

CURRICULUM VITAE

Simon T. Ghanat, Ph.D., P.E.

Associate Professor

The Citadel

Civil and Environmental Engineering

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EDUCATION

Ph.D., Civil, Environmental and Sustainable Engineering (Geotechnical), Arizona State University

M.S., Civil and Environmental Engineering (Geotechnical), Arizona State University

B.S., Civil Engineering, Arizona State University

CERTIFICATION

Professional Engineer, South Carolina #34003 (2016)

ACADEMIC EXPERIENCE

2019-Present The Citadel, Charleston, SC

- Serve as Associate Professor in the Department of Civil and Environmental Engineering, teaching responsibilities include undergraduate and graduate Geotechnical Engineering courses, laboratories, Mechanics of Materials, and freshman Seminar.

2014-2019 The Citadel, Charleston, SC

- Serve as Assistant Professor in the Department of Civil and Environmental Engineering, teaching responsibilities include Geotechnical Engineering related courses, laboratories, and freshman programs. Administrative responsibilities include planning and organizing student events for American Society of Civil Engineers Student Chapter.

2012-2013 Bucknell University, Lewisburg, PA

- Served as a visiting Assistant Professor in the Department of Civil and Environmental Engineering, teaching responsibilities included: geotechnical engineering related courses, laboratories, Mechanics of Materials, and advisor for Senior Capstone Projects.

2010-2013 Arizona State University, Tempe, AZ

- Served as an adjunct faculty in the School of Sustainable Engineering and Built Environment, teaching responsibilities included Foundation Design course.

2008-2010 Arizona State University, Tempe, AZ

- Served as a teaching/research assistant in the School of Sustainable Engineering and Built Environment, teaching responsibility included Foundation Design course, laboratories and Mechanics of Materials.

1991-2011 Matrix Education Center (Owner/Instructor), Tempe, AZ

- Managed all aspects of business operation including: instruction, administrative, customer service, student advising, and mentoring. Taught and assisted students with course material using active learning techniques in the following courses: Statics, Dynamics, Mechanics of Materials, Fluid Mechanics, Thermodynamics, Structural Analysis and Design, Hydrology, Materials, Calculus, Differential Equations, Linear Algebra, Statistics and Probability, General Physics, General and Organic Chemistry, Economics, Accounting, Finance; Preparatory Courses for FE Exam, GMAT, MCAT, DAT, and PCAT.

COURSES TAUGHT

THE CITADEL

- CIVL 101 Introduction to Civil Engineering (3 Semesters)
- CIVL 103 Engineering Drawing (2 Semesters)
- CIVL 304 Mechanics of Materials (6 semesters)
- CIVL 307 Materials Laboratory (8 Semesters)
- CIVL 314 Engineering Economy (4 Semesters)
- CIVL 402 Geotechnical Engineering Laboratory (7 Semesters)
- CIVL 409 Introduction to Geotechnical Engineering (6 Semesters)
- CIVL 410 Geotechnical Engineering II (7 semesters)
- CIVL 411 Engineering Management (1 Semester)
- CIVL 412 Engineering Practice & Professional Licensure (4 Semesters)
- CIVL 730 Geotechnical Earthquake Engineering (2 Semester)
- FSEM 101 Freshman Seminar-Environmental Hazards (3 semester)
- CONE 412 Engineering Practice & Professional Licensure CONE (1 Semester)

BUCKNELL UNIVERSITY

- ENGR 208 Solid Mechanics II (1 Semester)
- CENG 350 Introduction to Geotechnical Engineering (1 Semester)

- CENG 350L Laboratory Introduction to Geotechnical Engineering (1 Semester)
- CENG 450 Foundation Design (1 Semester)
- CENG 450L Foundation Design Laboratory (1 Semester)
- CENG 491 Civil Engineering Design (1 Semester)
- CENG 651 Environmental Geotechnology (1 Semester)
- CENG 451 Environmental Geotechnology (1 Semester)

ARIZONA STATE UNIVERSITY

- CON 321 Mechanics of Materials for Construction (1 Semester)
- CEE 452 Foundation Design (5 Semesters)
- CEE 598 Foundation Design (5 Semesters)

COURSES DEVELOPED

The CITADEL

- CIVL 412 Engineering Practice & Professional Licensure
- FSEM 101 Freshman Seminar-Environmental Hazards
- CONE 412 Engineering Practice & Professional Licensure
- CIVL 730 Geotechnical Earthquake Engineering
- CIVL 731 Geo-Environmental Engineering
- CIVL 732 Advanced Soil Mechanics
- CIVL 733 Advanced Foundations Design
- CIVL 734 Soil Behavior

NON-ACADEMIC EXPERIENCE

2015-Present Instructor for two National Highway Institute Training Courses entitled "*LRFD Seismic Analysis and Design of Transportation Geotechnical Features*" and "*LRFD Seismic Analysis and Design of Structural Foundations and Earth Retaining Structures*"

2008- 2012 Assistant Consultant Engineer, (Principal Investigator, Edward Kavazanjian, Jr., Geotechnical Consultant Engineer)

- Development of National Highway Institute Training Course on Seismic Design of Bridge Foundations and Geotechnical Features of Highway Systems, including:
 - Preparation of training lectures
 - Preparation of a workbook and solutions for worked examples

- Development of Geotechnical Design Module for National Highway Institute Training Course on Seismic Design of Bridge Foundations and Geotechnical Features of Highway Systems (Story Line Bridge Projects #1, 2 and 3)
- Performed non-linear site response analyses for Kentucky Lake Bridge Project.
- Performed seismic stability assessment including seismic hazard analysis, seismic slope stability analysis and seismic site response analysis for Palos Verde Landfill in California
- Performed seismic hazard analysis and seismic site response analysis for Chicago Landfill in Templeton, California
- Performed seismic hazard analysis for Questa Molybdenum Mine in New Mexico

