

CURRICULUM VITAE

NAME: **JOHN L DANIELS**

DATE: SEPTEMBER 29, 2022

RANK OR TITLE: **PROFESSOR**

DEPARTMENT: **CIVIL AND ENVIRONMENTAL ENGINEERING**

OFFICE LOCATION: EPIC 3250

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DATE OF FIRST EMPLOYMENT IN COE: **JANUARY 1, 2001**

DATE OF TENURE: (Year or Untenured) **2007**

EDUCATION

Doctor of Engineering (D.Eng.), Civil Engineering, University of Massachusetts at Lowell, Lowell, MA, 2001

Dissertation: Enhancement of clay-based barrier material resistance to desiccation stress and freeze-thaw cycling using aqueous polymer solutions

M.S. Civil Engineering, University of Massachusetts at Lowell, Lowell, MA, 1998

Thesis: Textural and mineralogical controls of heavy metal attenuation in barriers

B.S. Civil Engineering, Lehigh University, Bethlehem, PA, 1996

PROFESSIONAL CERTIFICATIONS

Registered Professional Civil Engineer, State of North Carolina, License No. 028018

EXPERIENCE

The University of North Carolina at Charlotte, Charlotte, NC

Department of Civil and Environmental Engineering

Professor and Chair, July 2018 - Present

Professor and Chair on Assignment, January 2017 – June 2018

Professor and Chair, July 2014 – December 2016

Associate Professor and Interim Chair, July 2012 – June 2014

Associate Professor, July 2007 – June 2012

Assistant Professor, July 2001 – June 2007

Visiting Research Assistant Professor, January 2001 – June 2001

U.S. National Science Foundation, Arlington, VA

Directorate for Engineering

Division of Civil, Mechanical and Manufacturing Innovation (CMMI)

Program Director, Geomechanics and Geomaterials (GEO MM) and Geotechnical Engineering Programs (GTE)

August 2009 – July 2010

Division of Engineering Education and Centers

Program Director and AAAS Science and Technology Policy Fellow

September 2007-August 2008

Renewed, September 2008-August 2009

TRC Companies, Inc. Lowell, MA

Project Engineer (1999-2000)

LEADERSHIP HIGHLIGHTS

UNC Charlotte – Department of Civil and Environmental Engineering

- Lead organizational unit with ~\$6.9 million in annual expenditures (~\$3.2M research, \$3.2M salaries, \$0.5M recurring budget), 24 faculty, 8 staff, >500 students, ~80,000 square feet of space)
- Led two department strategic planning efforts with faculty, staff, students and advisory board members (2014 and 2022)
- Co-led (with Yamilka Baez) college-wide strategic planning effort with faculty, staff, students and advisory board members (2022)
- Led two re-accreditation efforts (2016 and 2022).
- Created internal website to facilitate transparent and timely access to all department operations, inclusive of meeting agendas, minutes, decisions, requests as well as metrics for enrollment, research and accolades.
- Facilitated department wide pivot to COVID-19 restrictions for research (review and approval of access protocols) and teaching (provision of resources and sharing of best practices)
- Co-Developed (with Srinivas Pulugurtha) UNC Charlotte’s Aviation Initiative, a cross-disciplinary vision, in partnership with the Charlotte Douglas International Airport, to provide education, research, and outreach activities to increase economic development and social mobility.
- Supported student chapter success; with three separate ASCE chapter teams competing in three different national competitions in 2019 and 2022.
- Civil Engineering Graduate Program Ranking: Raised the program from being nationally unranked to 77th out of 150 graduate Civil Engineering programs in the country in 2022.
- Managed a sustainable enrollment growth of 17% from spring 2012 to spring 2022.
- Worked with faculty, administration and external stakeholders to create and propose a new BS in Environmental Engineering program. Expect to receive UNC system approval for fall 2023.
- Worked with faculty, administration and external stakeholders to create and propose a new Ph.D. program in Civil Engineering, first graduate in 2019.
- Encouraged a culture of teaching excellence; the department received the 2013-2014 Provost's Award for Teaching Excellence. The department continues to maintain a strong reputation for caring for the student learning.
- Created and implemented a distributed leadership model with new positions, including Research Director and Director for Student Learning and Assessment, complementing Area Coordinator(s), Undergraduate Director, Graduate Director, Associate Chair.
- Increased the Department staff by 100%. Reorganized the office and increased cross functional training of staff, while improving staff satisfaction. Retained staff through “great resignation”

- Increased department faculty by 33%, growing from 18 faculty in 2012 to 24 faculty in 2022.
- Increased overhead and discretionary funding by 143% and 1082%, respectively.
- Grew research funding from \$1.1M in 2012 to >\$3.3M in 2022.
- Successfully oversaw the transition of the entire CEE Department from Cameron Hall to EPIC, a \$76M building with 200,000 square feet (~1/3 of which is CEE).

U.S. National Science Foundation – Directorate for Engineering

- Program Officer and co-author of the Innovations in Engineering Education, Curriculum, and Infrastructure (IEECI) solicitation, which may be accessed at:
http://www.nsf.gov/pubs/2008/nsf08610/nsf08610.htm?govDel=USNSF_25
- Served as Program Director and Science and Technology Policy Fellow for National Science Foundation, Division of Engineering Education and Centers (EEC), September 2007 – August 2009 through AAAS Fellowship
- Served as Program Director for National Science Foundation, Division of Civil, Mechanical and Manufacturing Innovation (CMMI), August 2009 – July 2010 as a Federal Employee (Visiting Scientist, Engineer and Educator (VSEE) program.
- Singular responsibility for two separate programs, Geomechanics and Geomaterials (GEOMM) and Geotechnical Engineering (GTE). Each of these programs had an annual budget of approximately \$3 million, not including the American Recovery and Reinvestment Act (added ~\$1.5M per program)
- Responsibility for Rapid Response Research awards for geotechnical and tsunami reconnaissance after earthquakes in the American Samoa, Chile and Haiti.
- Lead oversight for two awards (0835414, 0835930, each with budgets of ~\$2 million) made as part of the Emerging Frontiers in Research and Innovation (EFRI) Resilient and Sustainable Infrastructure (RESIN) solicitation.
- Responsibility for a number of awards made through the Network for Earthquake Engineering Simulation, Major Research Instrumentation, Partnerships for International Research and Education (PIRE) and various other cross-cutting programs.
- Program Officer/Panel moderator for Engineering Research Centers Program (Civil Infrastructure related proposals)
- Prior to returning to the university, these responsibilities involved 203 ongoing awards, totaling \$73.1 million.

TEACHING

CEGR 2104 Surveying and Site Design (Spring 2005, 2006, 2007, Fall 2010, Spring 2011, Fall 2011, Spring 2012)

CEGR 2154, Design Project Laboratory (Spring 2021, Spring 2022)

CEGR 4234/5234 Hazardous Waste Management (Fall 2004, 2006)

CEGR 4145/5145 Groundwater Resources Engineering (Fall 2004, 2005, 2006, 2010, 2011, 2013, Spring 2012, Fall 2013, Fall 2021, Fall 2022)

CEGR 6146-001 Advanced Groundwater Analysis (Spring 2003)

CEGR 6090-D01 Soil Behavior (Fall 2002)

CEGR 6090-D01 Chemical Fate and Transport (Spring 2002, 2004, 2005, 2006)

CEGR 3258-001 Geotechnical Laboratory (Spring 2002, 2003, 2004)

CEGR 4090/5090-D03 Soil Improvement in Geotechnical and Geoenvironmental Engineering (Fall, 2001, 2003, 2005)

Co-Instructor:

CEGR 6090-H01 Design and Analysis of Waste Containment Systems (Spring, 2001)

ENGR 3295: Fall and Spring, 2012 - present

Students Advised:

Undergraduate Students:

1. Mr. David Ragan (U.S. Military Academy Cadet – Summer 2022 – Funded by NSF
2. Ms. Mya Mitchell (Levine Scholar) Summer 2021 – Funded by ongoing research fund
3. Ms. Ashley McGovern - Funded by Academic Affairs, Charlotte Research Scholars, (Summer 2013)
4. Mr. Kevin Baczynski - Funded by Academic Affairs, Charlotte Research Scholars, (Summer 2013)
5. Ms. Rebekah Vestal - Funded by Academic Affairs, Charlotte Research Scholars, (Summer 2012)
6. Mr. Chris Jordan - Funded by CEE Department (Summer 2011)
7. Mr. Benjamin Rupert - Funded by CEE Department (Summer 2011)
8. Mr. Matthew Mason - Funded through NSF REU Funds, (Summer 2007)
9. Ms. Katherine Calcaterra - Funded through NSF REU Funds, (Summer 2007)
10. Ms. Daniell Bagley - Funded through NSF REU Funds, (Summer 2007)
11. Ms. Arezou Eslaminejad - Funded through NSF REU Funds, (Summer 2007)
12. Mr. Koyett Miles - Funded through NSF REU Funds, (Summer 2006)
13. Ms. Elizabeth Matson - Funded through NSF REU Funds, (Summer 2006)
14. Mr. Guillaume Thizy - French Exchange Student - Funded by CEE Department, (Summer 2005)
15. Ms. Oksana van Engen - Funded by Duke Energy, (Spring/Summer, 2005)
16. Mr. Nicholas J. DeBlasis, - Funded by Duke Energy, NC DOT (Spring/Summer, 2005)
17. Ms. Teresa Hernandez Serrano - Spanish Exchange Student - Funded through residual external research funds (Summer 2004)
18. Ms. Ashlie Wood - Bioreactor Project, Funded by MAPS office (Summer 2004)
19. Mr. Harold Smith - Funded by CEE Department to assist with Laboratory Organization (Spring 2004)
20. Mr. Chris Clark - Funded by CEE Department to assist with Laboratory Organization (Spring 2004)
21. Mr. Gabriel Molina - Externally sponsored (Duke Energy) research (Fall 2003, Spring 2004)
22. Mr. Chris Friel - Externally sponsored (Duke Energy) research (Fall 2003, Spring 2004)
23. Mr. Robie Goins - Funded by U.S. Congressional Appropriation/Dept. of Education (Summer 2003, Fall 2003, Spring 2004)
24. Mr. Timothy Matthews - Funded by CEE Department (2002)
25. Mr. Jason Irish - Funded by COE (2002-2003)
26. Mr. Jacob Basinger - Funded by COE (2002)
27. Mr. Nicholas Parker - Funded by COE (2002-2003)
28. Mr. Tim Runion, Funded by CEE Department, (2001-2002)

Graduate Students:

Note: A Ph.D. program in Civil Engineering at UNC Charlotte was approved in Fall of 2019. Before that an interdisciplinary Ph.D. program in Infrastructure and Environmental Systems (INES) was available, as approved in 2005.

