). “Recycling Concrete for Paving Applications.” 59th American Concrete Pavement Association (ACPA) Annual Meeting, December 1, 2022, Nashville, TN.
19. **Cavalline, T.L.** (2022). “Recycling Concrete Pavement into Recycled Concrete Aggregate (RCA).” Nevada Infrastructure Concrete Conference 2022, November 2, 2022, Reno, NV.
20. **Cavalline, T.L., Dey, A.,** Hu, J., and Mamirov, M. (2022). “Recycled Concrete Aggregate Characterization Using a Portable Handheld XRF Device.” ACI Fall 2022 Convention. Dallas, TX. October 23, 2022.
21. **Cavalline, T.L.** (2022). “Performance of Concrete with Portland Limestone Cement (Type II) and other Sustainable and Recycled Materials.” ACI Carolinas Chapter, Summer Seminar on “Eco-Friendly Concrete,” July 14, 2022. Concord, NC.
22. **Cavalline, T.L.** (presenter) and Underwood, B.S. (2022). “Concrete Pavement Resilience Research and NCDOT Resilience Efforts,” Workshop on Resilient Pavements, 11th International Conference on Managing Pavement Assets. Chicago, Illinois. June 9, 2022.

23. Karimodini, A. and **Cavalline, T.L.** (2022). Panel Member, 5 sessions – Structural Inspection. United States Department of Transportation (USDOT) Federal Highway Administration (FHWA) Unmanned Aerial Systems (UAS) Regional Workshop – South Region. May 3-4, 2022.
 - i. “Unique Challenges for Structural Inspection”
 - ii. “UAS in Structural Inspection: Technology Review”
 - iii. “Structural Inspection: Innovative and Emerging Solutions for Structure Inspection”:
 - iv. “Structural Inspection: How UAS Changed the Workflow for Structure Inspections”
 - v. “Structural Inspection: Procedural Challenges & Next Steps for Success”
24. Cavalline, T.L. (2022). “Introduction to Construction Quality Assurance.” CIVL 6692 Civil & Environmental Engineering Seminar. University of New Haven. April 15, 2022. (virtual)
25. **Cavalline, T.L.** (2022). “Use of Construction Byproducts in Concrete Paving Projects.” Presented at the National Concrete Consortium, Spring 2022 meeting. Nashville, TN. April 5, 2022.
26. Hu, J., and **Cavalline, T.L.** (Co-presenters) (2022). “Characterization of Recycled Concrete Aggregate (RCA) and Use of RCA in Concrete Applications.” Presented at the American Concrete Institute (ACI) Spring 2022 Convention, Committee 555. March 28, 2022.
27. **Cavalline, T.L.** (2022). “Performance Engineered Mixtures for Contractors.” Iowa Concrete Paving Association, 58th Annual Workshop. Des Moines, IA. February 3, 2022.
28. **Cavalline, T.L.** (2022). “Resilience: Concrete Pavement Research.” Workshop 1437, Progress Toward More Resilient Pavements. Transportation Research Board 101st Annual Meeting, Washington, D.C. January 13, 2022.
29. **Cavalline, T.L.** (2022). “Quality Control for Concrete Paving: A Tool for Agency and Industry.” Session 1206, Quality Control for Concrete Paving. Transportation Research Board 101st Annual Meeting, Washington, D.C. January 11, 2022.
30. **Cavalline, T.L.** and Tempest, B.Q. (2021). “NCDOT’s Movement Toward Performance Engineered Concrete Mixtures.” American Council of Engineering Companies (ACEC)/North Carolina – NCDOT Joint Transportation Conference. Raleigh, NC, December 14, 2021.
31. **Cavalline, T.L.** (2021). “Recycled Concrete Aggregates for Concrete Paving Projects: New Guidance and Recent Case Studies.” Presented at the American Concrete Institute (ACI) Fall 2021 Convention (virtual), Committee 325 Mini-Session. October 19, 2021.
32. Smith, G.L. and **Cavalline, T.L.** (2021). “Quality Control for Concrete Paving: A Tool for Agency and Industry.” Presented to Federal Highway Administration (FHWA) Concrete Pavement and Materials (CP&M) Technical Feedback Group. October 13, 2021.
33. **Cavalline, T.L.**, and Tempest, B.Q. (2021). “Performance Engineered Concrete Mixtures: Pilot Project Implementation for Pavements and Structures.” Presented at NCDOT Research and Innovation Summit, October 5, 2021.
34. **Cavalline, T.L.**, Hunter, B.J., and Tempest, B.Q. (2021). “Movement Towards PEM: North Carolina DOT’s Approaches and Accomplishments.” Presented at Workshop on Performance Engineered Mixtures at the International Society for Concrete Pavements (ISCP) 12th International Conference for Concrete Pavements.” September 29, 2021.
35. **Cavalline, T.L.** and Tempest, B.Q. (2021). “Performance Engineered Mixtures for Durable, Sustainable Concrete – Laboratory Research, Development of Shadow Specifications, Implementation on Pilot Projects.” Presented to NCDOT Division 14 personnel and CM-GC Project Team – Haywood County Bridge Project. July 27, 2021.
36. *Sheffield, M.*, **Cavalline, T.L.** (presenter), and Dean, G. (2021). “Contractor Survey – Concrete Overlays.” Presented to the North Carolina Rigid Pavement Committee Meeting. May 13, 2021.
37. **Cavalline, T.L.**, Fick, G.J., and Innis, A. (2021). “Quality Control for Concrete Paving: A Tool for Agency and Industry.” Presented to National Concrete Consortium Spring 2021 Meeting. April 13, 2021.

38. Karimodini, A. (lead presenter), **Cavalline, T.L.** (co-presenter), Hewlin, R.L., and Smith, B. (2020). "Developing a Safe and Cost-effective Physics-based Flight Control Methodology for a UAV-enabled Bridge Inspection." Presented to the NCDOT UAS Steering Committee Meeting, November 30, 2020.
39. **Cavalline, T.L.**, Fick, G.J., and Innis, A. (2020). "Quality Control for Concrete Paving: A Tool for Agency and Industry." Presented to American Concrete Pavement Association 2020 Annual Meeting. Session pre-recorded on November 6, 2020 to be made available on demand during online meeting.
40. **Cavalline, T.L.** (2020). "Targeted Pavement Overlay Solutions (TOPS)." Presented to North Carolina Rigid Pavement Committee. November 5, 2020.
41. **Cavalline, T.L.**, Tempest, B.Q., *Biggers, R.B.*, *McEntyre, M.S.*, Lukavsky, A.J., and *Newsome, R.A.* (2020). "Proposed Specifications for Performance Engineered Concrete." Presented to the NCDOT Virtual Research and Innovation Summit. October 13, 2020.
42. Mahama, E.K. (presenter), Karimodini, A., **Cavalline, T.L.**, Hewlin, R.L., and E. Smith. (2020). "UAS-Enabled Bridge Inspection: Challenges and Possible Solution." Presented to the NCDOT Virtual Research and Innovation Summit. October 13, 2020.
43. **Cavalline, T.L.**, Tempest, B.Q., and Hunter, B.J. (2020). "Movement Towards PEM: North Carolina DOT's Approaches and Accomplishments." Performance Engineered Mixtures Pooled Fund Industry Technical Advisory Committee Meeting. July 22, 2020.
44. **Cavalline, T.L.**, Tempest, B.Q., and Hunter, B.J. (2020). "Movement Towards PEM: North Carolina DOT's Approaches and Accomplishments." Performance Engineered Mixtures State Agency Members Meeting. June 11, 2020.
45. **Cavalline, T.L.** (2019). "Manufactured Sand – Impacts on Concrete Pavement Design Inputs, Construction, and Predicted Performance." Iowa Better Concrete Conference. Iowa State University, Ames Iowa. November 14, 2019.
46. **Cavalline, T.L.** (2019). "Guidance to Support Concrete Recycling." Iowa Better Concrete Conference. Iowa State University, Ames Iowa. November 14, 2019.
47. Hu, J. (co-presenter), **Cavalline T.L.** (co-presenter), Mamirov, M., and *Dey, A.* (2019). "Characterization of Recycled Concrete Aggregate for Concrete Applications." American Concrete Institute Fall 2019 Convention, Cincinnati, Ohio, October 21, 2019.
48. **Cavalline, T.L.**, Snyder, M.B., Cackler, T., and Taylor, P.C. (presenter) (2019). "Guidance for Increasing the Use of Recycled Concrete Pavement Materials." American Society of Civil Engineers (ASCE) Transportation & Development Institute (T&DI) International Airfield & Highway Pavements Conference (Pavements 2019). Chicago, Illinois. July 24, 2019.
49. **Cavalline, T.L.**, Tempest, B.Q., *Biggers, R.B.*, Lukavsky, A., *Newsome, R.*, and *McEntyre, M.* (2019). "Research to Support NCDOT's Movement Toward Performance Engineered Concrete Mixtures." Presented at Federal Highway Administration Mobile Concrete Technology Center Open House. May 15, 2019.
50. *Biggers, R.B.* (student presenter), Lukavsky, A.J., *McEntyre, M.*, **Cavalline, T.L.**, and Tempest, B.Q. (2019). "Durable and Sustainable Concrete Through Performance-Engineered Concrete Mixtures: Preliminary Results and Findings." NCDOT Research and Innovation Summit. Greensboro, NC. May 7, 2019.
51. **Cavalline, T.L.**, Tempest, B.Q., Blanchard, E.W., Medlin, C.D., and Chimmula, R.R. (2019). "Impact of Local M-EPDG Calibration Using Sustainable Materials." NCDOT Research and Innovation Summit. Greensboro, NC. May 7, 2019.
52. **Cavalline, T.L.**, and Ley, M.T. (2019). "Entrained Air Void Systems for Durable Concrete." Presented at the ACI Carolinas Chapter Spring Seminar. Concord, NC. April 17, 2019.
53. **Cavalline, T.L.** (2019). "Implementing Performance Specifications for Concrete Durability." Presented