RESEARCH EXPERIENCE

- Developed seismic hazard maps for Greater Phoenix area, including:
 - Seismic source characterization in the Phoenix Basin
 - Development of seismic hazard models for the Greater Phoenix area
 - Performing probabilistic seismic hazard analysis for the Greater Phoenix area
- Evaluated the applicability of Next Generation Attenuation Relationships for predicting the site-specific response of shallow bedrock sites and deep soil sites, including:
 - The seismic response of shallow bedrock sites
 - The specific response analysis of deep soil sites
 - Seismic site response analyses of the Phoenix deep soil basin using non-linear and linear equivalent methods
- Investigated the significant duration characteristics of the horizontal components of shallow crustal strong ground motion records, including:
 - Developing empirical correlations between the significant duration of strong ground motions and earthquake magnitude, closest rupture distance, shear wave velocity of top 30m of soil, depth at which shear wave velocity is 1000 m/s, and mechanism of faulting using non-linear mixed effects regression analysis.
- Investigating the seismic site response analyses of the Charleston deep sediment basin using non-linear and linear equivalent methods.

- Investigating the applicability of National Earthquake Hazard Reduction Program (NEHRP) site factors in deep soil sites in Charleston and shallow bedrock sites in Columbia, SC.
- Developing Liquefaction hazard maps for the Greater Charleston Area incorporating effects of sea level rise.
- Developing subsidence maps for the Greater Charleston Area.

RESEARCH INTEREST

- Seismic site response analysis
- Probabilistic seismic hazard analysis
- Liquefaction analysis
- Climate Change Impact on Geotechnical Properties
- Development of Geotechnical Engineering Concept Inventory
- Engineering Education

FUNDED EXTERNAL GRANT PROPOSALS

- NSF S-STEM Grant-Encouraging Civil Engineers retention through community and self-efficacy building. (\$1,000,000)
The goal of the program is to encourage persistence of diverse, academically talented, low-income students in civil engineering by providing scholarships and opportunities to develop self-efficacy while engaged in a community of practice. Program elements are intentionally structured in accordance with Wenger's dimensions of communities of practice and Bandura's self-efficacy framework. Co-Principal Investigators: Dr. Mary K. Watson (Lead), Dr. Kevin Bower, Dr. Simon T. Ghanat, Dr. Timothy Wood, Dr. William J. Davis. Performance period: 12-1-2018 to 11-30-2023.
- Building Community Resilience to Water-Related Hazards in the Charleston, SC Region: A Charleston Resilience Network Initiative (\$765,887.00)
National Ocean Service (NOS), National Oceanic and Atmospheric Administration (NOAA), U.S. Department of Commerce. Co-Principle Investigators: Dr. Norman S. Levin (Lead), Dr. Timothy Callahan, Dr. Gregory J. Carbone, Dr. William J. Davis, Dr. Kirstin Dow, Dr. Simon T. Ghanat. The overall goals of this project are threefold: (1) To examine and determine on a parcel level scale the capacity of critical infrastructure in Charleston region to effectively absorb impacts of flooding events, both in short-term and long-term, and enhance the region's response to immediate water hazard impacts and support its adaptive capacity to future hazard events; (2) To produce detailed information and analyses that will assist multiple stakeholders and organizations as they move from resiliency planning to implementation; and (3) To foster a unified strategy and provide a

forum to share science-based information, educate stakeholders and enhance long-term planning decisions that results in resilience. Performance period: 1-1-2016 to 12-31-2018.

- **Statewide Coalition: NSF INCLUDES DDLP Statewide Consortium: Supporting Underrepresented Populations in Pre-calculus by Organizational Redesign toward Engineering Diversity,"** Award No. 1744497, Grant of (\$ 299,994.00).
The broad overarching goal of SC: SUPPORTED is to address high attrition rates among South Carolina students who enter ABET-accredited engineering programs with insufficient calculus preparation. Attrition among such students presents a challenge in broadening engineering participation as this target group disproportionately consists of underrepresented minority (primarily African American), low-income, and/or first-generation students. Performance period: 12-1-2017 to 11-30-2019.
- **Code Study - Wind and Seismic study**
Assessment of the Seismic Provisions in the 2015 International Residential Code, the 2014 USGS Seismic Hazard Maps for South Carolina, and the Likely Impact of Elevated Seismic Hazard on the 2018 International Residential Code AND Assessment of the Wind Maps in the 2015 International Residential Code- The South Carolina General Assembly and The South Carolina Department of Labor, Licensing and Regulation (LLR) (\$31,500.00)
Co-Principal Investigators: Dr. Tim Mays and Dr. Simon Ghanat.

FUNDED INTERNAL GRANT PROPOSALS

- The Citadel Foundation- 2014 Professional Development Grant (\$2,041.00)
- The Citadel School of Engineering- 2014 Professional Development Plan (\$2, 472.00)
- The Citadel School of Engineering-2014 Presentation of Research Grant (\$1,090.00)
- The Citadel School of Engineering- 2015 Professional Development Plan (\$1,996.00)
- The Citadel School of Engineering-2015 Presentation of Research Grant (\$1,216.00)
- The Citadel School of Engineering-2016 Research Proposal Grant (\$3,000.00)
- The Citadel School of Engineering-2016 Presentation of Research Grant (\$2,160.00)
- The Citadel School of Engineering- 2016 Professional Development Plan (\$2,096.00)
- The Citadel School of Engineering-2017 Research Proposal Grant (\$2,800.00)
- The Citadel School of engineering-2017 Professional Development Plan (\$ 2,146.00)
- The Citadel School of Engineering-2017 Presentation of Research Grant (\$1,446.00)
- The Citadel School of engineering-2018 Professional Development Plan (\$ 2,046.00)
- The Citadel School of Engineering-2018 Research Proposal Grant (\$2,800.00)
- The Citadel School of Engineering-2018 Presentation of Research Grant (\$1,496.00)
- The Citadel School of engineering-2019 Professional Development Plan (\$ 2,000.00)
- The Citadel School of engineering-2020 Professional Development Plan (\$ 2,100.00)