M.S./Ph.D. Major Advisor:

1. Mr. Adams Familusi (Ph.D. expected May 2027). Dissertation: TBD
2. Mr. Emmanuel Adeyanju (Ph.D. expected May 2024). Dissertation: Field Aspects of Engineered Water Repellency”
3. Mr. Micheal Uduebor (Ph.D. expected May 2023). Dissertation: “Engineered Water Repellency for Frost Heave Mitigation”
4. Ms. Mackenzie Malisher (MS thesis expected December 2022): “Effect of water

repellency, water content, and pore fluid concentration on the strength of frost susceptible soils”

5. Ms. Bethany Welch (MS project expected December 2022) “Improved strength prediction for stone reinforced soil improvement”
6. Mr. Sangram Lamichhane (MS project expected December 2022) “Groundwater modeling of the Colonial Pipeline Spill”
7. Mr. Ty Brooks, (MSCE May 2021). Project: “Water Repellency for Iowa Soils”
8. Mr. Jenberu Feyyisa (Ph.D. December 2017). Dissertation: “Engineered Water Repellency for Infiltration Control in Coal Fly Ash”
9. Mr. William Boivin (MSCE May 2017) Thesis: “Geotechnical and Environmental controls on multi-hearth furnace ash derived from biosolids”
10. Mr. Cedric Ruhl (MSCE May 2015) Project: “Use of hydrophobic additives to control infiltration in coal fly ash landfills”
11. Ms. Jenet Hattaway (MSCE 2015) Thesis: “Environmental controls on organo-silane modification of soils and coal combustion fly ash”
12. Mr. Chris Jordan (MSCE May 2014) Thesis: “Effect of temperature and weathering on the performance of hydrophobic additives”
13. Mr. Matthew Keatts (MSCE 2014) Thesis: “Geotechnical controls on organo-silane modification of soils and coal combustion fly ash”
14. Mr. Benjamin Bowers (MSCE August 2010) Thesis: “Use of calcium chloride to accelerate soil cement stabilization”
15. Mr. Kyle Baucom (MSCE December 2008) Thesis: “Effect of temperature on subgrade stabilization with lime”
16. Mr. Nicholas DeBlasis (MSCE December 2008) Thesis: “Effect of temperature on subgrade stabilization with cement”
17. Dr. Gautham Das (Ph.D. May 2008) Dissertation: “Ash weathering controls on contaminant leachability”
18. Ms. Marie Schmader (MSCE December 2005) Thesis: “Hydrodynamic controls on aerobic bioreactor performance”
19. Mr. Raghuram Cherukuri (MSCE May 2004) Thesis: Geotechnical properties of earthen barriers modified by exopolymeric substances
20. Mr. Gautham Das (MSCE May 2004) Thesis: “Use of permeable reactive soils for heavy metal containment”

Major Advisor, Co-advised with China University of Mining and Technology (CUMT):

1. Dr. Shaogang Lei (Ph.D. from CUMT, May 2009) Dissertation: “Monitoring and analyzing the mining impacts on key environmental elements in desert area” Degree awarded from CUMT, Xuzhou, China through a joint collaboration. Dr. Lei spent two years in residence as Visiting Scholar at UNC Charlotte, funded by NC Department of Transportation for which I was the Principal Investigator. This research formed the basis of his Ph.D.

Ph.D. Committee / Examination Member (at UNC Charlotte unless indicated):

1. Mr. Mohammad Wasif Naqvi, Ph.D. expected 2023 Michigan State University (through collaborative NSF award 1928813)
2. Mr. Md Fyaz Sadiq, Ph.D. expected 2024 Michigan State University (through collaborative NSF award 1928813)
3. Mr. Xing Xin, Ph.D. September 2022. Dissertation: “Effect of Interfacial Properties on Soil Water Infiltration” The University of Hong Kong.
4. Mr. Rui He, Ph.D. December 2021. Dissertation: “Experimental study and numerical modeling of the performance of flue gas desulfurization (FGD) brine/flyash co-disposal”

5. Mr. Abhisek Manikonda, Ph.D December 2020. Dissertation: “Synthesis of layered double hydroxides to sequester halides from flue gas desulfurization wastewater concentrate.”
6. Mr. Livingstone Dumenu, Ph.D 2019. Dissertation: “Water repellency effect on unsaturated properties of compacted coal combustion residuals”
7. Dr. Fabien Besnard. Ph.D. May 2013, INES, Dissertation: “Evaluation of waste gypsum wallboard from construction site as a soil amendment and as a part of a carbon sequestration system.”
8. Dr. Ping Lu, Ph.D. December 2012, INES, Dissertation: “Cryptosporidium removal from swimming pool water”
9. Dr. Olanrewaju Sanusi, Ph.D. December 2012, INES, Dissertation: “Geopolymerization of fly ash”
10. Dr. Zhaochun Meng, Ph.D. May 2012, INES, Dissertation: “TMDL modeling methodology for incorporation of the linear highway environment”
11. Dr. Humphrey Zebulun, Ph.D. May 2009, INES, Dissertation: “Biokinetic processes of extracellular polysaccharide stabilization of surface soils against dust generation”
12. Dr. Gustavo Borel, Ph.D. December 2007, INES, Dissertation: “Linking HAZUS-MH risk analysis methodology to contaminant transport.”
13. Dr. Mutiu G. Ayoola, Ph.D. December 2006, INES, Dissertation: “Evolution of geotechnical properties of recycled granular waste media”

Ph.D. Committee Member, Appointed by Graduate School:

1. Ms. Kara Tiller, Ph.D. May 2015 in Geography and Earth Sciences Department
2. Dr. Jonathan Kozar, Ph.D. December 2012 in Geography and Earth Sciences Department
3. Dr. Shawnee Wakeman, Ph.D. May 2005. Department of Special Education
4. Dr. Eric Larsen, Ph.D. December 2005 Department of Mechanical Engineering
5. Dr. Scott A. Thomas, Ph.D. December 2004, Department of Electrical and Computer Engineering

Post-Doctoral Researcher:

1. Dr. Yunesh Saulick, (May 2021-present)
2. Dr. Rui He (January 2022-June 2022)
3. Dr. Joon Lee, Visiting Professor from the University of Seoul, Korea (February 2022-present)
4. Dr. Hai Pu, Visiting Scholar from China University of Mining and Technology, August – November 2009

M.S. Committee Member:

1. Mr. Jared Forehand (MSCE May 2021) Project: “Characterization of halide release from compacted coal combustion residuals/flue gas desulfurization (FGD) wastewater reject
2. Mr. Austin Willoughby (MSCE December 2018) “Surface complexation modeling of coal combustion residuals constituents on natural hydrous ferric oxide”
3. Mr. Will Shull “Development and Implementation of Hydrodynamic Assessment and Operating Tools in Full-Scale Swimming Pools” (MSCE 2014)
4. Mr. David Yarbrough, “Artificially-induced circulation in lakes” (MSCE December 2013)
5. Mr. Acosta Carlos (MSCE Summer 2012) “Static and dynamic properties of cemented Nevada sand and kaolinite Nevada sand mixtures for centrifuge sloping ground models”
6. Mr. David Bost (MSCE May 2012) “Development of a new method for predicting oxygen reaeration in a three-dimensional water quality model”
7. Mr. Olufemi Oladayo Aborisade (MSCE May 2012) “Particle removal during drinking and recreational water filtration”