at the ACI Carolinas Chapter Spring Seminar. Concord, NC. April 17, 2019.

54. **Cavalline, T.L.** (2018). "Performance Engineered Concrete Mixtures – from Shadow Project Toward Implementation." North Carolina Concrete Pavement Conference. Greensboro, NC. October 29, 2018.
55. **Cavalline, T.L.** (2018). "Recycled Concrete Aggregates: Improving the Sustainability of Our Highway Infrastructure." Presented at the American Concrete Institute (ACI) Fall 2018 Convention, Las Vegas, NV. October 15, 2018.
56. **Cavalline, T.L.** (2018). "Constructing a Quality Product – Balancing Risk (and Reward) in Changing Times." Presented to the National Concrete Consortium Fall 2018 Meeting, Saratoga Springs, NY. September 18, 2018.
57. **Cavalline, T.L.** (2017). "Implementing Performance Specifications for Durability." Alaska Concrete Summit. Anchorage, AK. November 7, 2017.
58. **Cavalline, T.L.** (2017). "Concrete Recycling in Pavement Applications – Update on the FHWA Concrete Recycling Initiative." Presentation to the National Concrete Consortium, Minneapolis, MN. September 20, 2017.
59. **Cavalline, T.L.** (2017). "Curing: Methods, Materials, Guidance, and "Who's Responsible."" ACI Carolinas Spring Seminar, Concord, NC. May 23, 2017.
60. **Cavalline, T.L.** (2016). "Concrete Recycling in Pavement Applications – Update on the FHWA Concrete Recycling Initiative." 2016 North Carolina Concrete Pavement Conference. Sponsored by American Concrete Pavement Association, Southeast Chapter. Durham, NC. November 18, 2016.
61. **Cavalline, T.L.** (2016) "What I Wish I Knew: Transition into a Faculty Member" Panelist for Panel Discussion. American Concrete Institute (ACI) Convention. Philadelphia, PA. October 24, 2016
62. **Cavalline, T.L.** (2016). "Concrete Recycling – Use of Recycled Concrete Aggregate (RCA)." ACI Carolinas Fall Seminar, Concord, NC. September 28, 2016.
63. **Cavalline, T.L.** (2016) "Learning from the World Trade Center Collapse – Use of a Failure Case Study in a Structures and Materials Laboratory" Presented at Workshop U471K "Using Failure Case Studies to Teach Engineering and Ethics," at the 124th American Society for Engineering Education (ASEE) Annual Conference and Exposition (New Orleans, LA), Sunday, June 26, 2016.
64. **Cavalline, T.L.** (2016) "Use of Failure Case Studies to Meet Objectives of UNC Charlotte's Quality Enhancement Plan" Presented at Workshop U471K "Using Failure Case Studies to Teach Engineering and Ethics," at the 124th American Society for Engineering Education (ASEE) Annual Conference and Exposition (Seattle, WA), Sunday, June 26, 2016.
65. **Cavalline, T.L.** (2015) "Entrained Air Void Systems for Durable Concrete" ACI Carolinas Spring Seminar, October 7, 2015
66. **Cavalline, T.L.** (2015) "Use of Failure Case Studies to Meet Objectives of UNC Charlotte's Quality Enhancement Plan" Presented at Workshop U471G "Using Failure Case Studies to Teach Engineering and Ethics," at the 122th American Society for Engineering Education (ASEE) Annual Conference and Exposition (Seattle, WA), Sunday, June 14, 2015.
67. **Cavalline, T.L.**, Boudreau, R.L., Watkins, Q., Freeman, G.B., and Williams, W.B. (2015). "Durability of Concrete Pavements at Hartsfield-Jackson Atlanta International Airport – A Ten-Year Review." Presented at the 2015 ASCE T&DI International Airfield and Highway Pavements Conference. Miami, FL, June 7-10, 2015.
68. **Cavalline, T.L.** "TRB Concrete Materials Section and AASHTO Collaboration to Promote Funding of Concrete Research." Presented to the National Concrete Consortium, Spring 2015 meeting. Reno, NV. April 23, 2015.
69. **Cavalline, T.L.** "Use of Failure Case Studies to Meet Learning Objectives in Structures & Materials Laboratory at UNC Charlotte." Presented at Workshop U464H "Using Failure Case Studies to Teach

Engineering and Ethics,” at the 120th American Society for Engineering Education (ASEE) Annual Conference and Exposition (Atlanta, GA), Sunday, June 23, 2013.

Professional Meeting Papers, Workshops

1. Special Session organizer, IABMAS 2018, Melbourne, Australia. “SS13 – Bridge deterioration modeling and probabilistic maintenance needs forecasting.” Organized by Goyal, R., Whelan, M.J., and **Cavalline, T.L.**

HONORS AND AWARDS

- 2023 William States Lee College of Engineering Scholar Award
- 2022 American Concrete Pavement Association (ACPA) Marlin J. Knutson Award for Technical Achievement
- 2020 Best Paper Award, ASTM Advances in Civil Engineering Materials
- Nominee, AASHTO High Value Research Program (2021) – Durable and Sustainable Concrete through Performance Engineered Concrete Mixtures (NCDOT Research Project 2018-14)
- Nominee, AASHTO High Value Research Program (2013) – Durability of Lightweight Concrete Bridge Decks – Field Evaluation (NCDOT Research Project 2011-06)
- Maxheim Fellowship, UNC Charlotte College of Engineering, \$5,000
- American Society of Engineering Education (ASEE) 2015 Best Paper Award, Engineering Technology Division
- William States Lee College of Engineering Undergraduate Award in Teaching Excellence, 2014 Recipient
- Member of the Year Award (2010), International Concrete Repair Institute (ICRI) Carolinas Chapter
- Bonnie Cone Fellowship (\$15,000), awarded January 2009, to support release time to facilitate progression in the Ph.D. Program in Infrastructure and Environmental Systems at UNC Charlotte.
- UNC Charlotte Civil & Environmental Engineering Outstanding Graduate Student Award, April 2012
- Honoree, UNC Charlotte International Women’s Day Celebration (2010). Nominated for establishing the Women in Construction (WIC) Club and promoting an inclusive environment for women students in the Department of Engineering Technology and Construction Management.
- Media Cybernetics 2006 Image Contest, Honorable Mention, “Analysis of Bond Failure of an Epoxy Coating Applied to a Concrete Floor Slab.”