- The Citadel Summer Undergraduate Research Experience (SURE)-2017 Grant-Mentored two CE evening students (\$1,500.00)
- The Citadel Summer Undergraduate Research Experience (SURE)-2018 Grant-Mentored a Cadet (\$1,500.00)
- The Citadel Summer Undergraduate Research Experience (SURE)-2019 Grant-Mentored two CE evening students (\$500.00)
- The Citadel Summer Undergraduate Research Experience (SURE)-2020 Grant-Mentored two CE evening students (\$1,000.00)

JOURNAL PUBLICATIONS

- Ghanat, S.T., Kavazanjian, E, Jr., and Arrowsmith, R. “Seismic Source Characterization for Greater Phoenix Area Earthquake Hazard” Environmental, Engineering, and Geosciences (EEG) Journal, Vol 3 Aug 2015, pp 211-222.
- Ghanat, S.T, “Impact of Projected Climate-Driven Sea Level Rise on Liquefaction Vulnerability in Charleston, South Carolina”, Seismological Research Letters, SSA Journal, Seismological Society of America, Volume 91, Issue 2B, April 2020.

PEER REVIEWED CONFERENCE PROCEEDINGS

- Ghanat, S., Davis, W., Nale, D., Burke, R., (2020) Engagement in Practice: Adopting Service Learning and Community Engagement as a High Impact Teaching Strategy in Geo Engineering, American Society for Engineering Education Annual Conference, Virtual,.
- Watson, MK, Ghanat, S., Wood, T., Davis, W., Bower, K., Hornor, T.; Welch, R., (2020) A Summer Calculus Experience to Encourage Development of Community and Self-efficacy Building of Civil Engineering Students, American Society for Engineering Education Annual Conference, Virtual.
- Ghanat, S., Shetty, N., (2020) Impact of Laboratory Section Size on Student Perception of Learning in Materials Laboratory Course, American Society of Engineering Education, Zone II, Southeastern Section, Annual Conference, Auburn, AL.
- Ghanat, S., (2020), Pedagogical Techniques Employed in a Freshman Seminar Course American Society of Engineering Education, Zone II, Southeastern Section, Annual Conference, Auburn, AL,
- Shetty, N., Ghanat, S., (2020) Slido as a student response system in engineering education, American Society of Engineering Education, Zone II, Southeastern Section, Annual Conference, Auburn, AL.

- Ghanat, S., Pitts, C., Dolder, M., (2020), Study of Properties of Coastal Pluff Mud at The Citadel, American Society of Engineering Education, Zone II, Southeastern Section, Annual Conference, Auburn, AL.
- Watson, MK., Ghanat, S., (2020) Exploring Math Self-Efficacy Among First-Year Civil Engineering Majors, First-Year Engineering Experience (FYEE), American Society for Engineering Education, Virtual.
- Watson, MK., Ghanat, S., Wood, T., Davis, W., Hornor, T., Bower, K., GIFTS (2020) : Reimagining the Early Calculus Experience, First-Year Engineering Experience (FYEE), American Society for Engineering Education, Virtual.
- Ghanat, S.T., Kaklamanos, J., Selveraj, I., Walton, C., Saftner, D., Swan, C., Kunberger, T., Griffith, S, Barry, B., (2019), “Bias and Precision in Instructor Grading of Concept Inventories in Geotechnical Engineering Courses” proceeding of 2019 American Society of Engineering Education National Conference, Tampa, FL.
- Ghanat, S.T., Garner, D, Zanin, M., Plumblee, J., Bornstein.,D., Ragan, D., (2019), “Assessment of Mentors’ and Mentees’ Perceptions of Mentees’ Research Skills at The Citadel, proceeding of 2019 American Society of Engineering Education National Conference, Tampa, FL.
- Ghanat, S.T., Davis, J. (2019), “Assessing Student Prior Knowledge and Learning in Engineering Management Course”, proceeding of 2019 American Society of Engineering Education National Conference, Tampa, FL.
- Watson, M.K., Ghanat, S.T., Bower, K., Davis, J., Wood, T., “Systematic Review of Calculus Lit” proceeding of 2019 American Society of Engineering Education National Conference, Tampa, FL.
- Ghanat, S.T., Cheshire, D., “ Designing a First-year Seminar Course to Promote Significant Learning” proceeding of 2019 American Society of Engineering Education-Southeast, Raleigh, NC.
- Ghanat, S.T., Garner, D., “Assessing Students’ Perception of SURE Program at The Citadel” proceeding of 2019 American Society of Engineering Education-Southeast, Raleigh, NC.
- Ghanat, S.T., Burke, R, Davis, J., Brown, K., “Study of Prior Exposure to Engineering Economics at The Citadel” proceeding of 2019 American Society of Engineering Education-Southeast, Raleigh, NC.
- Ghanat, S.T., Grayson, J., “Cookbook Approach vs. Discovery Approach in Mechanics of Materials Laboratory Course at The Citadel” proceeding of 2019 American Society of Engineering Education-Southeast, Raleigh, NC.
- Ghanat, S.T, “Pedagogical Techniques Employed in Foundation Design Course at The Citadel” proceeding of 2019 American Society of Engineering Education-Southeast, Raleigh, NC.
- Ghanat, S.T., Kaklamanos, J., Selveraj, I., Walton, C., Saftner, D., Swan, C., Kunberger, T., “Assessing the Impact of Educational Factors on Conceptual Understanding of

Geotechnical Topics” proceeding of American Society of Engineering Education National Conference, Salt Lake City, UT, 2018.