8. Ms. Arezou Eslaminejad (MSCE May 2011) “Laboratory evaluation of performance improvement from deep layers of lime-stabilized subgrade soils”
9. Ms. Rebecca Turner (MSCE May 2011) “Waste drywall and plant synergy for carbon sequestration”
10. Mr. Marvin Battle, (MSCE December 2009) Project: “The effects of ferric chloride and aluminum sulfate coagulation on the inactivation of waterborne MS-2 bacteriophage using ultraviolet light”
11. Ms. Ashlie Wood (MSCE May 2008) Thesis: “Evaluation of the suitability of new construction wallboard scrap for amending Mecklenburg County soils”
12. Mr. Michael S. Young, (MS Geology December 2007) Project: “Groundwater model of a chlorinated solvent contaminated site in Jacksonville, NC”
13. Mr. Benoit Duclaud (MSCE December 2007) Thesis: “Improved reaeration prediction for the lower Cape Fear river estuary, North Carolina”
14. Mr. Christopher J.L. Stahl (MSCE August 2006) Thesis: “Laboratory scale aerobic bioreactor-geoenvironmental aspects”
15. Mr. Dinakar Nimmala (MSCE May 2006) Project: “Comparison of two and three-dimensional approaches to modeling the rebound of phytoplankton population densities following an estuarine flushing event”
16. Ms. Mary Fabian (MSCE May 2006) Thesis: “The architecture of methanotroph biofilms in landfill soil”
17. Ms. Kellie Hedrick (MSCE December 2005) Project: “McAlpine sewer system load study mass balance approach”
18. Mr. Marcus Allen Cottingham (MSCE May 2006) Thesis: “Evaluation of instrumentation and pressuremeter based P-Y curves for laterally loaded deep foundations”
19. Mrs. Jessica Montgomery (MSCE December 2005) Thesis: “Waste biodegradation in a meso-scale aerobic bioreactor”
20. Mr. Carl Wilson (MSCE May 2005) Project: “Sanitary sewer overflow remediation for Charlotte-Mecklenburg Utilities wastewater collection system”
21. Mr. Gustavo Borel (MSCE May 2005) Thesis: “Evaporation-induced transport of aqueous-phase polymer molecules to desiccating soil surfaces”
22. Ms. Bavhana Sinha (MSCE December 2002) Thesis: “Numerical optimization of water quality parameter to maximize calibration performance”
23. Mr. Murugesan Venkatapathi (MSME December 2002) Thesis: “A portable fluorometer for kinetic applications”

Independent Studies/Projects Directed:

1. Santana, H. “Design and testing of an apparatus for measuring breakthrough pressure of hydrophobic soils and byproducts”, Spring 2013
2. Boivin, W. “Educational module development: Use of drill rig to demonstrate soil sampling, characterization and well installation”, Spring 2013
3. Ms. Rebekah Vestal “Leachability assessment of coal fly ash”, Spring 2012
4. Mr. Olanrewaju Sanusi “Effect of clay content on calcium chloride modified soil cement”, Independent study, Fall 2010-Spring 2011
5. Mr. Ben Bowers, Independent Study “Organo-Silane for management of coal combustion fly ash” Spring 2010. (with Dr. Shenen Chen)
6. Mr. David Dry, Independent Study: “Geotechnical properties of FGD/Ash Material” Spring 2006
7. Ms. Rebekah Schrock, Independent Study: “Geotechnical properties of FGD/Ash material” Spring 2006
8. Mr. Mark Hill, Independent Study: “Ash leaching as a function of pH and column flowrate” Summer 2005
9. Mr. Gautham Das, Independent Study: “Leaching characteristics of flue gas desulfurization sludge” 2002

10. Mr. Raghuram Cherukuri, Independent Study: “Geotechnical and geoenvironmental engineering aspects of geothermal energy” 2001-2002
11. Mr. Dinakar Nimmala, Independent Study “The influence of biofilm on the heavy metal adsorption characteristics of Piedmont Soils” 2003-2004
12. Mr. Gairy Taylor, Project: “The influence of methanotrophic bacteria and biofilm production on the shear strength of landfill cover soils” 2002

RESEARCH ACCOMPLISHMENTS

Publications

Textbooks

1. Fang, H.Y. and **Daniels, J.L.** 2006. *Introductory Geotechnical Engineering: An Environmental Perspective*, Taylor and Francis, Ltd ISBN: 0415304016 (hardback), ISBN: 0415304024 (paperback)

Journals

1. Mahedi, M., Satvati, S., Cetin, B., and **Daniels, J.L.** (2020) “Chemically Induced Soil Water Repellency and the Freeze-Thaw Durability of Soils”, *ASCE Journal of Cold Regions Engineering*, 34(3) pp. 1-7.
2. Zhang, Y., **Daniels, J.L.**, Cetin, B., Baucom, I.K. (2020) “Effect of Temperature on pH, Conductivity, and Strength of Lime-Stabilized Soil” *ASCE Journal of Materials in Civil Engineering* Vol. 32 (3), pp. 1-12.
3. Feyyisa, J.L. and **Daniels, J.L.** (2019) “The role of ash mineralogy on breakthrough pressure and contact angle: a statistical evaluation” *Coal Combustion and Gasification Products*, Vol. 11, pp. 45-58
4. Feyyisa, J.L., **Daniels, J.L.**, Pando, M.A., Ogunro, V.O. (2019) “Relationship between breakthrough pressure and contact angle for organo-silane treated coal fly ash” *Environmental Technology and Innovation*, 14, 1-20.
5. **Daniels, J.L.** and Das, G.P. (2018) “Influence of Flowrate on Leachability, *Coal Combustion and Gasification Products*” Vol. 10, pp. 34-40.
6. Keatts, M.I., **Daniels, J.L.**, Langley, W.G., Pando, M.A. and Ogunro, V.O. (2018) “Apparent Contact Angle and Water Entry Head Measurements for Organo-Silane Modified Sand and Coal Fly Ash”, *ASCE Journal of Geotechnical and Geoenvironmental Engineering* 144 (6) 1-9.
7. Feyyisa, J.L., **Daniels, J.L.**, and Pando, M.P. (2017) “Contact Angle Measurements for use in Specifying Organo-Silane Modified Coal Combustion Fly Ash, *ASCE Journal of Materials in Civil Engineering*, 29(9) 1-14.
8. Jordan, C.S., **Daniels, J.L.**, Langley, W, (2017) “The Effects of Temperature and Wet-Dry Cycling on Water Repellent Soils”, *Environmental Geotechnics*, 4 (4), Institution of Civil Engineers Publishing, United Kingdom,
<http://www.icvirtuallibrary.com/content/article/10.1680/envgeo.14.00032>
9. **Daniels, J.L.** (2016) “Coal Ash and Groundwater: Past, Present and Future Implications of Regulation”. *William & Mary Environmental Law and Policy Review*, 40 (2), 535-555.
10. Wu, J., Tang, C., Gao, L., Jiang, H. and **Daniels, J.L.** (2014) “Effect of ground covers on soil temperature in urban and rural areas” *Environmental and Engineering Geoscience* 20 (3), 225-237.
11. Bowers, B.F., **Daniels, J.L.** and Anderson, J. B. (2014) “Field Considerations for Calcium Chloride Modification of Soil-cement” *Journal of Materials in Civil Engineering* 26 (1), 65-70.
12. Tang, Chao-Seng, Shi, B., Gao, L., **Daniels, J.L.**, Jian, H-T. and Liu, C. (2011) “Urbanization effect on soil temperature in Nanjing, China” *Journal of Energy and Buildings Energy and*

- Buildings 43(11):3090-3098.
13. Lei, S., Bian, Z., **Daniels, J.L.**, He, X. (2010) “Spatio-temporal variation of vegetation in an arid and vulnerable coal mining region” *Mining Science and Technology*, 20(3) 485-490
 14. Bian, Z., Inyang, H.I., **Daniels, J.L.**, Otto, F. and Struthers, S. (2010) “Environmental issues from coal mining and their solutions” *Mining Science and Technology*, 20(2) 215-223
 15. Lei, S., **Daniels, J.L.**, Bian, Z. and Wainaina, N. (2010) “Improved soil temperature modeling” *Environmental Earth Science*, 62(6), 1123-1130
 16. **Daniels, J.L.**, Wood, S.L. and Kemnitzer, S.C. (2011) “The role of NSF’s Department Level Reform program in engineering education practice and research” *Advances in Engineering Education*, 2(4), 1-15.
 17. **Daniels, J.L.**, Mehta, P., Vaden, M., Sweem, D., Mason, M.D. Zavareh, M. and Ogunro, V.O. (2009) “Nano-scale organo-silane applications in geotechnical and geoenvironmental engineering” *Journal of Terraspace Science and Engineering* 1(1): 21-30
 18. Fang, H.Y. and **Daniels, J.L.** (2007) “Tyre Aggregate Applications in Geotechnical and Geoenvironmental Engineering” *International Journal of Environment and Waste Management* 1 (2/3), pp. 159-178
 19. **Daniels, J.L.**, Serrano, Hernandez, M.T.S., Das, G. and Bae, S. (2006) “Coastal pollution mitigation with lime and zero valent iron” *Journal of Marine Georesources and Geotechnology*, Special Issue on Taiwan Straits Tunnel (TST) Project, 24 (3), 183-191
 20. **Daniels, J.L.** and Das, G.P. (2006) “Leaching Behavior of Lime-Fly Ash Mixtures” *Journal of Environmental Engineering Science* Vol. 23, No. 1, pp. 42-52
 21. **Daniels, J.L.**, Cherukuri, R., Hilger, H.A., Oliver, J.D. and Bin, S. (2005) “Engineering Behavior of Biofilm Amended Earthen Barriers Used in Waste Containment” *Management of Environmental Quality, An International Journal*, 16 (6), 691-704
 22. **Daniels, J.L.** and Cherukuri, R. (2005) “The influence of biofilm on barrier material performance” *ASCE Practice Periodical of Hazardous, Toxic and Radioactive Waste Management*, 9 (4), 245-252
 23. **Daniels, J.L.**, Inyang, H.I. and Chien, C.C. (2004) “Verification of heavy metal sorption in soil-bentonite using SEM/EDXS” *ASCE Journal of Environmental Engineering*, 130 (8), 910-917
 24. **Daniels, J.L.**, Inyang, H.I. and Brochu, M. (2004) “Specific surface area of barrier mixtures at various outgas temperatures” *ASCE Journal of Environmental Engineering*, 130 (8), 867-872
 25. **Daniels, J.L.** and Inyang, H.I. (2004) “Contaminant barrier material textural response to interaction with aqueous polymers” *ASCE Journal Materials in Civil Engineering*, 16 (3), 265-275
 26. Fang, H.Y., **Daniels, J.L.** and Kim, T.H. (2004) “Pollution intrusion on soil-pavement system” *ASCE Journal of Transportation Engineering*” 130 (4), 526-534
 27. **Daniels, J.L.**, Inyang, H.I. and Iskandar, I. (2003) “Durability of Boston Blue Clay in waste containment applications” *ASCE Journal of Materials in Civil Engineering*, 15 (2), 144-152
 28. **Daniels, J.L.**, Chien, C.C., Ogunro, V.O. and Inyang, H.I. (2000) “A comparative analysis of contaminant migration models using barrier material data” *Journal of Soil and Sediment Contamination* 9 (5), 487-501