SERVICE

Professional and Scholarly Organizations

Service on Federal-Level Research Panels and Committees

1. Member, FHWA Concrete Pavement and Materials Technical Feedback Group. Coordinating with FHWA, our team is developing, facilitating, and summarizing a series of meetings with key state highway agency representatives, academics, and industry to help inform and guide the FHWA’s policies and programs for concrete pavements. Meetings attended were as follows:
 - i. June 21-22, 2023, Minneapolis, MN
 - ii. November 17-18, 2022, Austin, TX.
 - iii. May 10-11, 2022, Chicago, IL.
2. Member, Federal Highway Administration (FHWA) Every Day Counts (ED6) Innovation Deployment Team for Targeted Pavement Overlay Solutions. (2020-2022)

3. Synthesis Panel Member, National Cooperative Highway Research Program (NCHRP) Synthesis 52-06, "Agency Inspection and Monitoring of Quality Control Plans for Use in Administering Quality Assurance Specifications." (2020-2023)
4. Technical Panel Member, National Cooperative Highway Research Program (NCHRP) Project 10-108, "Manual for Incorporating NDT in Quality Assurance." (2019-2022)
5. Technical Panel Member, National Cooperative Highway Research Program (NCHRP) Project 10-103, "Improving Guidance of AASHTO R 80 / ASTM C1178 for Alkali-Silica Reactivity (ASR) Potential and Mitigation." (2018-2023)
6. Technical Panel Member, Innovative Pavement Research Foundation (IPRF) Project No. FAA-01-G-002-04-6, "Lithium Admixtures and Early Age Properties of Production Concrete."

Transportation Research Board (TRB)

- TRB Technical Activities Council (TAC) Chair (April 2025 to April 2028)
- TRB AK000 Transportation Infrastructure Group Chair (April 2022 to April 2025)
- TRB Technical Activities Council Representative on the Editorial Board of Transportation Research Record: Journal of the Transportation Research Board (2023-present)
- Editor in Chief Search Committee Member - Transportation Research Record: Journal of the Transportation Research Board (2023-present)
- TRB AF000 Design and Construction Group, Member (April 2015 to April 2021)
- Paper Awards Subcommittee - Responsible for reviewing submissions for annual paper awards and planning of technical sessions. (2015-2022)

- TRB Committee AFN20, "Properties of Concrete" (now AKM60)
Chair (April 2009 to April 2015) and Member (2001 – 2019)
 - Responsible for planning of technical sessions, workshops, calls for papers, and committee meetings at the TRB Annual Meetings (2010-present).
 - Coordinated paper reviews for AFN20 (2010-present) for TRB Annual Meetings.
 - Coordinated AFN20 participation as co-sponsor of the First International Conference in North America on Nanotechnology in Cement and Concrete, Irvine, CA, May 5-7, 2010.
 - Worked with committee members to draft Research Needs Statements for TRB.
 - Session Organizer for Committee AFN20, Properties of Concrete - organized two to three sessions per annual meeting from 2010 through 2015

- TRB Committee AFN30, "Durability of Concrete" (now AKM70)
Member (April 2017 to present)
 - Performed paper reviews and session planning for TRB Annual Meetings.
 - Invited speaker, webinar "Resistivity and Concrete Durability: Why Should I Care?" (scheduled for Fall 2022).

- TRB Committee AFN00, "Concrete Materials Section" (Now AKM00)
Member (April 2009 to April 2015), At-Large Member (Sept 2019 to April 2023)
 - Performed strategic planning for Concrete Materials Section of Transportation Research Board, along with five Chairpersons of other TRB Concrete Committees and the Section Chair.
 - Coordinated three webinars in conjunction with other Concrete Section Chairs.
 - Represented the Concrete Materials Section at the TRB Strategic Realignment Meeting, May 2019.

- TRB Committee AKC30, "Quality Assurance Management"
Member (April 2021 to April 2027)
 - Paper reviewer for annual meetings
 - Workshop co-coordinator and facilitator, Pavement Construction Quality: Concerns from the Contractor

Workshop Coordinator for Concrete Section, TRB Annual Meetings (2010 to 2021) – Developed workshop description and program in conjunction with other Concrete Section and Construction Section Chairs, led recruitment of speakers.

Year	Workshop Title	Date
2022	Pavement Construction Quality: Concerns from the Contractor	Jan 9, 2022
2016	Use of Sensors in Highway Concrete Applications	Jan 10, 2016
2015	Emerging and Implementation-Ready Technologies to Control Cracking of Concrete Transportation Infrastructure	Jan 11, 2015
2014	Concrete Research for Transportation Applications: Celebrating Our Legacy and Anticipating our Future	Jan 14, 2014
2013	Service Life Modeling of Concrete Elements	Jan 13, 2013
2012	Internal Curing of Concrete	Jan 22, 2012
2011	Sensor Technology in Concrete Materials	Jan 23, 2011
2010	Performance-Based Specifications in Current Concrete Practice	Jan 10, 2010

- Workshop Moderator, TRB Annual Meeting

Year	Session Title	Date
2022	Pavement Construction Quality: Concerns from the Contractor	Jan 9, 2022
2015	Emerging and Implementation-Ready Technologies to Control Cracking of Concrete Transportation Infrastructure	Jan 11, 2015
2010	Performance-Based Specifications in Current Concrete Practice	Jan 10, 2010

- Workshop Panelist, TRB Annual Meeting

Year	Session Title	Date
2015	Hitting the Ground Running: Choosing and Navigating a Successful Career Path – Workshop for Young and New Transportation Professionals.	Jan 11, 2015
2014	Hitting the Ground Running: Choosing and Navigating a Successful Career Path – Workshop for Young and New Transportation Professionals	Jan 12, 2014

- Session Moderator, TRB Annual Meeting

Year	Session Title	Date
2021	Concrete Strategies for Career Development: A Discussion of Young Professional Opportunities in Concrete and Construction	January 27, 2021
2016	Innovations in Concrete Properties Technology	Jan 8, 2016
2015	1) Concrete Properties: Recent Advancements in Materials and Testing 2) Emerging and Implementation-Ready Technologies to Control Cracking of Concrete Transportation Infrastructure, Part 1 3) Innovations in Concrete Materials and Test Methods	Jan 12, 2015
2014	1) Concrete Properties: Research on Concrete Used in Bridge Applications, 2) Testing and Evaluation of Concrete Properties: Something Old, Something New	Jan 13, 2014, Jan 15, 2014
2013	Concrete Properties: Recent Development in Testing, and Concrete Properties: Current Research and Recent Advances.	Jan 14, 2013
2012	Concrete Properties: Recent Advancements	Jan 23, 2012
2011	Recent Innovations in Concrete: Materials, Construction, Testing, Performance, and Durability	Jan 24, 2011
2010	Properties of Concrete: Advances in Test Methods and Procedures	Jan 12, 2010

International Society of Concrete Pavements (ISCP)

- Board of Directors (August 2022 – January 2025)
- Member, Technology Transfer Committee (2024-present)
- Conference Steering Committee, 13th International Conference on Concrete Pavements (2022-2024), Minneapolis, Minnesota (August 24-29). Responsible for organizing Student Competition.
- Judge, Student Competition, 12th International Conference on Concrete Pavements (2018).

National Concrete Consortium (NC²)

- Executive Committee – Academia Representative (one position for academia on this national board) April 2021-April 2026.

American Concrete Institute (ACI)

- Member Educational Activities Committee (EAC) (Fall 2019- Spring 2025)
- Board of Directors for Carolinas Chapter (2017 – 2020)