- Ghanat, S.T., Garner, D, Howison, J., Banik, S, Swart, B., Verdicchio, M., Hunter, R., Washuta, N., “Student’s Perception of A Summer Undergraduate Research Experience: Across the Disciplines”, proceeding of American Society of Engineering Education National Conference, Salt Lake City Ut, 2018.
- Ghanat, S.T., Grayson, J., Bubacz, M., Skenes, K , “Assessing the Influence of Lecture/Laboratory Instructor Pairing on Student Perception and Learning Outcomes”, proceeding of American Society of Engineering Education National Conference, Salt Lake City, UT, 2018.
- Ghanat, S.T., Grayson, J.M., Bubacz, M., Skenes, K , “Lecture/Laboratory Instructor Pairings – Does it Make a Difference?” Proceeding of American Society of Engineering Education-Southeast, FL, 2018.
- Ghanat, S.T., Davis, J, “Pedagogical Techniques Employed in an Engineering Management Course” the proceeding of American Society of Engineering Education-Southeast, FL, 2018.
- Ghanat, S.T. “Various Assignments Employed in Geotechnical Engineering Laboratory” the proceeding of American Society of Engineering Education-Southeast, FL, 2018.
- Ghanat, S.T., Grayson, M., Bubacz, M., “ The Influence of a Summer Lecture/Laboratory Course on Students’ Transition from a Two-Year to a Four-Year College” proceeding of American Society of Engineering Education-Southeast, FL, 2018.
- Ghanat, S.T., Kaklamanos, J., Selveraj, I., Walton, C., Sleep, M., “Assessment of Students’ Prior Knowledge and Learning in an Undergraduate Foundation Engineering Course” proceeding of American Society of Engineering Education National Conference, Columbus, OH, 2017.
- Ghanat, S.T., Michalaka, D., “Study of Pre- and Post-Course Knowledge Surveys in an Engineering Economy Course” proceeding of American Society of Engineering Education National Conference, Columbus, OH, 2017.
- Davis, W.J., Ghanat, S.T., Michalaka, D., Brown, K., “Application of Indirect and Direct Measures for Student Teamwork Outcome Assessment within an Undergraduate Civil Engineering Curriculum”, proceeding of American Society of Engineering Education National Conference, Columbus, OH, 2017.
- Ghanat, S.T., Woo, M., Bubacz, M., Grayson, M., “From Analyzing Geotechnical Failures to Generating and Solving Crossword Puzzles: Adding Variety to a Geotechnical

Engineering Course” American Society of Engineering Education Southeast, Zone II, PR, 2017.

- Ghanat, S.T., Michalaka, D., Grayson, J.M., “Study of Pre- and Post-Course Knowledge Surveys in an Engineering Economy Course” American Society of Engineering Education Southeast, Zone II, PR, 2017.
- Ghanat, S.T., Brown, K., “Pedagogical Techniques Employed in an Engineering Drawing Course” American Society of Engineering Education Southeast, Zone II, PR, 2017.
- Grayson, J.M., Ghanat, S.T., Wood, T.A., “Use of Active vs. Passive Learning Pedagogies in a Statics Course to Address Variations in Student Performance between Course Sections” American Society of Engineering Education Southeast, Zone II, PR, 2017.
- Ghanat, S.T., Kaklamanos, J., Ziotopoulou, K., Selvaraj, I , and Fallon, D. “A Multi-Institutional Study of Pre- and Post-Course Knowledge Surveys in Undergraduate Geotechnical Engineering Courses” Proceedings of ASEE 2016, New Orleans, LA. (2016 Gerald Seeley Award Winner).
- Ghanat, S.T., and Grayson, J.M., “Using Various Active Learning Techniques to Create Excitement and Enhance Learning in a Mechanics of Materials Laboratory Course” Proceedings of 2016 Mid-Years Engineering Education (MYEE), College Station, Texas, 2016.
- Davis, W. J., Ghanat, S.T., and Bower, K., “Undergraduate Engineering Student Perception of Professional Skill Preparedness” Proceedings of ASEE, Tuscaloosa, AL, 2016.
- Ghanat, S.T., Davis, J., and Michalaka, D., “Student Perception of Professional Skills Development in the Undergraduate Civil Engineering Curriculum at The Citadel” Proceedings of the Southeastern Conference of the American Society for Engineering Education, Tuscaloosa, AL, 2016.
- Ghanat, S.T., and J. Murden, “From Tensile Testing to Generating Crossword Puzzles” Proceedings of the Southeastern American Society for Engineering Education Annual Conference, Tuscaloosa, AL, 2016.
- Michalaka, D., Ghanat, S.T., Watson, M.K., Bower, k., and Welch, R. “Effects of Classroom Pedagogies Used in a Freshmen Course on Students’ Perception of the Sub-

Disciplines of Civil Engineering” Proceedings of the Southeastern Conference of the American Society for Engineering Education, Tuscaloosa, AL, 2016.