Peer-Reviewed Proceedings, Encyclopedia Articles, Book Chapters

1. Naqvi, M.W., Sadiq, M.F., Cetin, B., Uduebor, M., and **Daniels, J.L.** (2023) “Frost Susceptibility Evaluation of Clay and Sandy Soils” ASCE GeoCongress 2023, Los Angeles, CA, (accepted)
2. Uduebor, M. Adeyanju, E., Saulick, Y., **Daniels, J.L.**, and Cetin, B. (2022) “A Review of Innovative Frost Heave Mitigation Techniques for Road Pavements” ASCE International Conference on Transportation and Development 2022, Seattle WA, May 31-June 3 2022

- (accepted).
3. Naqvi, M.W., Sadiq, M.F., Cetin, B., Uduebor, and **Daniels, J.L.** (2022) “Investigating Frost Action in Soils” ASCE GeoCongress 2022: State of the Art & Practice in Geotechnical Engineering, Geotechnical Special Publication 336, ASCE, Reston, VA, pp. 257-267.
 4. Brooks, T., **Daniels, J.L.**, Uduebor, M., Cetin, B., and Naqvi, M.W. (2022) “Engineered Water Repellency for Mitigating Frost Action in Iowa Soils”. ASCE GeoCongress 2022: State of the Art & Practice in Geotechnical Engineering, Geotechnical Special Publication 331 ASCE, Reston, VA, pp. 448-456.
 5. Uduebor, M., **Daniels, J.L.**, Naqvi, M.W., and Cetin, B. (2022). “Engineered Water Repellency in Frost Susceptible Soils” ASCE GeoCongress 2022: State of the Art & Practice in Geotechnical Engineering, Geotechnical Special Publication 331 ASCE, Reston, VA, pp. 457-466.
 6. **Daniels, J.L.**, Langley, W.G., Uduebor, M., Cetin, B. (2021). “Engineered water repellency for frost mitigation: Practical modeling considerations” Geotechnical Engineering for Extreme Events , Geo-Extreme 2021, Geotechnical Special Publication 330 ASCE, Reston, VA, pp. 385-391.
 7. **Daniels J.L.** (2020) Engineered Water Repellency for Applications in Environmental Geotechnology. In: Reddy K.R., Agnihotri A.K., Yukselen-Aksoy Y., Dubey B.K., Bansal A. (eds) Sustainable Environmental Geotechnics. Lecture Notes in Civil Engineering, vol 89. Springer, Cham. https://doi.org/10.1007/978-3-030-51350-4_6
 8. **Daniels, J.L.** and Carriker, N.E. (2017) Chapter 19: Environmental Impact and Corrective Action, In: Coal Combustion Products (CCP's): Characteristics, Utilization and Beneficiation, Robl, T., Jones, R., Oberlink, A., Editors, Elsevier.
 9. Khire, M.V., Saghaei, B., **Daniels, J.L.**, and Langley, W.G. (2017). Water Balance of Coal Ash Ponds, Geotechnical Special Publication No. 276, pp. 397-402, ASCE, Reston, VA.
 10. Dumenu, L., Pando, M.A., Ogunro, V.O., **Daniels, J.L.**, Moid, M.I. and Rodriguez, C. (2017) “Water Retention Characteristics of Compacted Coal Combustion Residuals”, Geotechnical Special Publication No. 276, pp. 403-413, ASCE, Reston, VA.
 11. Feyyisa, J.L. and **Daniels, J.L.** (2016) “A Dynamic Contact Angle Measurement Technique for Water Repellent Coal Fly Ash (CFA),” Geotechnical Special Publication No. 271, pp. 925-938, ASCE Reston, VA.
 12. **Daniels, J.L.** and Das, G. (2014) Practical Leachability and Sorption Considerations for Ash Management. *Geo-Congress 2014* ASCE Reston/VA, pp. 362-376.
 13. Lei, S., **Daniels, J.L.** and Bowers, B.F. (2013) “Tube suction test for evaluating moisture susceptibility resulting from calcium chloride” Geotechnical Practice Publication "Geomechanics and Transportation Geotechnology", B. Huang, B.F. Bowers and G. Mei, Editors, ASCE Reston/VA, pp. 76-82.
 14. Bowers, B.F., **Daniels, J.L.**, Lei, S. and DeBlasis, N.J. (2013) “Additives for soil-cement stabilization” Geotechnical Practice Publication "Geomechanics and Transportation Geotechnology", B. Huang, B.F. Bowers and G. Mei, Editors, ASCE Reston/VA pp. 68-75.
 15. **Daniels, J.L.** (2012) “Science and Engineering Education: A Perspective from the U.S. National Science Foundation” Invited Paper for Special Volume dedicated to the 100th Jubilee of Madame Wu Chien-Shiung, Southeast University, Nanjing, China, G.C. Sih and A.Q. Li, Eds., pp. 81-107., Global Sciencetech Publishing Company, ISBN 978-0-615-57310-6
 16. **Daniels, J.L.**, Lei, S., Bian, Z. and Bowers, B.F. (2010) “Air-Soil Relationships for Lime and Cement Stabilized Subgrades” *GeoShanghai*, Geotechnical Special Publication, ASCE Reston/VA, Paving Materials and Pavement Analysis (GSP 203), pp. 341-346
 17. **Daniels, J.L.**, Janardhanam, R., Starnes, J., DeBlasis, N. and Miles, K (2009). “Cold-weather concreting technology for ground modification” *Contemporary topics in ground modification, problem soils, and geo-support*, (GSP 187) ASCE, Reston/VA 273-280
 18. **Daniels, J.L.**, Hourani, M.S. (2009). “Soil improvement with organo-silane” *Advances in Ground Improvement*, (GSP 188) ASCE Reston/VA: 217-224
 19. **Daniels, J.L.**, Cherukuri, R. and Ogunro, V.O. (2009) “Consolidation and Strength Characteristics of Biofilm Amended Barrier Soils” *Appropriate Technologies for Environmental*

- Protection in the Developing World*; Yanful, Ernest K. (Ed.), Hardcover, ISBN: 978-1-4020-9138-4, pp. 265-279
20. **Daniels, J.L.** and Das, G.P. (2008) “Field scale characterization of coal combustion fly ash stabilized with lime and FGD gypsum” *GeoCongress 2008: Geotechnics of Waste Management and Remediation* (GSP 177), ASCE, Reston/VA: 684-691
 21. **Daniels, J.L.** and Janardhanam, R. (2007). “Cold-weather subgrade stabilization” *Soil Improvement*, (GSP 172), ASCE, Reston/VA: 1-10
 22. Nasipuri, A., Subramanian, K.R., Ogunro, V.O., **Daniels, J.L.** and Hilger, H.A. (2006). “Development of a wireless sensor network for monitoring a bioreactor landfill” ASCE Geo Congress 2006, February 26- March 1, 2006, Atlanta, GA, USA
 23. **Daniels, J.L.**, Schmader, M.B., Ogunro, V.O. and Hilger, H.H. (2005) “Laboratory-Scale Aerobic Landfill Bioreactor: A Precursor to Modeling and Full-Scale Investigation” *In Geo-Frontiers 2005 (Geotechnical Special Publications 130-142 & GRI-18; Proceedings of the Geo-Frontiers 2005 Congress, January 24-26, 2005, Austin, Texas, CD-ROM, ISBN 078440769X)*
 24. Galvao, C.B., **Daniels, J.L.** and Inyang, H.I. (2004) Contaminated site characterization and monitoring, In: *Environmental Monitoring, Theme 6.38 of the Encyclopedia of Life Support Systems*, Daniels, J.L. and Inyang, H.I. Eds., United Nations Educational, Scientific and Cultural Organization
 25. **Daniels, J.L.** and Bae, S-Y. (2004) Laboratory-based analytical technologies, In: *Environmental Monitoring, Theme 6.38 of the Encyclopedia of Life Support Systems*, Daniels, J.L. and Inyang, H.I. Eds., United Nations Educational, Scientific and Cultural Organization
 26. Inyang, H.I., **Daniels, J.L.** and Chien, C.C. (2000) “Methods of analysis of contaminant migration in barrier materials” In: *Remediation of Hazardous Waste Contaminated Soils*, 2nd Edition, Wise et al., Eds., pp. 63-82
 27. Inyang, H.I., **Daniels, J.L.** and Ogunro, V.O. (1998) “Engineering controls for risk reduction at Brownfield sites” *Proceedings of ASCE GeoCongress*, Oct. 18-21, 1998, Benson et al., Eds., Boston, MA, pp 229-252
 28. Fang, H.Y., **Daniels, J.L.** and Inyang, H.I. (1997) “Enviro-geotechnical considerations in waste containment system design and analysis” *Proceedings of the 1997 International Containment Technology Conference*, St. Petersburg, FL, pp. 414-420