- Tri-Chair, ACI National Convention, Raleigh Fall 2020
- Member of National Organization (2009 – present) and Member of Faculty Network (2009 – present)
- Committee ACI 555, Concrete with Recycled Materials, Chair (2023-2026), Voting Member and Secretary (2021-2023)
 - Subcommittee ACI 555-B, Removal and Reuse of Hardened Concrete - Chair
 - Lead Member responsible for development of new ACI 555 document, "Assessment and Removal Methods"
- Committee ACI 201, Durability of Concrete (voting member, 2021-2024)
 - Subcommittee ACI 201-J, Chemical Attack of Concrete - Chair
 - Lead Member responsible for revision of Chapter 7 of ACI 201.2R-16, Chemical Attack of Concrete, and providing input for ACI 321 Durability Code from this chapter.
 - Task Force Member, Michael Thomas Concrete Durability Award
- Committee ACI 121 Quality Assurance (2018-2024, Voting member 2021-present)
 - Working with volunteer team to rewrite primary committee document
- Committee ACI 325 Pavements (Voting member 2024-present)
- Member of Committee on Nominations (2018, 2024)
- Associate Member of ACI 242 Alternative Cements
- Associate Member of ACI 325 Pavements
- Committee ACI S801 Student Competitions (2019-2023), voting member, associate member (2023-present)
- Mentored student competition teams for American Concrete Institute (ACI) Concrete Construction Competition, Fall 2012-2019. In this international competition typically including 30 to 50 teams, UNC Charlotte teams I mentored achieved awards as follows:
 - Fall 2018 – 1st place (tied with UGA)
 - Fall 2017 – 3rd place
 - Fall 2016 – 3rd place
 - Fall 2015 – 1st place
 - Fall 2014 – 7th place (team 1) and 9th place (team 2)
 - Fall 2013 – 1st place (co-mentored with Dr. John Hildreth)
- Mentored student competition teams for American Concrete Institute (ACI) FRP Beam Competition (Spring 2015) and Concrete Mortar Workability Competition (Fall 2016)
- Judge, Student Competitions
 - Fall 2021 – Concrete Sustainability Competition
 - Spring 2021 – Concrete Solutions Competition
 - Spring 2019 – Concrete Sustainability Competition
 - Spring 2021 – Concrete Solutions Competition
- Faculty Nominator for four ACI Foundation fellowship and scholarship recipients:
 1. Isaac Oyawoye, PhD in Civil Engineering (advisor – Dr. Tara Cavalline), ACI Barbara S. and Calvin W. McCall Fellowship, 2024-2025
 2. Ross Newsome, MS in Construction and Facilities Management (advisor – Dr. Tara Cavalline) ACI Barbara S. and Calvin W. McCall Fellowship, 2019-2020
 3. Joseph Ocampo, MS in Construction and Facilities Engineering (advisor – Dr. Tara Cavalline) ACI Graduate Scholarship (2020-2021)
 4. David Scott, PhD in INES (advisor – Dr. Shen-En Chen), ACI Barbara S. and Calvin W. McCall Fellowship, 2017-2018
 5. Colby Hietbrink, MS in Civil Engineering (advisor – Dr. Matthew Whelan), ACI Presidents' Fellowship, 2011-2012

American Society of Civil Engineers (ASCE)

- Member of Forensic Engineering Division – Education Committee
- Migrated Failure Case Studies Website to UNC Charlotte servers (2017)

- Co-editor of “Failure Case Studies – Concrete Structures” and “Failure Case Studies – Ethics Issues” in development.
- ASCE Forensic Engineering Division 10th Congress (Nov 1-4, 2024), Seattle, WA
 - Congress Steering Committee, Member
 - Co-editor, 10th Annual Forensic Engineering Congress Proceedings
 - Technical Program Committee, Member
 - Forensic Student Competition Subcommittee, Member and Judge
- ASCE Forensic Engineering Division 9th Congress (November 4-7, 2022), Denver, CO
 - Congress Steering Committee, Member
 - Co-editor, 9th Annual Forensic Engineering Congress Proceedings
 - Technical Program Committee, Member
 - Forensic Student Competition Subcommittee, Member and Judge
- ASCE Forensic Engineering Division 8th Congress (November 29-December 2, 2018), Austin, TX
 - Technical Program Committee, Member
 - Session Moderator Session D-3 “Natural Disaster I – Earthquake” and Session C-6 “Performance of Concrete Materials/Structures”

International Concrete Repair Institute (ICRI)

- ICRI National Member (2004-2006, 2007-2016)
- ICRI Carolinas Chapter
 - President of Carolinas Chapter in 2015.
 - Also served as Vice President (2014), Secretary (2013), Treasurer (2012), Board of Directors (2007 –2012).
 - Member of Program Committee (2007 – present), assist with development of technical program for two to three conferences per year.
 - Delegate, Carolinas Chapter, ICRI National Convention, Palm Springs, CA, (November 2012) and Kansas City, MO (November 2014)
- As Program Committee Member/Chair, Board Member, and Officer, assisted in organizing program for the following events for the ICRI Carolinas Chapter. For each event, typically responsible for aiding in development of program, recruitment of one or more speakers, and coordination of presentation topics to meet objectives of event.

Season / Year	Event Title	Location	Date
Fall 2015	Fall 2015 Convention, “Concrete Repair: Back to Basics”	Wilmington, NC	Oct 22-24, 2015
Spring 2015	Spring 2015 Conference, “Meeting the Challenges & Opportunities of Design of Today’s Civil Structures”	Charlotte, NC	May 14-16, 2015
Fall 2014	Fall 2014 Convention, “Repairs in the Marine Environment,”	Mt. Pleasant, SC	Oct 16-18, 2014
Spring 2014	Spring 2014 MegaDemo, “Showcasing New Technologies in Concrete Evaluation, Repair, and Protection”	Raleigh, NC	May 21-22, 2014
Fall 2013	Fall 2013 Convention, “Metals in Concrete Repair”	Mt. Pleasant, SC	Oct. 10-12, 2013
Spring 2013	Spring 2013 Conference, “Corrosion”	Durham, NC	Mar 14-15, 2013
Fall 2012	Fall 2012 Convention, “Protecting and Extending the Service Life of Concrete”	Wilmington, NC	Oct 11-13, 2012
Summer 2012	Summer 2012 Conference, “Concrete in Heavy Industrial Applications”	Charlotte, NC	June 14-15, 2012
Spring 2012	Spring 2012 Conference, “Aging Infrastructure: State of the Highways and Bridges”	Durham, NC	March 8-9, 2012
Fall 2011	Fall 2011 Convention, “Masonry: Repair vs. Restoration”	Pinehurst, NC	Oct 20-22, 2011
Spring 2011	Spring 2011 MegaDemo, “Concrete Repair: Innovative Technologies and Collaborative Solutions”	Greensboro, NC	May 5-6, 2011
Fall 2010	Fall 2010 Convention, “Take the LEED in Concrete Repair	Charleston, SC	Oct 7-9, 2010

Spring 2009	Spring 2010 Conference, “Aesthetics in Concrete Repair,” ICRI National Convention – hosted by Carolinas Chapter	Myrtle Beach, NC	April 14-16, 2010
Fall 2009	Fall 2009 Convention, “Historical Restoration,”	Charleston/Mt. Pleasant, SC	Oct 8-10, 2009
Spring 2009	Spring 2009 Conference, “Structural Strengthening: Design & Implementation,”	Durham, NC	March 26-27, 2009

American Society of Engineering Education (ASEE)

- Member (2013, 2015)

Other Professional Memberships and Activities

Editorial Roles:

- TRB Technical Advisory Committee Liaison, Transportation Research Record (2023-2025)
- Associate Editor – Transportation Research Record (2021-present)
- Associate Editor – ACI Materials Journal (March 2024-March 2026)
- Editorial Board Member – ASTM Advances in Civil Engineering Materials (2019-present)
- Editorial Board Member – International Journal of Pavement Engineering (2023-present)
- Associate Editor – Innovative Infrastructure Solutions (2022-2023)
- Handling Editor – Transportation Research Record (2019-2021)

Invited reviewer for the following journals:

- ASTM Advances in Civil Engineering Materials (2016, 2019, 2020, 2021, 2022, 2023)
- ACI Materials Journal (2017, 2019)
- Transportation Research Record (2019, 2020, 2021, 2022, 2023)
- Construction and Building Materials (2013, 2015, 2016, 2017, 2019, 2020, 2021, 2022, 2023)
- Structure and Infrastructure Engineering (2019, 2020, 2021, 2022, 2023)
- Journal of Infrastructure Systems (2017)
- ASCE Journal of Materials in Civil Engineering (2021, 2022, 2023)
- ASCE Journal of Transportation Engineering, Part B: Pavements (2022)
- Innovative Infrastructure Solutions (2022, 2023)
- Materials (2014, 2016, 2017)
- Buildings (2016, 2020, 2021)
- Applied Sciences (2017)
- Minerals (2017)
- Recycling (2022)
- Crystals (2021)
- International Journal of Pavement Engineering (2016, 2019, 2020, 2021, 2022, 2023))
- International Journal of Environmental Research and Public Health (2016)
- International Journal of Concrete Structures and Materials (2014, 2016)
- International Journal of Construction Management (2020, 2021)
- Korean Society of Civil Engineers (KSCE) (2014, 2016, 2017, 2019)
- American Society of Engineering Education (2013)
- Journal of Sustainable Cement-Based Materials (2019)
- Road Materials and Pavement Design (2019, 2022)
- Cement and Concrete Composites (2019)
- Journal of Structural Integrity and Maintenance (2020)
- Advances in Materials & Processing Technologies (2022)
- International Journal of Concrete Structures and Materials (2016)
- Advances in Cement Research (2023)
- Road Materials and Pavement Design (2023)
- Engineered Science (2023)

Invited Reviewer for other Professional Entities and Conferences:

- Reviewer of promotion package for Associate Professor, Department of Civil and Environmental Engineering University of Temple (2024)
- Reviewer of promotion package for Associate Professor, Department of Construction Management, Colorado State University (2024)

- Reviewer of promotion package for Professor, School of Science and Engineering, University of Missouri – Kansas City (2024)
- Reviewer of promotion package for Associate Professor, Department of Construction Technology and Management, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana (2023)
- Reviewer of promotion package for Associate Professor, Department of Civil Engineering at a university located in Alabama, (2022)
- Reviewer of promotion package for Associate Professor of Practice, Department of Engineering Technology at a university located in Texas, (2022)
- National Science Foundation (2018)
- National Science Foundation SBIR program (2019, 2020, 2023)
- US-Israel Binational Science Foundation proposal (2020)
- TranSET University Transportation Center (UTC) internal proposals (2017-2021)
- First International Conference in North America on Nanotechnology in Cement and Concrete, Irvine, CA, May 5-7, 2010.
- 9th International Conference on Bridge Maintenance, Safety and Management (IABAMAS) 2018 Co-organizer of special session, SS13 – Bridge deterioration modeling and probabilistic bridge maintenance needs forecasting (Raka Goyal, Matthew J. Whelan, Tara L. Cavalline), Melbourne, Australia, July 9-13, 2018.
- ACI Special Publication for Committee ACI 345 (2021)
- U.S.-Israel Binational Science Foundation application (2021)
- Construction Planning, Equipment, and Methods, 10th edition by Puerifoy, Schexnayder, Schmitt, and Shapira (McGraw Hill)
- Tau Beta Pi National Engineering Honor Society, Member
- Chi Epsilon Civil Engineering Honor Society, Member

Outreach and Community Service

- Guest lecturer – INES 8104 Advanced Infrastructure Systems. “Performance Engineered Concrete Mixtures for Airfield and Highway Applications.” Monday, September 25, 2023
- Guest lecturer – INES 8690 INES Seminar. “Introduction to Construction Quality Assurance.” Wednesday, September 20, 2023.
- Moderator, “Women in Engineering Alumni Panel,” UNC Charlotte William States Lee College of Engineering event for Women’s History Month. Thursday, March 24, 2022.
- Selected as “Project Scientist Superstar” by non-profit group aiming to encourage girls to pursue STEM education and careers. Presented “Introduction to Civil Engineering and Concrete,” to approx. 40 elementary school students attending Project Scientist Academy at Queens University, July 30, 2013, July 10, 2014, July 28, 2015, and August 4, 2016
- Presented on ETCM Programs to UCOL1200 First Year Seminar class of undeclared major students, August 31, 2015, September 13, 2016.
- Presented on ETCM Programs to ENGR 1201, September 6, 2016.
- Served on ICRI Carolinas Chapter’s volunteer workforce at Hospice and Palliative Care Charlotte Region (HPCCR). Repaired several masonry walls. May 14, 2015.
- Served as faculty representative during Olympic High School visit, February 6, 2015.
- “Civil Engineering Technology” presentation to UNC Charlotte Aspire! Campers (approximately 30 students) during “Undercover University” nights, July 24, 2012 and July 30, 2013.
- Presented “A Day in the Life of an Engineer.” Teaching Engineering to Counselors and Teachers (TECT) Conference, University of North Carolina at Charlotte, July 2007 and July 2008.
- Presented “A Day in the Life of an Engineer.” Ninth-grade classes at Olympic High School, Charlotte, NC. September 2007.
- Served as faculty representative at Explore! Open House, October 19, 2013.
- Served as faculty representative NCDOT High School Career Days, Cabarrus Arena, May 23, 2012.
- Served as faculty representative during Cabarrus County Engineering camp visit, June 26, 2012 and July 9, 2014.

Major Committee Assignments

University level

- University Faculty Academic Policy and Standards Committee (FAPSC) (2022-present)
- New Faculty Mentoring Initiative, ADVANCE Faculty Affairs and Diversity Office, participant (mentor) 2022-2023.
- Atkins Library Faculty Council Collection Review Task Force (College of Engineering Representative, 2019-2020)
- Reviewer, University Honors Program (2018), applications for Crown Scholars, Albert Scholars, and University Honors Scholars awards.

College level

- Chair, Search Committee for Associate Dean of Academic Affairs, William States Lee College of Engineering (2023)
- College of Engineering Ambassador – Niner Nation Gives Campaign (Spring 2021, Spring 2022, Spring 2023, Spring 2024)
- Geography and Earth Sciences Department Chair Search Committee Member (2023)
- College of Engineering Academic Policy and Curriculum Committee (CEAPCC) (2020-2022)
- Dean of College of Engineering Search Committee, 2019-2020
- Chair, Search Committee, Department of Engineering Technology and Construction Management Chair (2021-2022)
- Departmental Review Committee (2018-2022)
- Member, EPIC High-Bay Faculty Search Committee (2015-2016)
- Mentor for Faculty Review Grant proposal resubmission – Nicole Barclay (2018-2019), Stephanie Pilkington (2019-2020), and Rachael Sherman (2020-2021).
- CLT Airport Engineering Onsite Seminar – organizing committee member (2018, 2019)
- Reviewer, ArtXSci and Ignite Proposals (2023).

Department level

- Faculty Mentor – Associated Schools of Construction (ASC) Competition Team – Open Concrete Competition (2020, 2021, 2022, 2023).
 - 2022 team – 3rd place, Region 2 competition
 - 2021 team – 3rd place, Region 2 competition
- Faculty Mentor – Association of Concrete Contractors (ASCC) Student Competition Team
 - 2022 team – 1st place (national competition)
- ETCM Research Committee (2024 – present)
- Smith Building Renovation Committee (2024 - present)
- Civil ET FAIT Chair (2019-2021)
- Graduate FAIT Subcommittee (Member 2015 – present)
- Civil ET and Construction Management FAIT (Member, 2006 – present)
- Freshman FAIT Subcommittee, Engineering Technology and Construction Management (Member, 2007 - 2017)
 - Water Resources and Sustainability FAIT Subcommittee, Civil ET and Construction Management (Member 2008 – present, Chair 2008-2012)
 - Materials and Methods FAIT Subcommittee, Civil ET and Construction Management (Member, 2008 – present, Co-Chair, 2008-2009, and Chair, 2014 – 2020)
 - Member, Civil ET New Faculty Search Committee (various searches, 2007-present)
- Construction Management New Faculty Search Committee (various searches from 2007 - present)
- American Concrete Institute (ACI) UNC Charlotte Student Chapter – Advisor (2013-present)
- Construction Management and Civil Engineering Technology Graduation and Awards Banquet, organizing committee member (2019)
- Tau Alpha Pi National Engineering Honor Society – Co-advisor of the North Carolina Beta (UNC Charlotte) Chapter (2007 – 2013)
- Women in Construction Student Club – Advisor (2010 – 2013)
- Coordinated United States Green Building Council (USGBC) workshops for students/faculty, “Green Building Basics” (March 20, 2010) and “Core Concepts and Strategies” (Spring 2011). Workshop attendees are eligible to sit for the USGBC’s Green Associate Exam. Each was attended by approximately 50 students and several faculty members.
- Instructor, Fundamentals of Engineering Review course for Materials, Chemistry and Biology, 2009 and 2012.