- Watson, M.K., Ghanat, S.T., Marley K, and Michalaka D, “Using Student Attitudes to Inform the Design of a First-Year Civil Engineering Course,” Proceedings of the Southeastern Conference of the American Society for Engineering Education, Gainesville FL, 2015.
- Ghanat, S.T., Brannan, K., Bower, K. and Welch, R, “Comparison of Direct and Indirect Assessment of a Summer, Engineering Economy course taught with Active Learning Techniques” Proceedings of the 2015 American Society for Engineering Education Annual Conference, Seattle, WA, 2015.
- Brannan K.P., and Ghanat, S.T., “Using Clickers in an Engineering Drawing Class” Proceedings of the Southeastern Conference of the American Society for Engineering Education, Gainesville FL, 2015.
- Watson, M.K., Ghanat, S.T., Michalaka, D., Bower, K., Welch, R., “Why Do Students Choose Engineering? Implications for First-Year Engineering Education” Proceedings of FYEE 2015, V-Tech, VA, 2015.
- Jaumé, S.C., Ghanat, S.T., “Translating Observed Weak Motion Site Response into Predicted Strong Motion Response on a Coastal Plain: An Experiment in Charleston, South Carolina,” 6th International Conference Earthquake Geotechnical Engineering 2015, New Zealand.
- Ghanat S.T., Kavazanjian, E, “Site-Specific Response Analysis of Non-Standard Sites,” Proceedings of the 5th International Conference of Earthquake Geotechnical Engineering, Santiago, Chile, 2011. Paper No SSRGH

PRESENTATIONS

- “Bias and Precision in Instructor Grading of Concept Inventories in Geotechnical Engineering Courses” 2020 American Society of Engineering Education Southeastern Section, Thomas Evans Best Paper Presentation, Auburn, AL.
- “Engagement in Practice: Adopting Service Learning and Community Engagement as a High Impact Teaching Strategy in Geo Engineering”, 2020 American Society for Engineering Education Annual Conference, Virtual.
- “Impact of Laboratory Section Size on Student Perception of Learning in Materials Laboratory Course”, 2020 American Society of Engineering Education, Zone II, Southeastern Section, Annual Conference, Auburn, AL.

- “Pedagogical Techniques Employed in a Freshman Seminar Course “ 2020 American Society of Engineering Education, Zone II, Southeastern Section, Annual Conference, Auburn, AL.
- “Impact of Projected Climate-Driven Sea Level Rise on Liquefaction Vulnerability in Charleston, SC”, ASCE-SC Section Meeting, April 19, 2019.
- “The Implications of Sea Level Rise for Increased Earthquake Risk”, National Adaptation Forum April 24, 2019 Madison, WI.
- “Bias and Precision in Instructor Grading of Concept Inventories in Geotechnical Engineering Courses” 2019 American Society of Engineering Education National Conference, Tampa, FL.
- “Designing a First-year Seminar Course to Promote Significant Learning” 2019 American Society of Engineering Education-Southeast, NC.
- “Assessing Students’ Perception of SURE Program at The Citadel” 2019 American Society of Engineering Education-Southeast, NC.
- “Study of Prior Exposure to Engineering Economics at The Citadel” 2019 American Society of Engineering Education-Southeast, NC.
- “Cookbook Approach vs. Discovery Approach in Mechanics of Materials Laboratory Course at The Citadel” 2019 American Society of Engineering Education-Southeast, NC.
- Pedagogical Techniques Employed in Foundation Design Course at The Citadel” 2019 American Society of Engineering Education-Southeast, NC.
- “The Influence of a Summer Lecture/Laboratory Course on Students’ Transition from a Two-Year to a Four-Year College” the proceeding of American Society of Engineering Education-Southeast, FL, 2018.
- “Lecture/Laboratory Instructor Pairings – Does it Make a Difference?” the Proceeding of American Society of Engineering Education-Southeast, FL, 2018.
- “Pedagogical Techniques employed in an Engineering Management Course” the proceeding of American Society of Engineering Education-Southeast, FL, 2018.
- “Various Assignments Employed in Geotechnical Engineering Laboratory” the proceeding of American Society of Engineering Education-Southeast, FL, 2018.

- “Assessing the Impact of Educational Factors on Conceptual Understanding of Geotechnical Topics” the proceeding of American Society of Engineering Education National Conference, Salt Lake City, UT, 2018.
- “Student Perception of A Summer Undergraduate Research Experience: Across the Disciplines,” the proceeding of American Society of Engineering Education National Conference, Salt Lake City UT, 2018.
- “Faculty Professional Development Workshop-Active Learning in the Classroom” the Center for Teaching Innovation at The Citadel in October 2018.
- “Engaging with Charleston Communities about Flood Risks and Impacts” presented in 2018 Carolinas Climate resilience Conference.
- “Assessment of Students’ Prior Knowledge and Learning in an Undergraduate Foundation Engineering Course” the proceeding of American Society of Engineering Education National Conference, Columbus, OH, 2017.
- “Study of Pre- and Post-Course Knowledge Surveys in an Engineering Economy Course” American Society of Engineering Education National Conference, Columbus, OH, 2017.
- “Earthquake and Liquefaction Hazards in Charleston” presented at DHS/NIHS workshop in Charleston, SC, 2017.
- “Fostering Critical Thinking” presented at the Center for Teaching Innovation at The Citadel in November, 2017.
- “A Multi-Institutional Study of Pre- and Post-course Knowledge Surveys in Undergraduate Geotechnical Engineering Courses” American Society for Engineering Education National Conference, New Orleans, LA, 2016.
- “Student Perception of Professional Skills Development in the Undergraduate Civil Engineering Curriculum at The Citadel” American Society for Engineering Education, Southeast, Tuscaloosa, AL, 2016.
- “From Tensile Testing to Generating Crossword Puzzles” American Society for Engineering Education, southeast, Tuscaloosa, AL, 2016.
- “Comparison of Direct and Indirect Assessment of a Summer, Engineering Economy course taught with Active Learning Techniques” Proceedings of the American Society for Engineering Education Annual Conference, Seattle, WA, 2015.