Other Significant Publications and Documents

1. Saulick, Y., **Daniels, J.L.**, Cetin, B., Cetin, K., and Mitra, D. (2023). “Modeling frost depth in soils using data-driven methods” ASCE GeoCongress 2023, March 26-29, 2023, Los Angeles, CA (abstract accepted, paper in preparation).
2. Saulick, Y, **Daniels, J.L.**, Uduebor, M., and Adeyanju, E. (2022). “Osmotic and matric controls on water potential in ash from TVA’s Kingston Fossil Plant” World of Coal Ash, Covington, KY, May 16-19, 2022.
3. **Daniels, J.L.**, Ogunro, V.O., Pando, M.A., Dumenu, L., and Feyyisa, J.L. (2019) “Engineered water repellency: An evolving approach to infiltration control” World of Coal Ash Conference, St. Louis, MO, May 2019
4. **Daniels, J.L.** (2015) Coal and Sustainable Development, Proceedings of the International Conference on Infrastructure Development for Environmental Conservation and Sustenance (INDECS-15), Adhiyamaan College of Engineering, Hosur, India, October 28-30, 2015, pp. 16-20.
5. **Daniels, J.L.** (2014) “Lose it by using it, A plan for coal fly ash from the 33 ponds throughout North Carolina”, Featured Story, *The Professional Engineer, The magazine of North Carolina engineering*, Summer, 2014, pp. 6-12.
6. **Daniels, J.L.**, Langley, W.G. (2013) “Groundwater modeling report: Monitoring wells MW-9, MW-10, MW-13, Riverbend Steam Station. Submitted to Duke Energy as part of their compliance with regulatory requirements set by the North Carolina Department of the Environment and Natural Resources, June 21, 2013.

7. Hattaway, J., Hardin, C.D. and **Daniels, J.L.** (2013) “Recommended Guidelines for the Use and Application of the Leaching Environmental Assessment Framework (LEAF) for Coal Combustion Residuals” World of Coal Ash Conference, Lexington, KY, April 22-25, 2013.
8. **Daniels, J.L.** (2012) Expert Witness Report, Headwaters Resources, Inc. v. Illinois Union Insurance Company et al. Case 2:09-cv-01079-DB
9. **Daniels, J.L.** (2011) “Coal and Sustainable Science Policy” Keynote Lecture Paper, Chongqing, China. The Sixth International Conference of International Center For Sustainability, Accountability, And Eco-Affordability of Large Structures (ICSAELS), October 11-15, 2011.
10. Hardin, C.D. and **Daniels, J.L.** (2011) “Preserving Structural Fill and Mine Reclamation as Acceptable Beneficial Reuse of CCRs” *World of Coal Ash Conference*, Denver, CO, May 9-12, 2011
11. **Daniels, J.L.**, Hourani, M.S. and Harper, L.S. (2009) “Organo-silane chemistry: A water repellent technology for coal ash and soils” *World of Coal Ash Conference*, Lexington, KY, May 4-7, 2009 <http://www.flyash.info/2009/025-daniels2009.pdf>
12. Sanusi, O., Tempest, B., Ogunro, V.O., Gergely, J and **Daniels, J.L.** (2009) “Effect of unreacted hydroxyl ion on release of trace metals from geopolymer concrete” *World of Coal Ash Conference*, Lexington, KY, May 4-7, 2009 <http://www.worldofcoalash.org/2009/ashpdf/a072-sanusi2009.pdf>
13. **Daniels, J.L.** (2007) “Comments and Recommendations - Land Subsidence and Reclamation in Xuzhou and Huaibei, China”, a technical report prepared in response to a reconnaissance trip made to Xuzhou, Huaibei and Beijing, China, May 9–18, 2007
14. **Daniels, J.L.** and Das, G.P. (2007) “Site-Specific Distribution Coefficients for Preliminary Modeling Purposes” for 8th *International Conference on Waste Management, Environmental Geotechnology and Global Sustainable Development*, Ljubljana, SLOVENIA, August 28-30, 2007 http://www.srdit.si/gzo07/papers/62JLDaniels_FinalPaperGzO07.pdf
15. **Daniels, J.L.**, Hill, M.E., Das, G.P. and Ogunro, V.O. (2006) “Influence of residence time on fly ash leachability: long-term implications” *23rd Annual International Pittsburgh Coal Conference*, Pittsburgh, PA, USA, September 25-28, 2006
16. Ogunro, V.O. Ayoola, M.G., Inyang, H.I., Anderson, B.J. and **Daniels, J.L.** (2006) “On the geotechnical properties of coal combustion by-products under different stress conditions” *23rd Annual International Pittsburgh Coal Conference*, Pittsburgh, PA, USA, September 25-28, 2006.
17. **Daniels, J.L.** and Nimmala, V.D. (2006) “Use of limestone as a low-cost additive for cadmium removal” *International Conference on Infrastructure Development and the Environment*, Abuja, Nigeria, September 10-15, 2006
18. **Daniels, J.L.**, Taylor, G. and Hilger, H.A. (2006) “Shear strength of a landfill cover soil as a function of methane exposure and biofilm production” *International Conference on Infrastructure Development and the Environment*, Abuja, Nigeria, September 10-15, 2006.
19. Fang, H-Y. and **Daniels, J.L.** (2006) “New Generation Material System for Landfill Liners & Leachate Controlling Facilities” *International Conference on Infrastructure Development and the Environment*, Abuja, Nigeria, September 10-15, 2006
20. **Daniels, J.L.** and Das, G.P. (2005) “The need for field-relevant leachability mass transfer coefficients” *22nd Annual International Pittsburgh Coal Conference*, Pittsburgh, PA, USA, September 12-15, 2005, pp. 1-10
21. **Daniels, J.L.** (2005) Compliance Demonstration Report - Revised (2-Layer, 3D) Groundwater Modeling, Addendum Report to S&ME, Inc., Charlotte, NC, Completed June 2005
22. **Daniels, J.L.** and Janardhanam, R. (2005) Subgrade Stabilization Alternatives – Technical Assistance Report to North Carolina Department of Transportation, Raleigh, NC, Completed 6/30/05
23. **Daniels, J.L.** (2005) Leachability Evaluation of Mixtures of FGD Material and Fly Ash, Technical Report to Duke Energy, Completed 7/8/05
24. **Daniels, J.L.** (2005) Site-Specific Distribution Coefficients (Kd Values) - Marshall Steam

- Station FGD Material Landfill, Completed 8/22/05
25. **Daniels, J.L.** (2005) Site-Specific Distribution Coefficients (Kd Values) – Belews Creek Steam Station FGD Material Landfill, Completed 8/22/05
 26. **Daniels, J.L.** (2005) Compliance Demonstration Report - Liner System Comparison Groundwater Modeling, Addendum Report to S&ME, Inc., Charlotte, NC, Completed October 2005
 27. Shi, B., Cai, Y., Inyang, H.I., **Daniels, J.L.** and Jiang, H.. (2004) “Determination of Expansive Soil Grades Using Fuzzy Method” *Proceedings of the 7th International Symposium on Environmental Geotechnology and Global Sustainable Development*, Helsinki, Finland June 8-10, 2004.
 28. **Daniels, J.L.** (2004) Capillary Rise Assessment, Technical Report to Duke Energy, Completed 11/1/04
 29. **Daniels, J.L.** (2004) Test pad evaluation of fly ash, lime and FGD gypsum mixtures, Addendum Report to Duke Energy, Charlotte, NC, Completed 4/19/04
 30. **Daniels, J.L.** (2004) Craig Road Landfill – Laboratory Testing and Modeling, Technical Report to S&ME, Inc., Charlotte, NC, Completed 5/31/04
 31. **Daniels, J.L.**, Das, G.P. and Goins, R.J. (2003) “Heavy metal sorption characteristics of a flue gas desulfurization material” *20th Annual International Pittsburgh Coal Conference*, Pittsburgh, PA, USA, September 15-19, 2003
 32. **Daniels, J.L.** (2003) Test pad evaluation of fly ash, lime and FGD gypsum mixtures, Final Report to Duke Energy, Charlotte, NC, Completed 12/24/03
 33. **Daniels, J.L.** (2003) Permeable reactive layers for trace metals attenuation, Final Report to Duke Energy, Charlotte, NC, Completed 12/24/03
 34. **Daniels, J.L.** (2003) Feasibility of enhanced contaminant attenuation in subgrade soils at the Belews Creek Ash Landfill, Final Report to Duke Energy, Charlotte, NC, Completed 2/28/03
 35. **Daniels, J.L.** (2003) Interactions between coal combustion ash and flue gas desulfurization sludge: Implications for innovative waste management, Final Report to Duke Energy, Charlotte, NC, Completed 2/28/03
 36. **Daniels, J.L.** (2003) Review of lime-fly ash mixtures: Engineering and environmental implications, Final Report to Duke Energy, Charlotte, NC, Completed 8/21/03
 37. **Daniels, J.L.**, Inyang, H.I. and Ogunro, V.O. (2002) “A methodology for fractionation of contaminant volumes to barrier slices.” *The 6th International Symposium on Environmental Geotechnology and Global Sustainable Development*, Seoul, Korea, July 2-5, 2002, pp. 381-387.
 38. **Daniels, J.L.**, Inyang, H.I. and Kurup, P. (2002) “The influence of dissolved polymers on the properties of earthen barriers used in waste containment applications.” *The 6th International Symposium on Environmental Geotechnology and Global Sustainable Development*, Seoul, Korea, July 2-5, 2002, pp. 363-370
 39. **Daniels, J.L.**, Inyang, H.I. and Fang, H-Y. (2001) “Theoretical relationship for scaling freezing-induced damage in barrier systems under laboratory and field conditions” *Proceedings of the International Symposium on Application of Natural Materials for Environmental Geotechnology*, Tokyo, Japan, October 29-November 2, 2001, pp. 37-55.
 40. **Daniels, J.L.**, Inyang, H.I. Howe, G.S. and Ogunro, V.O. (1999) “Innovative use of triaxial cell permeameters for measuring the earthen barrier resistance to freeze-thaw degradation under field conditions” *Proceedings of the International Symposium on High Altitude and Sensitive Ecological Environmental Geotechnology*, Nanjing, PR China pp. 326-333.
 41. Fang, H-Y., Work, D.V. and **Daniels J.L.** “Preliminary study of the solar-electromagnetic process for improvement of dredged fill in reclaimed land applications” *Proceedings of the 4th International Symposium on Environmental Geotechnology and Global Sustainable Development*, Danvers, MA, pp. 1146-1157.
 42. Fang, H.Y., **Daniels, J.L.** and Work, D.V. “Soil contamination and decontamination mechanisms under wet-dry and freeze-thaw conditions” *Proceedings of the 4th International Symposium on Environmental Geotechnology and Global Sustainable Development*, Danvers, MA, pp. 1158-1171.