Donations Secured

- Laboratory Equipment from Arcadis (\$7,512) – microscopes, specimen preparation equipment
- Donations for Laboratory Prep Services
 - SKA Consulting Engineers - Total of \$5,800 - \$400 (March 2013), \$800 (December 2014), \$600 (March 2015), \$1000 (March 2016), \$500 (April 2016), \$400 (August 2018), \$250 (December 2020), \$1000 (August 2021), \$200 (February 2020), \$250 (December 2020), \$200 (February 2022), \$200 (June 2022)
 - Concrete Engineering Consultants - \$750 (November 2015)
 - Boyle Consulting Engineers - \$400 (March 2016)
- ACI Carolinas Chapter - \$1250 to defray student travel costs to National Convention Spring 2016

PROFESSIONAL DEVELOPMENT

Teaching

- Center for the Improvement of Mentored Experience and Research (CIMER) Mentor Training Workshop – offered by the UNC Charlotte Graduate School. January 26, 2024
- American Society of Engineering Education (ASEE) Safe Zone Training, Ally Training Workshop - Level 3. April 11, 2023. Safe Zone Trans Allyship workshops explore transgender-specific terms and concepts, the climate for trans individuals in society and in STEM and its broader implications, and action strategies for trans allies.
- American Society of Engineering Education (ASEE) Safe Zone Training, Ally Training Workshop - Level 2. April 4, 2023. Safe Zone Ally Training Level 2 workshops explore aspects of engineering culture that act as barriers to LGBTQ+ equality and inclusion, the concepts and implications of privilege and bias, how to disrupt discrimination, and tips for creating an inclusive classroom environment.
- American Society of Engineering Education (ASEE) Safe Zone Training, Ally Training Workshop – Level 1. March 27, 2023. Safe Zone Ally Training Level 1 workshops focus on understanding LGBTQ+ concepts, LGBTQ+ identity development and the coming out process, and simple strategies for building an inclusive environment and being an LGBTQ+ ally.
- Safe Zone Training, offered by UNC Charlotte Office of Identity, Equity, and Engagement. November 13, 2020.
- American Society for Engineering Education (ASEE) Workshop, “Replacing Implicit Bias: Recognize, Reconsider, and Respond,” held virtually December 16, 2020.
- Training course on Mechanistic-Empirical Pavement Design Guide (MEPDG) offered to the Florida Department of Transportation (FLDOT) taught by Michael Darter, hosted by the Florida Concrete and Products Association. Fort Lauderdale, FL, October 25-27, 2010.
- United States Green Building Council (USGBC) “Green Building Basics” workshop held on March 20, 2010. Workshop attendees are eligible to sit for the USGBC’s Green Associate Exam.
- “A Holistic Approach to Negotiating the Online Course Waters (Or, what I need to know before I jump in the deep end!)” presented by UNC Charlotte Office of Distance Education and Center for Teaching and Learning, June 10, 2008.
- Portland Cement Association (PCA) Professor’s Workshop, “Teaching the Materials Science, Engineering, and Field Aspects of Concrete” (both classroom and laboratory instruction) Skokie, IL, July 2007.

TEACHING ACCOMPLISHMENTS

Courses Taught

	Course Number and Name	Semester Taught	Enrollment (# responses)	Avg. Student Evaluation out of 5 points: "Overall This Instructor Was Effective"	
Graduate	INES 8090 / CMET 6285 – Quality Assurance in Construction	Fall 2012	17 (14)	4.85	
		Fall 2014	19 (13)	4.77	
		Fall 2016	20 (14)	4.57	
		Fall 2018	23 (21)	4.76	
Graduate	CMET 6160 – Research and Analytical Methods and MFPA 6243 – Research Investigation	Spring 2020 – DE	9 (8)	4.63	
		Spring 2020	1(1)	5.00	
		Spring 2022	22(22)	4.86	
		Spring 2014	3 (3)	5.00	
Graduate	CMET 6000 – Masonry Design and Construction (<i>co-instructor</i>)	Fall 2015	14 (10)	4.50	
		Spring 2014 (taught lab portion of course)	5 (4)	4.50	
		Spring 2015	15 (15)	4.73	
		Spring 2018	9 (8)	4.75	
Upper Division	CMET 5160 – Advanced Construction Materials	Fall 2019	18 (15)	4.93	
		Spring 2013 (taught 1/4 of course)	25 (16)	3.63	
	ETCE 4143 – Water and Wastewater Treatment	Fall 2006 (ETCE 3262)	14 (7)	4.71	
		Fall 2007	15 (11)	4.73	
		Spring 2008	19 (15)	4.80	
		Spring 2012	27 (23)	4.83	
	Upper Division	ETCE 4143L – Environmental Engineering Laboratory	Spring 2013	18 (9)	4.67
			Spring 2008	9 (8)	4.75
	Upper Division	CMET 4130 – Infrastructure Systems	Spring 2012	15 (9)	4.89
			Fall 2017	34 (22)	4.18
ETCE 4073 – Masonry Design and Construction (<i>co-instructor</i>)		Spring 2019	3 (1)	5.00	
		Spring 2014	15 (6)	4.67	
Upper Division		CMET 3680 – Ethics	Spring 2022	77 (24)	4.42
			Spring 2007 (2 sections)	6 (6) / 14 (13)	4.67 / 4.92
Upper Division		ETCE 3163L – Structures and Materials Laboratory	Fall 2007 (2 sections)	18 (16) / 18 (15)	4.73 / 5.00
			Spring 2008	1 (1)	5.00
	Fall 2008 (3 sections)		19(16) / 20(20) / 19(16)	4.87 / 4.63 / 4.38	
	Fall 2009 (3 sections)		18(14) /15(12) / 18(10)	4.93 / 4.67/ 4.80	
	Fall 2010 (2 sections)		18 (16) / 18 (18)	4.78 / 4.88	
	Fall 2012		16 (11)	4.82	
	Fall 2013		15 (8)	4.75	
Lower Division	CMET 2680 – Sustainable Design and Construction	Fall 2006	17 (14)	4.46	
		Spring 2014	68 (34)	4.50	
		Spring 2015	23 (6)	4.33	
		Spring 2016	41 (11)	4.73	
		Spring 2018	82 (26)	4.73	
	Lower Division	ETCE 2410 – Introduction to Environmental Engineering Technology	Spring 2019	21 (7)	4.86
			Spring 2007	38 (37)	4.76
			Spring 2008	38 (24)	4.74
			Spring 2009 (2 sections)	43 (36) / 44 (36)	4.89 / 4.59
			Spring 2010 (2 sections)	28 (20) / 30 (22)	4.60 / 4.86
Spring 2011			46 (30)	4.79	
Spring 2012			33 (29)	4.93	
Lower Division	ETCE 2163L – Structures and Materials Laboratory	Summer 2012	16 (12)	4.91	
		Spring 2013	49 (30)	4.37	
		Spring 2016	41 (13)	4.54	
		Spring 2017	43 (20)	4.85	
		Spring 2021	24 (17)	4.94	
Lower Division	CMET 1680 – Professional Development I	Spring 2008	67 (54)	4.67	
		Spring 2009	41 (27)	4.67	
	Lower Division	ETCE 1222 – Construction Materials	Fall 2013	61 (30)	4.87
Fall 2014			69 (33)	4.67	

	Fall 2015	71 (34)	4.85
	Fall 2016	83 (20)	4.80
	Fall 2017	93 (54)	4.78
	Fall 2018	99 (53)	4.81
	Fall 2020	94 (49)	4.82
	Fall 2021	49 (21)	4.81
	Fall 2022	85 (42)	4.71
	Fall 2023	91 (42)	4.76
	Fall 2024	92 (42)	4.76
ETCE 1222L – Construction Materials Laboratory	Spring 2009	22 (19)	4.74
	Spring 2011	20 (13)	5.00
ETGR 1100 – Engineering Technology Computer Applications	Fall 2006 (2 sections)	24 (17) / 24 (13)	4.88 / 4.82
	Summer 2008	8 (6)	5.00
	Fall 2008	41 (31)	4.63
	Summer 2009	5 (5)	4.80
	Spring 2011	42 (27)	4.67

Students Advised

Undergraduate Students

Carolinas Research Scholar (CRS) Mentor:

- Ross Newsome (Summer 2018)
- Robert Blake Biggers (Summer 2016) (co-mentored with Dr. Brett Tempest)
- Jacob Leach (Summer 2014)

Undergraduate Research Assistants

1. Diego Pando (May 2024-present)	22. Michael Wright (October 2020-December 2021)
2. Jenna Martin (May 2024 – present)	23. Austin York (September 2020-December 2021)
3. Alex Weir (May 2024 – present)	24. Clarke Summers (September 2020-December 2021)
4. Jeanette Jarvis (February 2024-present)	25. Alex Young-Desmaratte (July 2020-December 2020)
5. Shaun Kim (January 2024-May 2024)	26. Jacob Donnelly (September 2019-December 2020)
6. Sawyer Impello (September 2023-present)	27. Alkis Stankosh (July 2019-October 2019)
7. Paul Hart (May 2023-August 2023)	28. John Wassilchak (May 2018-December 2019)
8. Carson Beck (May 2023-August 2023)	29. Joseph O'Campo (February 2018-May 2020)
9. Kenny Dillon (May 2023-August 2023, May 2024-August 2024)	30. Caleb Friend (February 2018-December 2018)
10. Jackson Rizzolo (May 2023-December 2023)	31. Colin Dowty (Feb 2018-Dec 2018, Oct 2019-May 2020)
11. Kelly Sheffield (May 2023-present)	32. Keegan Lumley (February 2018-May 2018)
12. Nicholas Nolan (January 2023-present)	33. Gunnar Wright (June 2017 – December 2017)
13. Logan Fitzgerald (October 2022-August 2023)	34. Ross Newsome (January 2017 – May 2019)
14. Alec Strickland (January 2022-present)	35. Casey Farnsworth (May 2016 – May 2017)
15. Brandon Ellis (January 2022-present)	36. Robert Blake Biggers (May 2014 – May 2017)
16. Kyle Stewart (January 2022-May 2022, January 2024-present)	37. Christopher Albergo (January 2014 – August 2014)
17. Matthew Everette (January 2021- December 2021)	38. Edward Blanchard (December 2012 – May 2014)
18. Evan Drake (January 2021-December 2021)	39. Michael Greenwood (July 2012 – May 2013)
19. Madhumitha Keerthivarman (January 2021-May 2021)	40. Devin Secore (May 2011 – May 2012)
20. James Decker (October 2020-December 2021)	41. Joshua Ramsey (June 2012 – December 2013)
21. Alexander Nowatkowski (Oct 2020-December 2021)	42. Jeremy Calamusa (May 2010 – August 2011)