- “Comparison of Direct and Indirect Assessment of a Summer Engineering Economy course taught with Active Learning Techniques,” American Society of Engineering Education, Southeast, Gainesville, Florida, 2015.
- “Site-Specific Analysis of Deep Sediment Sites in Charleston, SC”, Seismological Society of America-Eastern Section (85th Annual), Charleston, South Carolina, 2014
- “Seismic Response of Shallow Bedrock Sites,” Earthquake Engineering Research Institute Annual Meeting, San Francisco, California, 2010
- “Comparison of Methods for Site Specific Site Response Assessment of Shallow and Deep Bedrock Sites,” Seismological Society of America Annual Meeting, Portland, Oregon, 2010

SEMINARS / WORKSHOPS / INVITED PRESENTATIONS

- 2018 Instructor for FHWA NHI course” Geotechnical Earthquake Engineering Aspects: LRFD Seismic Analysis and Design of Transportation Geotechnical Features” California Department of Transportation, Sacramento, CA.
- 2017 Instructor for FHWA NHI course” Geotechnical Earthquake Engineering Aspects: LRFD Seismic Analysis and Design of Structural Foundations and Earth Retaining Structures” Utah Department of Transportation, Salt Lake City, UT.
- 2016 Instructor for FHWA NHI course” Geotechnical Earthquake Engineering Aspects: LRFD Seismic Analysis and Design of Structural Foundations and Earth Retaining Structures” South Carolina Department of Transportation, Columbia, SC.
- 2016 SCEEP (South Carolina Earthquake Education and Preparedness) Workshop, led the Geotechnical Seismic Hazard portion of the Workshop, Charleston, SC, Dec. 2016
- 2016 “Innovative Pedagogies in Laboratory Courses” CASTLE at The Citadel
- 2016 “Developing a Promising Syllabus,” CASTLE at The Citadel.
- 2017 “Pedagogies Used in Engineering Economy Course” CASTLE at The Citadel.
- 2017 “Fostering Critical Thinking” Center for Teaching Innovation at The Citadel.
- 2018 “Active learning Workshop” Center for Teaching Innovation at The Citadel.

- 2018 “Faculty Professional Development-Freshman Seminar” The Citadel.
- 2019 “Faculty Professional Development-Freshman Seminar” The Citadel.
- 2019 “Active Learning” Center for Teaching Innovation at The Citadel.

HONORS AND AWARDS

- 2020 Recipient of Best Paper award, ASEE-SE
- 2019 Recipient of South Carolina ASCE Civil Engineer of Year Award
- 2019 Recipient of ASEE-SE Outstanding Teaching Award,
- 2018 Recipient of New Faculty Excellence Awards, for teaching, scholarship and teaching, The Citadel.
- 2017 Recipient of “Harry C. Saxe Teaching Award” in Civil Engineering Department, The Citadel.
- 2016 Recipient of Gerald R. Seeley Award from ASEE Civil Engineering Division (for best paper from faculty with less than five years of experience).
- 2015 Recipient of “Harry C. Saxe Teaching Award” in Civil Engineering Department, The Citadel.
- 2010 Ford Graduate Scholarship, Department of Civil and Environmental Engineering and the Division of Graduate Studies, ASU.
- 2008-09 University Graduate Fellowship, Department of Civil and Environmental Engineering and the Division of Graduate Studies, ASU

WORKSHOPS ATTENDED FOR PROFESSIONAL DEVELOPMENT

- 2017: Completed a 3.5 day National Highway Institute instructor development course. A required step to become a certified NHI Instructor, 2017.
- 2017: Annual Conference of American Society of Engineering Education, Columbus, OH.

- 2016: Annual Conference of American Society of Engineering Education, New Orleans, LA
- 2016: Completed The Citadel's Online Teaching Faculty Academy (Jan-March 2016)
- 2016: Hazus Conference sponsored by FEMA in Charleston, SC
- 2015: American Society of Engineering Education, Southeast, Gainesville, FL
- 2015: Participated in "Incorporating Formative Assessment Learning Activities into the Classroom" Workshop at The Citadel
- 2014: Charleston Urban Seismic Hazard Mapping Workshop sponsored by USGS-NEHRP Charleston, SC
- 2019: Charleston Urban Seismic Hazard Mapping Workshop sponsored by USGS-NEHRP Charleston, SC
- 2019: Annual Conference of American Society of Engineering Education, Tampa, FL
- 2014: Excellence in Civil Engineering Education (ExCEED) Mini-Workshop, Charleston, SC
- 2014: Annual Conference of American Society of Engineering Education, Indianapolis, IN, 2014
- 2014: Practitioner and Faculty Advisor Training Workshop American Society of Civil Engineers, Reston, VA
- 2012-2013: Weekly Teaching and Learning Pedagogical Series, Bucknell University, Lewisburg, PA
- 2012: Pedagogy Workshop focused on the syllabus creation, classroom management, development and assessment of learning objectives, and an introduction to the elements of good teaching, Bucknell University, Aug. 2012.
- 2012: Motivating Students Workshop focused on ways for new faculty to motivate students, Bucknell University, Lewisburg, PA, Sept. 2012
- 2012: Teaching Critical Thinking Workshop focused on ways for new faculty to teach critical thinking, Bucknell University, Lewisburg, PA, Oct. 2012

- 2012: Student Assessment Workshop focused on ways for new faculty to assess student learning, Bucknell University, Lewisburg, PA, Nov. 2012
- 2012-2013: Weekly Faculty Learning Series (FLS), Bucknell University
- 2013: Annual Conference of Geo-Institute, San Diego, CA
- 2013: Geotechnical Engineering Conference, Hershey, PA.
- 2010: Annual Conference of Earthquake Engineering Research Institute, San Francisco, CA
- 2010: Annual Conference of Seismological Society of America, Portland, OR
- 2010: International Conference on Earthquake Engineering, Toronto, Canada, 2010
- 2009: EERI Seminar on Next Generation Attenuation (NGA) Models, Los Angeles, CA,

SERVICE ACTIVITIES

Service to the Students:

- A. Faculty Advisor - American Society of Civil Engineers Student Chapter, The Citadel, 2014- 2017
 - Faculty Advisor, American Society of Civil Engineers (ASCE) - Served as Advisor to the ASCE Student Chapter - met with the student leaders, counseled them on plans and operations, attended and assisted in organizing meetings, assisted in scheduling guest speakers, planned trip to the Carolinas Conference in Charlotte, NC, and provided motivation and offered general guidance. Held pre-conference mandatory meetings to cover the logistics for Carolinas Conference. Maintained records of Chapter activities and membership.
 - Robert Ridgway Award Finalist for best Student Chapter. Recognized as finalist for four consecutive years (out of 340 colleges/universities with ASCE Student Chapter).
 - 2017 Letter of Recognition for Community Service: For The Citadels' exemplary community service benefiting others outside of the student chapter.