43. Inyang, H.I., **Daniels, J.L.**, Parikh, J.M. and Howe, G.S. (1998) "Characterization of contaminant barrier materials" CEEST/007R-98, Center for Environmental Engineering, Science and Technology, University of Massachusetts, Lowell, MA 44 pp.
44. Inyang, H.I., Bruell, C.J., Parikh, J.M. and **Daniels, J.L.** (1998) "Batch sorption of heavy metals on additive-amended barrier materials" CEEST/008R-98, Center for Environmental Engineering, Science and Technology, University of Massachusetts, Lowell, MA 203 pp.
45. Inyang, H.I., **Daniels, J.L.** and Parikh, J.M. (1998) "Attenuation of heavy metals in densified columns of barrier materials" CEEST/009R-98, Center for Environmental Engineering, Science and Technology, University of Massachusetts, Lowell, MA 43 pp.
46. **Daniels, J.L.**, Work, D.V., Fang, H.Y. and Inyang, H.I. (1998) "Remediation of contaminated sites by solar-electromagnetic wave process," *Proceedings of the 5th Annual Northeast Regional Student Environmental Conference*, Lowell, MA, pp. 31-43.
47. **Daniels, J.L.** (1998) "Assessment of intrinsic bioremediation as a site treatment technique," *Proceedings of the 5th Annual Northeast Regional Student Environmental Conference*, Lowell, MA, pp. 14-22.
48. Fang, H.Y., Inyang, H.I. and **Daniels, J.L.** 1997. "Physico-chemical determinants of hard soil and soft rock characteristics" *Proceedings of the Symposium on Rock Mechanics*, Chongqing, P.R. China, pp. 1-7.
49. Fang, H.Y., **Daniels, J.L.** and Inyang, H.I. (1997) "Failure mechanisms of landfill covers" *Proceedings of GREEN 2, the 2nd International Green Symposium on Geotechnics and the Environment*, Cracow, Poland, Sept. 8-11, 1997.
50. **Daniels, J.L.** (1996) "Laboratory study of the hydraulic conductivity of contaminated soil" *Proceedings of the 4th Annual Northeast Regional Student Environmental Conference*, Lowell, MA pp. 77-82.

Presentations and Other Research Activities

1. "Chemical modification for better soil-water interactions" Invited lecture for Dow Construction Chemicals, Global Research and Development. Delivered via MS Teams on June 15, 2022.
2. "Organo-Silane, Hydrophobicity and the Freeze-Thaw Performance of Subgrade Soils", 99th Annual Transportation Research Board Meeting, Washington, DC, January 14, 2020.
3. "Engineered Water Repellency for Applications in Environmental Geotechnology" Keynote Lecture for EGRWSE-2019: Second International Conference on Environmental Geotechnology, Recycled Waste Materials, and Sustainable Engineering, Chicago, IL, June 17, 2019.
4. "Engineered water repellency: An evolving approach to infiltration control", The World of Coal Ash, St. Louis, MO, May 15, 2019.
5. "Reflections on Clarity", 19th Annual Graduate Research Symposium, Learning Across Disciplines, Charlotte, NC, March 15, 2019.
6. "Engineered Water Repellency for Coal Combustion Residuals", Inaugural GeoCarolinas Conference, ASCE Geo-Institute, October 9, 2017.
7. "The Role of Advisory Boards in the CCR Industry", Invited presentation at the 2017 EUCI Coal Combustion Residuals Conference, Atlanta, GA, March 30, 2017.
8. "Coal Ash: A primer and update". Invited talk to the Rotary Club of North Mecklenburg County, Cornelius, NC, March 22, 2017.
9. "Coal Ash: What is it and who cares?" Invited talk to the English Speaking Union, Salisbury Branch, February 16, 2017.
10. "Coal Ash in Transportation Infrastructure", Invited presentation to AFP 40 Geo-Environmental Processes Committee of the Transportation Research Board, January 10, 2017.
11. "Coal Ash Cleanup: An Opportunity for Environmental Sustainability and Stewardship", Center for the Environment, Catawba College, November 17, 2016, Salisbury, NC

12. "The Federal Coal Ash Rule: Engineering and Design Considerations. A webinar co-presented with John Allen; hosted by CETCO/Minerals Technologies, November 15, 2016.
13. "Geoenvironmental Challenges and Opportunities for Coal Combustion Residuals" Keynote Speaker for American Society of Civil Engineers Geo-Chicago Conference, Chicago, IL, August 16, 2016.
14. "Beneficial Reuse of Coal Ash in North Carolina" co-presented with Ellen Lorscheider from North Carolina Department of Environmental Quality, at Transportation Research Board Committees on Resource Conservation & Recovery and Geo-Environmental Processes 2016 Summer Workshop, July 26-29, 2016, Asheville, NC
15. "Water Repellency for Ash Management," Coal Ash Management Forum, Environmental Research and Education Foundation, July 21, 2016, Charlotte, NC
16. Live and Recorded Webinar, "Coal Ash Management: Regulatory Update and Geotechnical/Groundwater Considerations for Ash Pond Closures," hosted by the Environmental Research and Education Foundation, July 14, 2016.
17. "The Coal Ash Paradox" a public forum, hosted by Providence Day School, April 14, 2016, Charlotte, NC
18. "Energy and the Environment", panelist at Leadership North Carolina, Environment Session for Class XXIII, April 13, 2016, Asheville, NC
19. "North Carolina's Unprecedented Scope, Schedule, and Scrutiny: Update and Insights for the Industry" Workshop on Current Issues in Poned CCP's, American Coal Ash Association, Tampa Bay, Florida, February 4, 2016
20. Live and recorded webcast "Coal Ash Management: An Update" Environmental Science for Attorneys, North Carolina Bar Association Foundation, Cary, NC, January 28, 2016.
21. Keynote Address: "Coal, Coal Ash, And Sustainability" 56th Annual Foundation Day, Workshop on Recent Trends in Construction Industry, Samrat Ashok Technological Institute, Vidisha, Madhya Pradesh, India, November 3, 2015.
22. Invited Presentation "Engineered Water Repellency for Increased Utilization of Ash" Council of Scientific and Industrial Research (CSIR), Advanced Materials and Processes Research Institute (AMPRI), Habib Ganj, Bhopal, Madhya Pradesh, India, November 2, 2015.
23. Keynote Lecture: "Coal and Sustainable Science Policy", International Conference on Infrastructure Development for Environmental Conservation and Sustenance (INDECS-15), Adhiyamaan College of Engineering, Hosur, India, October 28, 2015
24. Technology Briefing Presentation for E4 Carolinas, Carolinas Energy Communicators Network, Ballantyne Country Club, Charlotte, NC, May 28, 2015.
25. Panelist for public screening of *Coal Ash Chronicles*, Charlotte, NC, May 21, 2015.
26. Engineering and Policy Considerations for Coal Ash Management, Invited presentation to faculty and students at the University of Virginia, jointly hosted by the Departments of Civil and Environmental Engineering and Systems and Information Engineering, Charlottesville, VA, April 15, 2015
27. Coal Ash Leachability: Technical and Policy Considerations, INES Ph.D. program, April 9, 2015
28. Invited Panelist as part of a symposium "What's In Your Water? A Discussion of Threats To Virginia's Water Quality", as sponsored by the College of William and Mary's Environmental Law and Policy Review and the Virginia Coastal Policy Clinic, Williamsburg, VA, March 27, 2015
29. The evolving landscape for coal ash management in North Carolina, ASCE Southern Branch Meeting, Charlotte, NC, March 19, 2015
30. "Down and Dirty with Coal Ash", Charlotte Area Environmental Breakfast Club Organizers, Charlotte, NC, March 18, 2015
31. Beneficial Use and Coal Combustion Residuals, Overview and Project update, Environmental Research and Education Foundation, Charlotte, NC, February 24, 2015
32. Coal Ash Use and Disposal: Environmental Considerations, South Carolina Association of Environmental Professionals, February 19, 2015