Undergraduate Teaching Assistants, and Prospect for Success Preceptors

1. Joseph Ocampo, Civil ET undergraduate (August 2018 – December 2018)
2. Casey Schilder, Civil ET undergraduate (August 2017 – present) – PFS Preceptor
3. Timothy Carter Dold, Construction Management undergraduate (August 2016 – December 2016, August 2017 – December 2017) – PFS Preceptor
4. Casey Farnsworth, Construction Management undergraduate (August 2016 – December 2016, August 2017 – December 2017) – PFS Preceptor
5. Dixie Johnson, Civil ET undergraduate (August 2015 – December 2015) – PFS Preceptor
6. Stewart Crismore, Construction Management undergraduate (May 2014 – December 2015) – PFS Preceptor

7. Jacob Scott Baucom, Civil ET undergraduate (December 2007 - May 2008)

College of Engineering Honors Program:

- Davis Rowe, B.S. in Geology, Fall 2024 (Honors Committee)
- Liam Rogers, B.S. in Geology, Fall 2023 (Honors Committee)
- Joseph Ocampo, B.S. in Construction Management, Spring 2020 (Honors Advisor)
- Jennifer Grove, B.S. in Civil Engineering Technology, Spring 2018 (Honors Committee)

Senior Design Team Mentor:

Semester	Project Name	Students
Fall 2022	CommScope – byproduct glass fiber-reinforced concrete (CIET)	Greg Marshall, Matthew Swicegood, Kevin Martinez, Brendan Curry
Fall 2022	CommScope – byproduct glass fiber-reinforced concrete (CIET)	Wade Bunce, Syed Hussain, Ali Bukasa, Sawyer Valentine
Fall 2022	CommScope – byproduct glass fiber-reinforced concrete (CIET)	Rhett Clodfelter, Saewon Kim, Kyle Gibney, Brenden Mallon
Spring 2022	Langtree Road/NC-115 Connector Project (CIET)	Tommy Owenby, Case Helton, Ibrahim Salih, Jonie Martin
Fall 2021	American Legion Memorial Stadium Culvert Construction (CIET)	Alec Petty, Clarke Summers, Austin Yorke
Spring 2021	Oakboro Foundry Slab and Perimeter Footings (CIET)	Advised all CIET teams on slab/footing scope of work
Fall 2020	Concord Mills Bridge Project (CM)	Brenden Stucko, Joel Sawyer, Ernest Meland, Connor Doble
Spring 2020	Hydromer, Inc. Interior Upfit (CM)	James Allison, Nick Docabo, Jonathan Scere
Spring 2020	Hydromer, Inc. Interior Upfit (CM)	Allison Summers, Garrison Hurd, Colin Dowty, William Childers
Fall 2019	UTC Aerospace Systems D3 (CM)	Cameron Noel, Sebastian Bravo-Velasco, Brandon Underwood
Spring 2019	UNC Charlotte Daycare Facility (CIET)	Ross Newsome, Thomas Gray, Samuel Harris
Spring 2019	Ramah Creek Bridge (CIET)	Robert Brossart, Spencer O’Coin, Erin Evans
Fall 2018	Goodwill Industries” (CIET)	Marshall Woodard, Gunnar Wright
Fall 2018	State Employees Credit Union (CM)	Jonathan Rich, Jacob Frogge, Ryan Lay, John Isaac Turner
Spring 2018	Wingate Town Hall and Fire Station (CM)	Justin Badgett, Luc Oriol, Dakota Hedrick
Fall 2017	Early College High School Building (CM)	Zachary Castano, Christopher Martin, Cameron Hedgepeth
Spring 2015	Cacapon Reservoir Dam Safety Modifications	Timothy Jennings, Hector Cortez, Jackson Minter
Fall 2014	Children’s Hospital of the King’s Daughter – Phase I Oakbrook Business and Technology Center	Joseph Royer, Trey Riley
Spring 2014	Light Rail Train Station at UNC Charlotte	Edward Blanchard, Warren Isenberg, Devan Snyder
Fall 2013	CRI Campus Hotel and Conference Center	Joshua Ramsey, Andrew Rush Carl Duda
Spring 2013	Evaluation of Concrete Produced Using Recycled Aggregates From Demolition Waste Using Non-Destructive and Destructive Methods (co-mentored with Dr. Thomas Nicholas)	Michael Greenwood, Blake Dulin, Matthew Witmore
Spring 2013	UNC Charlotte Water Reuse System (co-mentored with Linda Vasil)	Adam Kever, William French, Aaron Ledbetter
Fall 2012	Concord Regional Airport Air Traffic Control Tower (co-mentored with Dr. Thomas Nicholas)	Zachary Isenhour, Rafael Hernandez, Stephen Kane
Spring 2012	EPIC Building Green Roof Retrofit	C. Justin Carter, Yorke Sweat, James Teague
Spring 2012	CFRP Beam Repair Analysis (co-mentored with Thomas Nicholas)	Tyler Teer, Devin Secore, Daniel Gates
Spring 2011	Parking Deck at UNC Charlotte Research Campus	Darin Watson, Matthew Essman, Michael (Scott) McCall
Spring 2011	Newton-Moore Correctional Facility	Jared Looney, Brian Rosenfeld, Mariano Cruz

Fall 2010	Mass Concrete Thermal Analysis” Industry-Sponsored Project, sponsored by Shaw Group. <i>Note: this project won 3rd prize at the Fall 2010 Senior Design Expo.</i>	Nhat Nguyen, David Pegram, Brian Ketner
Spring 2010	Modular Precast Barrier Wall System” Industry-Sponsored Project, sponsored by Substation Reliability Experts (SRE)	Ben Bacon, Jorge Gallegos, Randy Reeves
Spring 2010	Reinforced Concrete Mock-Ups for Non-Destructive Evaluation Techniques in Concrete” Industry-Sponsored Project, sponsored by the Electric Power Research Institute (EPRI)	Ben Marion, David Ratliff, Graham Guse

Graduate Students

Graduate Students Graduated (thesis completed)

No.	Name	Degree	Graduation Date	Thesis Title
17	Tau Wu	MS in Civil Engineering (co-advised with Dr. Matthew Whelan)	December 2023	Bridge Selection Process and Workflow Development for UAS-Enabled Bridge Inspection
16	Clarke Summers	MS in Construction & Facilities Engineering	August 2023	Investigating Time Sensitive Thermal and Mechanical Inputs for Rigid Pavements
15	Joseph Ocampo	MS in Construction & Facilities Engineering	August 2022	Freeze-Thaw Durability Specification for Highway Concrete
14	Allison Summers	MS in Construction & Facilities Engineering	December 2021	Evaluation of J-Rox as a Supplementary Cementitious Material for Concrete Applications
13	Arindam Dey	MS in Construction & Facilities Engineering	December 2020	Chemical Characterization of Recycled Concrete Aggregates Using a Handheld X-Ray Fluorescence Device
12	Akshay Bansal	MS in Construction & Facilities Engineering	December 2020	Guidance for Use of Construction and Industrial Waste By-Products in Concrete
11	David Alex Dillworth	MS in Construction & Facilities Engineering	December 2020	Quality Assurance of Bridge Deck Concrete Overlays Using Surface Resistivity Testing
10	Ross Newsome	MS in Construction & Facilities Engineering	May 2020	Evaluating Corrosive Site Performance of Coastal Bridges
9	Memoree McEntyre	MS in Construction & Facilities Engineering	December 2019	Development of Early-Age Strength and Shrinkage Specifications for Durable Concrete
8	Robert Blake Biggers	MS in Construction & Facilities Engineering	May 2019	Development of a Surface Resistivity Specification for Durable Concrete
7	Patrick Phillips	MS in Construction & Facilities Management	December 2017	Predicting Costs for Bridge Replacement Projects
6	Jacob Leach	MS in Construction & Facilities Management	May 2017	Internally Cured Concrete Mixtures and Specifications for Highway Infrastructure
5	Kelsey Lane	MS in Construction & Facilities Management	December 2016	Performance Criteria and Measures for Prioritization of Bridge Replacement Projects
4	Edward Blanchard	MS in Construction & Facilities Management	May 2016	Determination and Evaluation of Inputs for Portland Cement Concrete Pavement to Support Local Calibration of MEPDG for North Carolina
3	Rohit Chimmula	MS in Construction & Facilities Management	May 2016	Quantitative Assessment of the Impact of Use of Portland Limestone Cements in North Carolina Concrete Pavements
2	Joshua Ramsey	MS in Construction & Facilities Management	May 2015	Updating and Enhancing the North Carolina Department of Transportation’s Bridge Management System User Costs
1	Dallas Schwerin	MS in Construction & Facilities Management	August 2014	Development and Construction of a Recycled Brick Masonry Aggregate Concrete Pavement