- Distinguished Chapter Award region 4 (2015, 2017, 2018): recognized as best Student Chapter out of 38 colleges/universities in 8-state region including: NC, SC, VA, WV, TN, KY, IN, AR.
- 2015-2017: Accompanied the newly selected officers to the ASCE Workshop for Student Chapter Leaders in Miami, FL (2015), Pittsburg, PA (2016), and Newark, NJ (2017). This is a regional/national event for students from over 100 schools to meet and exchange ideas. This event encourages the Chapter officers not only to improve our Student Chapter, but also helps them improve as leaders. At this Workshop, Chapter officers interact with national engineering leaders and learn effective approaches to organizing student chapter activities.
- 2015-2017: Planned trips to Carolinas Conference in 2015 (Atlanta, GA), 2016 (Greensboro, NC), and Charlotte, NC (2017). Assisted the Chapter Officers with Carolinas Conference registration process. Raised funds for the Carolinas Conference in 2015 and 2016. Arranged all accommodations for the Carolinas Conference in 2015 and 2016. Held pre-conference mandatory meetings to cover the logistics for Carolinas Conference.
- 2015-2017: Accompanied thirty-plus Cadets and evening students to the Carolinas Conference in Atlanta, Greensboro, and Charlotte. Thirty-plus students participated in all competitions against ten colleges and universities. Overall, The Citadel placed third in 2015, second in 2016 and first in 2017.
- 2015, The ASCE Chapter was a finalist for Ridgway Award (one of four finalists out of 324 universities internationally).
- 2016, The ASCE Chapter was a finalist for Ridgway Award (one of five finalists out of 340 universities internationally).
- 2017, The ASCE Chapter was a finalist for Ridgway Award (one of four finalists out of 340 universities internationally).
- 2018, The ASCE Chapter was a finalist for Ridgway Award (one of four finalists out of 340 universities internationally).
- 2018, The ASCE Student Chapter was recognized as Distinguish Chapter in Region 4 (out of 42 universities).
- 2017, The ASCE Student Chapter was recognized as Distinguish Chapter in Region 4 (out of 42 universities).
- 2015, The ASCE Student Chapter was recognized as Distinguish Chapter in Region 4 (out of 42 universities).

- 2017, 1st place, ASCE Carolinas Conference, 35-students participated in an academic conference with 11 competitions, including 12-universities from SC, NC and GA, hosted by UNC, Charlotte.
- 2016, 2nd place, ASCE Carolinas Conference, 33-students participated in an academic conference with 11 competitions, including 12-universities from SC, NC and GA, hosted by NC A&T St. Univ.
- 2015, 3rd place, ASCE Carolinas Conference, 35-students participated in an academic conference with 10 competitions, including 11-universities from SC, NC and GA, hosted by Georgia Tech.
- Served as a Faculty co-advisor to the ASCE Student Chapter Steel Bridge Team (May 2014). Transported the steel bridge from The Citadel to Akron, OH, the site of National Steel Bridge Design competition. Mentored and provided support to the team prior and during the competition. Transported the steel bridge back to The Citadel.
- Served as the faculty advisor to the Citadel Geotechnical Engineering Student Competition team who won 1st place at 2014 ASCE Carolinas Conference involving a water tank foundation design and an oral team presentation.
- Served as the faculty advisor to the Citadel Geotechnical Engineering Student Competition team who won 2nd place at 2017 ASCE Carolinas Conference involving a Geo-pile design
- Served as a faculty co-advisor to a Citadel student who placed 1st in ASCE's Daniel P. Mead Carolinas Conference Paper Award competition.
- Served as a faculty co-advisor to a Citadel student who placed 2nd in ASCE's Daniel P. Mead National Paper Award competition.
- Served as a faculty advisor to a Citadel Cadet who placed 1st in ASCE's Daniel P. Mead Carolinas Conference
- Served as a faculty advisor to a Citadel Evening student who placed 2nd in ASCE's Daniel P. Mead Carolinas Conference

- 2014-2017 Served as faculty advisor for activities on Engineers as Leaders held at Life Cycle Engineering as part of the Citadel Leadership Day program, The Citadel, Charleston, SC
- 2014-2015 Organized FE Review Course on behalf of the American Society for Civil Engineers (ASCE) Student Chapter, The Citadel
- 2014-2015 Provided review sessions for several FE exam subjects to The Citadel students, SC, 2014
- 2013 Provided FE Review sessions , Bucknell University, PA
- 2009-2011 Provided review sessions for FE exam to ASU students, review sessions were hosted by Chi Epsilon Chapter, AZ

B. Summary of Student Advising Responsibilities

- 2014-Present: CE Majors academic advisor (I have advised 15-33 CE majors per year). Have mentored them in registering for courses, dropping courses, and other key academic decisions. Focused on motivating my advisees and strengthening the advisor/advisee relationship. Emailed either congratulatory message to the advisees who made the gold star or Dean's list, or encouragement message to the struggling advisees. Met with struggling advisees and discussed the ways they can improve their study habits and grades.