33. An Update on Coal Combustion Products in North Carolina, American Coal Ash Association Winter Meeting, Savannah, Georgia, February 11, 2015
34. Keynote Remarks to newly licensed Professional Engineers and Land Surveyors, Charlotte, January 28, 2015
35. Panelist, Plant Decommissioning, Decontamination, and Demolition Process, “What we can learn from North Carolina’s Implementation of the Coal Ash Management Act of 2014” January 13, 2015
36. Campus Interview, Recorded for Channel 22 and UNC Charlotte’s YouTube Channel, December 19, 2014
37. Keynote Presentation, Our Story: Coal Ash in North Carolina, Coal Ash Forum I, Charlotte, NC, December 4, 2014 (representatives from the Charlotte Observer, and Charlotte Business Journal)
38. Research Results and Research Needs Related to Coal Ash Management in NC, Beneficial Reuse of Coal Ash Ad Hoc Committee, North Carolina Environmental Management Commission, Charlotte, NC, November 14, 2014. (representatives from the Associated Press, Charlotte Observer, WCNC/NBC Affiliate, and Charlotte Business Journal)
39. Ash Management in a Post-Dan River Environment, Groundwater Professionals of North Carolina, September 18, 2014, Charlotte, NC
40. Coal Ash Update, North Carolina Society of Civil Engineers, August 15, 2014, Sunset Beach, NC
41. Panelist for “The Nexus Between Affordable Energy and Environmental Protection”, as part of Engineering Leadership In Action , PENC 2014 Annual Summer Conference, June 6, 2014
42. Panelist in discussion on coal fly ash with “Charlotte Talks” on WFAE 90.7 FM, hosted by Mike Collins, May 22, 2014, additional guests included Chris Hardin and Brett Tempest.
43. Ash Leachability and the Dan River Spill, Professional Engineers of North Carolina, South Piedmont Chapter, May 12, 2014.
44. Leaching and Sorption Considerations for Ash Use and Disposal, Coal Combustion Products Utilization and Management: A Practical Workshop, hosted by the Center for Applied Energy Research and the American Coal Ash Association, April 30, 2014, Lexington, KY
45. Dan River Spill and the Current Regulatory Environment, Professional Engineers of North Carolina Leadership Seminar, April 10, 2014, Greensboro, NC
46. Coal Ash Cleanup and the Current Regulatory Environment, Professional Engineers of North Carolina Leadership Seminar, December 2, 2013, Raleigh, NC
47. Keynote Lecture, “Leadership in Engineering” Professional Engineers of North Carolina, August 29, 2013, Charlotte, NC
48. Proposed Field Demonstration of Organo-Silanes, Electric Power Research Institute, Charlotte, NC, July 9, 2013
49. Leachability Methods, Electric Power Research Institute, Charlotte, NC, July 8, 2013
50. Ash Leachability Considerations in a post-TVA Environment, Southeastern Electric Exchange Conference, Orlando, FL, June 27, 2013.
51. Exploratory Discussion on the Use and Application of the Leaching Environmental Assessment Framework (LEAF) for Coal Combustion Residuals, Utility Solid Waste Activities Group (USWAG), Washington, DC, May 8, 2013.
52. Organo-silanes for geotechnical and geoenvironmental applications, exhibition booth at World of Coal Ash, April 22-25, 2013, Lexington, KY
53. Presentation at the Worldwide Pollution Control Association/Duke Energy Wastewater Treatment Seminar “Options for Managing Solids from FGD Wastewater”, March 7, 2013.
54. Lecture for all UNC Charlotte Ph.D. students registered for GRAD 8002 Professionalism and Responsible Conduct of Research (72 students) “Professional Critique and Peer Review”, given March 1, 2013
55. Webinar entitled “Coal Ash Management and Regulations – An Overview” delivered through the Environmental Research and Education Foundation, February 19, 2013.

56. Moderator of session entitled "Coal's role in the environmental and energy dilemma", XII International Symposium on Environmental Geotechnology, Energy and Global Sustainable Development, Los Angeles, CA, June 27-29, 2012.
57. Invited Presentation to utilities throughout U.S. by the Electric Power Research Institute (EPRI) entitled "Organofunctional Silanes: Background and Preliminary Project Planning", June 13, 2012.
58. Presentation at the U.S. Universities Council on Geotechnical Education and Research (USUCGER) Workshop *Research & Education Priorities for the Geotechnical Engineering Community*, "Significance of Broader Impacts Criterion in NSF proposals" as part of ASCE's 2012 GeoCongress, Oakland, CA, March 29, 2012.
59. Presentation at the Sixth International Conference of International Center For Sustainability, Accountability, And Eco-Affordability of Large Structures (ICSAELS) "Coal and Sustainable Science Policy," Chongqing, China, October 11, 2011.
60. Presentation for faculty and students at the China University of Mining and Technology "Laboratory, Field and Numerical-based Investigations of Coal Fly Ash and Impact on Groundwater," Xuzhou, China October 8, 2011.
61. Session Panelist at Georgia Environmental Conference "U.S. EPA Coal Ash Regulation Impacts to Business" Savannah, GA, August 25, 2011.
62. Presentation at World of Coal Ash Conference "Preserving Structural Fill and Mine Reclamation as Acceptable Beneficial Reuse of CCRs" Denver, CO, May 11, 2011
63. Webinar Presentation to Geosyntec Consultants (teleconferenced throughout US offices with geoenvironmental expertise) "Coal fly ash leachability: Measurement and Control", Charlotte, NC, April 28, 2011
64. Presentation for faculty and students at the University of Illinois at Chicago, "Coupling Agents for Geotechnical and Geoenvironmental Engineering", Chicago, IL, March 11, 2011
65. Serve as Moderator for a public forum on waste-to-energy, as part of the BioEnergy Symposium, IDEAS/UNC Charlotte, February 7, 2011
66. NSF Days Outreach Workshop, Presentation "Engineering Education Opportunities", Polytechnic University of Puerto Rico, San Juan, Puerto Rico, February 3, 2010
67. Presentation for faculty and students at East China University of Science and Technology, School of Power and Mechanical Engineering, "Science Policy and the U.S. National Science Foundation" and "Water-Induced Damage of Structures and Materials", Shanghai, China, May 19, 2009
68. Presentation at the World of Coal Ash conference "Coupling Agents for Coal Ash Improvement", Lexington, KY, May 7, 2009
69. Presentation at the International Foundation Congress & Equipment Expo "Application of cold-weather concreting technology to ground modification", Orlando, FL, March 18, 2009
70. Presentation at the International Foundation Congress & Equipment Expo "Soil Improvement with Organo-silane", Orlando, FL, March 14, 2009
71. Presentation at Duke Energy "Ash Modification with Organo-Silane", Charlotte, NC, January 19, 2009
72. Presentation at NSF Engineering Research Centers Annual Grantees Meeting "Effectiveness of ERC Partnerships Survey Summary", Bethesda, MD, December 4, 2008
73. Presentation at NSF Engineering Research Centers Annual Grantees Meeting "Formulating a Center-specific Hypothesis on Educating Creative and Innovative Engineers", Bethesda, MD, December 3, 2008
74. Presentation at American Institute of Chemical Engineers (AIChE) Annual Meeting, Topical Area: Chemical Engineering Education: Past and Future, "NSF and Engineering Education" Philadelphia, PA, November 19, 2008
75. Presentation "Part 1: The National Science Foundation's role in the U.S. Engineering Enterprise, Part 2: A New Approach to Mitigating Water-Induced Damage to Civil Infrastructure." (South Piedmont Chapter), Charlotte, NC, October 27, 2008
76. Presentation at American Coal Ash Association Fall Meeting, "Ash Modification with Organo-Silane", Denver, CO, October 22, 2008

77. Presentation at U.S. DOE Workshop on low-level waste (LLW) and mixed low-level waste (and LLW) landfills, Oak Brook, IL, October 7-8, 2008
78. NSF Days Outreach Workshop, Presentation (1) "NSF Merit Review Process and Proposal Preparation" and (2) "Directorate for Engineering Opportunities", Dartmouth College, Hanover, NH, September 11, 2008
79. Serve as Session 7 Co-Chair and Discussion Facilitator, 6th International Conference on Case Histories in Geotechnical Engineering, Arlington, VA, August 11-16, 2008
80. Presentation at the Integration of Simulation Technology into the Engineering Curriculum: A University-Industry Workshop, "Engineering education opportunities at NSF" Ithaca, NY, July 26, 2008
81. Serve as Session Co-Chair and Organizer, Taiwan Straits Tunnel Session, as part of the 9th International Symposium on Environmental Geotechnology and Global Sustainable Development, Hong Kong, China, June 3, 2008
82. Presentation at the 9th International Symposium on Environmental Geotechnology and Global Sustainable Development, "Organo-Silane for Geotechnical and Geoenvironmental Engineering Applications", Hong Kong, China, June 3, 2008
83. Lecture at the China University of Mining and Technology, through a grant funded by the Chinese Ministry of Education, "Organo-Silane Modification for Soils and Infrastructure", Xuzhou, China, May 30, 2008
84. Presentation at the Fifth Annual Geotechnical, Geophysical, and Geoenvironmental Technology Transfer Conference and Expo Hosted By North Carolina Department of Transportation Geotechnical Engineering Unit, "Organo-silane based modification for soil improvement" Charlotte, NC, April 11, 2008
85. Presentation at the Fifth Annual Geotechnical, Geophysical, and Geoenvironmental Technology Transfer Conference and Expo Hosted By North Carolina Department of Transportation Geotechnical Engineering Unit, "Modified lime and cement stabilization" Charlotte, NC, April 10, 2008
86. Presentation at the 2008 International Mechanical Engineering Education Conference, "NSF Funding Opportunities", Galveston, TX, April 8, 2008
87. Lecture at Zycosil Opening Day, West Coast USA Launch Technical Seminar, Sales and Distribution Services, Inc., Angel Stadium of Anaheim, "Uses of Zycosil with Roads and Geotechnical Projects" Anaheim, CA, April 1, 2008
88. Presentation at ASCE GeoCongress, New Orleans, LA "Field scale characterization of fly ash stabilized with lime and FGD gypsum" March 10, 2008
89. Presentation at Engineers for a Sustainable World, Annual Conference, "Funding Sustainability Programs" San Francisco, California, February 9, 2008
90. Presentation at the Transportation Research Board, 87th Annual Meeting, "Organo-silane applications in geotechnical and geoenvironmental engineering" Washington, DC, January 15, 2008
91. Lecture at Fassi Chemical - Zycosil Technical Seminar "Geotechnical & Geoenvironmental Applications of Zycosil" Miami, FL, November 9, 2007
92. Presentation at 8th International Conference on Waste Management, Environmental Geotechnology and Global Sustainable Development, "Site-Specific Distribution Coefficients for Preliminary Modeling Purposes" for Ljubljana, Slovenia, August 28-30, 2007
93. Lecture at ZYDEX Americas Technical Seminar at UNC Charlotte "Geo-Possibilities with Zycosil" August 8-9, 2007
94. Lecture at the China University of Mining and Technology, through a grant funded by the Chinese Ministry of Education, "The effects of temperature on soil stabilization", Xuzhou, China, May 11, 2007
95. Lecture at the China University of Mining and Technology, through a grant funded by the Chinese Ministry of Education, "Ash Management and Leachate Containment", Xuzhou, China, May 14, 2007
96. Lecture at the China University of Mining and Technology, through a grant funded by the Chinese Ministry of Education, "Ash Stabilization and Weathering", Xuzhou, China, May 16,