Graduate Students Graduated (project completed)

No.	Name	Degree	Graduation Date	Project Title
1	Sumit Bajaj	MS in Construction & Facilities Management	May 2017	Evaluation of the Influence of Moisture Content on the Thermal Properties of Concrete and the Potential Impacts on the Performance of North Carolina Concrete Pavements
2	Jorge Gallegos	MS in Construction & Facilities Management	May 2017	Building Energy Simulations Using Lightweight Concrete and Masonry Components

3	Tilak Bhonagiri	MS in Construction & Facilities Management	May 2016	Analysis of Air Void System of Hardened Concrete Using a Scanner System
4	Abhishek Malode	MS in Construction & Facilities Management	May 2016	Damage Assessment of Concrete Bridge Decks Using Dynamic Modulus and Permeability Testing

Graduate Students Funded, but non-thesis:

1. Siva Krishna Sai Sikhakolli, MS in Construction and Facilities Engineering, graduated MSCFE December 2022. Funded June 2022 through December 2022.
2. Sruthi Suriya, MS in Construction and Facilities Engineering, graduated MSCFE December 2022. Funded January 2022 through May 2022.
3. Jeremy Calamusa, MS in Construction and Facilities Management, graduated MSCFM December 2012. Funded May 2011 through December 2012.

Current Graduate Students Currently Being Advised:

1. Rohan Reddy Jonna, PhD in Civil Engineering, expected Spring 2025
2. Issac Oyawoye, PhD in Civil Engineering, expected Spring 2025
3. Matthew Sheffield, PhD in Infrastructure and Environmental Systems, expected May 2024
4. Sunday Michael Akanji, PhD in Infrastructure and Environmental Systems, expected May 2027
5. Logan Fitzgerald, MS in Civil Engineering (co-advised with Dr. Brett Tempest), expected December 2024

Graduate Teaching Assistants:

1. Shivani Bommajji Gnanendra Kumar (August 2024-December 2024)
2. Soham Balasaheb Kalbhor (August 2024-December 2024)
3. Anuradha Chinamsetty (August 2023-December 2023)
4. Siva Krishna Sai Sikhakolli (August 2021-December 2021, August 2022-December 2022)
5. Xingong (Elena) Ji (August 2020-December 2020)

Served on Graduate Committee:

1. Arghavan Azarbayjani, MS in Construction and Facilities Engineering, May 2024
2. Yan Zhang, PhD in Civil Engineering, student at New Jersey Institute of Technology, August 2024
3. Juliana Somuah, MS in Construction and Facilities Engineering, August 2024
4. Neetu Donkada, MS in Construction and Facilities Engineering, December 2023
5. Emmanuel Marfo, MS in Electrical and Computing Engineering, student at North Carolina A&T State University, May 2023
6. Peter Theilgard, MS in Civil Engineering, May 2022
7. Taiseer Al-Salihi, MS in Civil Engineering, May 2022
8. Ali Algarni, PhD in Computing and Information Systems, May 2022 (graduate faculty representative)
9. Edward K. Mahama, MS in Electrical Engineering, August 2021 (Student at North Carolina A&T State University)
10. Justin Dodd, PhD in Infrastructure and Environmental Systems, August 2021
11. Dipin Kasana, PhD in Infrastructure and Environmental Systems, August 2021
12. George Poulos, MS in Construction and Facilities Engineering, December 2020
13. Keith Violette, MS in Civil Engineering, August 2020
14. Jonathan Moss, PhD in Civil Engineering, May 2020 (Graduate Faculty Representative)
15. Corey Rice, PhD in Civil Engineering, May 2020 (Graduate Faculty Representative)
16. Dhananjay Thorat, MS in Construction and Facilities Management, May 2019
17. Arunan Manickavelu, MS in Construction and Facilities Management, May 2019
18. Akpovona Ojaruega, MS in Civil Engineering, August 2018
19. Timothy Kernicky, PhD in Infrastructure and Environmental Systems, May 2018
20. Dipin Kasana, MS in Construction and Facilities Management, May 2018
21. Aidan Alar, MS in Civil Engineering, M.S. in Civil Engineering, May 2018
22. Taye Ojo, MS in Civil Engineering, M.S. in Civil Engineering, May 2018
23. Jason Weiger, MS in Construction & Facilities Management, December 2017
24. Jacob Trammel, MS in Construction and Facilities Management, December 2016
25. Maria Trejo, MS in Civil Engineering, December 2016
26. Clayton Medlin, MS in Civil Engineering, August 2016
27. Christian De Armas Bernier, MS in Civil Engineering, May 2016.
28. Christopher Albergo, MS in Construction & Facilities Management, May 2015

29. Raka Goyal, PhD in Infrastructure and Environmental Systems (INES), December 2015
30. Mauricio Garcia Theran, PhD in Infrastructure and Environmental Systems (INES), August 2015
31. Morgan Laney, MS in Construction & Facilities Management, December 2014
32. Xiazhi Fang, MS in Construction & Facilities Management, December 2014
33. Thanh Diep, MS in Civil Engineering, December 2014
34. Paul Radford, MS in Construction & Facilities Management, August 2014
35. Richard Cobb, MS in Construction & Facilities Management, December 2013
36. Prah-Ennin Paa Kwesi, MS in Civil Engineering, May 2013
37. Darren Thompson, MS in Construction & Facilities Management, December 2012
38. Jose Santiseban, MS in Construction & Facilities Management, December 2012
39. Louremy Pena, MS in Construction & Facilities Management, December 2012

Currently Serving on Graduate Committee:

1. Bahareh Nikmehr, PhD in Civil Engineering, Deakin University (Australia)
2. Casey Folks, PhD in Nanoscale Science, December 2025 (anticipated) (graduate faculty representative)
3. Elnaz Banani, PhD in Infrastructure and Environmental Systems, May 2025 (anticipated)
4. Emmanuel Adeyanju, PhD in Civil Engineering, anticipated May 2025 (Graduate Faculty Representative)
5. Isaac Oyawoye, MS in Civil Engineering, May 2024
6. Logan Boeshore, MS in Civil Engineering, May 2024
7. Fatemeh Banani Ardecani, PhD in Civil Engineering, anticipated Fall 2024
8. Samantha Doughty, MS in Civil Engineering, expected December 2024

Courses Developed

1. CMET 5160 – Advanced Concrete Materials, developed for Spring 2015
2. CMET 6285 – Quality Assurance in Construction, developed for Fall 2012
3. ETCE 4073/CMET 6000 – Developed laboratory portion of Masonry Design and Construction course co-taught with Dr. Thomas. Nicholas, developed for Spring 2014
4. ETCE 3163L – Structures & Materials Laboratory, developed for Spring 2007

Courses revised and significantly modified:

- ETCE 1222 – Construction Materials (based upon existing course materials)
- CMET 2680 – Sustainable Design and Construction course, Spring 2014 (based upon previous course offered in Spring 2008)
- ETCE 2410 – Introduction to Environmental Engineering Technology, Spring 2007 (enhanced subsequently with changes to curriculum)
- ETCE 1222L – Construction Materials Laboratory, 2011-present (additional laboratory exercises developed)