C. Faculty Mentor to Summer Undergraduate Research Experience

- 2017-2020, served as a mentor to four Civil Engineering Evening students and one Cadet participating in Summer Undergraduate Research Experience (SURE) program at The Citadel. Ensured the SURE research project was well-defined and aligned with students' abilities. Thought through all of the necessary background knowledge and skills that a beginner would need in order to complete the task and thought these things explicitly to my mentees. Provided constructive feedback and encouragement and balanced criticism with positive reinforcement. Made myself available 7 days per week to answer questions via email, phone call, in-person. Set deadlines to communicate expectations and met weekly to check mentee progress. Made a timelines that the mentees needed to reach during the SURE program. Exposed mentees to the full research process and I had them read 3-4 articles that led to the current study. Encouraged mentees to participate in the ASEESE conference and Wofford research symposium in October to increase interest and improve academic development. Provided assistant with the construction of research poster. Helping mentees advance career by offering career guidance, encouraging

presentations and publications, and providing letters of recommendation. Providing moral support and encouragement and creating a supportive relationship with the mentees as well as serving as a role model for my mentees.

D. Service to Department and or School of Engineering

- 2014- Present: CEE Department Committee: FE Review Coordinator, Department Employment and Industrial Relations, The Citadel, Charleston, SC
- 2014-2018: “Discover The Citadel” informational event. Each year provided information about the five sub-disciplines of Civil Engineering to 20+ high school students and their parents.
- 2017-Present: Have served on the Financial Affairs Committee, The Citadel, Charleston, SC
- 2018-Present: Have served on University Research Office Advisory Council, The Citadel, Charleston, SC
- 2018-2019: Developed a Gen Ed Freshman Seminar course entitled Environmental Hazards.
- 2018-2019: Worked on developing a Service Learning and Community Engagement course.
- 2018-2019: Developed graduate Geotechnical Engineering courses
- 2019-Present: Have served on The Citadel Faculty Senate
- 2019-Present: Have served on the Citadel Graduate Curriculum Committee.
- 2020-Present: Have served on the Citadel Sabbatical Committee.
- 2019-present: Have served on Civil Engineering Assessment Committee.
- 2017-2018: Lead Developer for CONE 360 ((Soils and Foundations with lab) course. Prepared a rough draft of detailed syllabus with class schedule for CONE 360.
- 2016: Developed new course CIVL 412, Engineering Practice and Professional Licensure

- 2015: led the charge for the complete equipment overhaul of the geotechnical engineering lab. Turned the geotechnical lab back into a cutting edge hands-on teaching environment.
- 2014-Present: Have served as faculty advisor for activities on Engineers as Leaders held at Life Cycle Engineering as part of the Citadel Leadership Day program, The Citadel, Charleston, SC.
- 2016-present: mentored adjunct faculty in CE Department

E. Service to the Discipline:

- 2015: Engineering Design Division Chair - Engineering Design Drawing Division American Society of Engineering Education Southeastern Section.
- 2016: Instructional Division Secretary - Instructional Division of American Society of Engineering Education Southeastern Section
- 2017: Instructional Division Vice-Chair - Instructional Division of American Society of Engineering Education Southeastern Section
- 2018: Instructional Division Chair - Instructional Division of American Society of Engineering Education Southeastern Section, 2018
- 2019: Awards and Recognition Unit Secretary- Officer of Awards and Recognition unit of American Society of Engineering Education Southeastern Section
- 2019: Civil Engineering Division Secretary- Civil Engineering Division of American Society of Engineering Education Southeastern Section
- 2020: Awards and Recognition Unit Vice Chair- Officer of Awards and Recognition unit of American Society of Engineering Education Southeastern Section
- 2020: Civil Engineering Division Secretary- Civil Engineering Division of American Society of Engineering Education Southeastern Section.
- 2020: Community Engagement Division Chair Elect of American Society of Engineering Education.
- 2014: Reviewer, American Society of Engineering Education

- 2015: Reviewer, American Society of Engineering Education
- 2016: Reviewer, American Society of Engineering Education
- 2017: Reviewer, American Society of Engineering Education
- 2018: Reviewer, American Society of Engineering Education
- 2019: Reviewer, American Society of Engineering Education-Southeastern Section
- 2015: Reviewer, First-Year Engineering Experience Conference (FYEE)
- 2016: Reviewer, American Society of Engineering Education Southeastern Section
- 2013: Reviewer, the Earthquake Spectra Journal, Earthquake Engineering Research Institute

F. Service to the Community or Public

- 2019: Employed service learning and community engagement in Geotechnical Engineering course.
- 2014-2015: Technical Working Group for Charleston Urban Seismic Hazard Mapping, Charleston.
- 2014-Present: Member on the governing board of the SC Chapter of Pile Drivers Contractors Association, Charleston, SC
- 2015-Present: South Carolina Sea Grant Charleston Resilience Network Working Group
- 2015: Accompanied the ASCE Chapter Officers to the S.M.A.R.T night at Beech Hill Elementary School in Summerville, SC. We demonstrated to elementary students how engineers construct buildings to withstand damage from earthquakes. It was done by asking them to build their own structures with toothpicks and marshmallows. Students tested how earthquake-proof their buildings were by testing them on an earthquake simulated in a pan of Jell-O. They made models of buildings and conducted experiments to test how well their structures stood up under the stress of an earthquake. Explained to them that this was similar to what some civil engineers do as their jobs.
- 2014: Judged and Reviewed Research Papers and Presentations for the South Carolina Junior Academy of Science, Charleston, SC.

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

- 2007-Present: American Society of Civil Engineers
- 2016-Present: Tau Beta Pi The Engineering Honor Society
- 2012-Present: American Society of Engineering Education
- 2008-Present: Earthquake Engineering Research Institute
- 2008-Present: Seismological Society of America
- 2010-Present: Association of Environmental and Engineering Geologist
- 2014-Present: United States Universities Council on Geotechnical Education & Research
- 2014-Present: Pile Driving Contractors Association -SC Chapter
- 2015-Present: International Association of Foundation Drilling (ADSC-Southeast Chapter)