2007

97. Presentation at the Fourth Annual Geotechnical, Geophysical, and Geoenvironmental Technology Transfer Conference and Expo Hosted By North Carolina Department of Transportation Geotechnical Engineering Unit - Charlotte, NC, "Temperature Controls on Subgrade Stabilization" April 12-13, 2007
98. Presentation at the ASCE GeoDenver Conference, "Cold-weather subgrade stabilization" Denver, CO, February 18-21, 2007
99. Presentation at the Transportation Research Board, 86th Annual Meeting, "Application of cold-weather concreting technology to soil stabilization", Washington, DC, January 21-25, 2007
100. Short Course Lecturer at the International Conference on Infrastructure Development and the Environment, Abuja, Nigeria, "Groundwater and Contaminant Transport Analysis" September 13, 2006
101. Panelist on live television broadcast on Nigerian Television Authority, program focus on Sustainability and Infrastructure Development, Abuja, Nigeria, September 13, 2006
102. Panelist on live television broadcast on Cross-River State Broadcasting, program focus on the environment, Calabar, Nigeria, September 18, 2006
103. Serve as Session Moderator "Groundwater Resources and Contamination" International Conference on Infrastructure Development and the Environment, Abuja, Nigeria, September 12, 2006
104. Presentation at the International Conference on Infrastructure Development and the Environment, Abuja, Nigeria, "Use of limestone as a low-cost additive for cadmium removal" September 14, 2006
105. Presentation at the International Conference on Infrastructure Development and the Environment, Abuja, Nigeria, "New Generation Material System for Landfill Liners & Leachate Controlling Facilities" September 14, 2006
106. Lecture at the University of Calabar, Calabar, Nigeria "Groundwater Resources" September 18, 2006
107. Presentation at the Third Annual Geotechnical, Geophysical, and Geoenvironmental Technology Transfer Conference and Expo Hosted By North Carolina Department of Transportation Geotechnical Engineering Unit - Charlotte, NC, [*Geotechnical Session*] "Cold Weather Subgrade Stabilization" April 20-21, 2006
108. Presentation at the ASCE Geo Congress 2006 "Development of a wireless sensor network for monitoring a bioreactor landfill" Atlanta, GA, February 26-March 1, 2006
109. Presentation for the UNC Charlotte and metropolitan Charlotte Community "Landfills and Soil Contamination" Recorded for television broadcast (Channel 22) as part of the Spotlight on Research Presentation Series, October 13, 2005
110. Serve as Session Moderator "Coal Utilization Byproducts" Twenty-Second Annual International Pittsburgh Coal Conference, Pittsburgh, PA, USA, September 12-15, 2005
111. Presentation at the 22nd International Pittsburgh Coal Conference "The need for field-relevant leachability mass transfer coefficients" Pittsburgh, PA, USA, September 13, 2005
112. Presentation to the North Carolina Department of Transportation (Geotechnical Engineering Unit, Pavement Management Unit) "Subgrade Stabilization Alternatives to Lime and Cement" Raleigh, NC, August 16, 2005
113. Presentation to The Second Annual Geotechnical, Geophysical, and Geoenvironmental Technology Transfer Conference and Expo Hosted By North Carolina Department of Transportation Geotechnical Engineering Unit - Charlotte, NC, [*Geoenvironmental Session*] "Leachability and Attenuation in Mixtures of Lime, Fly Ash and Flue Gas Desulfurization (FGD) Material" April 14-15, 2005
114. Presentation to The Second Annual Geotechnical, Geophysical, and Geoenvironmental Technology Transfer Conference and Expo Hosted By North Carolina Department of Transportation Geotechnical Engineering Unit - Charlotte, NC, [*Geotechnical Session*] "Strength and Permeability in Mixtures of Lime, Fly Ash and Flue Gas Desulfurization (FGD) Material" April 14-15, 2005

115. Presentation at the S&ME, Inc., Annual Technical Conference, "Ash Landfill Leachate/Groundwater Evaluation" January 21, 2005
116. Presentation at Duke Energy, "Leachate Containment – Summary Findings and Recommendations" January 24, 2005
117. Presentation for the North Carolina Department of the Environment and Natural Resources (NC DENR), "Compliance Demonstration Report for the Craig Road Landfill" August 11, 2004
118. Presentation at GREEN 4: 4th International Symposium on Geotechnics Related to the Environment, Wolverhampton, U.K. "Multi-phase flow through a laboratory-scale aerobic landfill bioreactor" June 28- July 1, 2004
119. Presentation for Duke Energy and URS Corp., Charlotte, NC, "Ash Management and Leachate Containment" June 21, 2004
120. Presentation at the 7th International Symposium on Environmental Geotechnology and Global Sustainable Development, Helsinki, Finland "Engineering Behavior of Biofilm Amended Earthen Barriers Used in Waste Containment" June 8-10, 2004
121. Serve as Session Co-Chair, "Geoenvironmental Site Characterization Technologies," The 7th International Symposium on Environmental Geotechnology and Global Sustainable Development, Helsinki, Finland June 8-10, 2004
122. Presentation at The First Annual Geotechnical, Geophysical, and Geoenvironmental Technology Transfer Conference and Expo Hosted By North Carolina Department of Transportation Geotechnical Engineering Unit - Charlotte, NC, "Contaminant Leachability and Attenuation Mechanisms: Background and Relevance to Transportation Projects" April 15-16, 2004
123. Presentation to the UNC Charlotte NSPE Student Chapter and Freshman Engineering Students, "Moving from Engineering Graduate to Professional Engineer" March 23, 2004
124. Presentation to the UNC Charlotte NSPE Student Chapter and Freshman Engineering Students, "NSPE and Diversifying Your Career" October 1, 2003
125. Presentation at the Twentieth Annual International Pittsburgh Coal Conference, Pittsburgh, PA, USA, "Heavy Metal Sorption Characteristics of a Flue Gas Desulfurization Material" September 15-19, 2003
126. A Poster Presentation at the 2nd Intercontinental Landfill Research Symposium, Asheville, North Carolina, "Laboratory-scale investigation of an aerobic bioreactor operated under combined vapor extraction and air injection." October 14, 2002
127. Presentation for the faculty and students of Nanjing University, Nanjing, P.R. China, entitled "Challenges and Solutions in Environmental Geotechnology" July 12, 2002
128. Presentation for the faculty and students of Hong Kong University of Science and Technology, Kowloon, Hong Kong, entitled "Earthen Barrier Improvement for Waste Containment" July 10, 2002
129. Presentation for the faculty and students of the Chinese Academy of Building Research, Beijing, P.R. China, entitled "Research activities at UNC Charlotte" July 8, 2002, 14:00
130. Presentation for the faculty and students of Northern Jiaotong University, Beijing, P.R. China, entitled "Developments of bioreactor technology for municipal solid waste management" July 8, 2002, 10:00
131. Serve as Session Co-Chair, "Site Remediation Technique and Management," The 6th International Symposium on Environmental Geotechnology and Global Sustainable Development, Seoul, Korea, July 2-5, 2002
132. Presentation at the 6th International Symposium on Environmental Geotechnology and Global Sustainable Development, Seoul, Korea, "The influence of dissolved polymers on the properties of earthen barriers used in waste containment applications." July 2-5, 2002
133. A Poster Presentation at the 6th International Symposium on Environmental Geotechnology and Global Sustainable Development, Seoul, Korea, "A methodology for fractionation of contaminant volumes to barrier slices" July 2-5, 2002

134. Presentation for the 2001 Annual North Carolina Section Meeting for the American Society of Civil Engineers, entitled “Clay Based Barrier Improvement for Waste Containment” Raleigh, NC, September 28, 2001
135. Presentation for the North Carolina South Piedmont Chapter of the National Society of Professional Engineers, entitled “Soil Improvement in Geotechnical and Geoenvironmental Engineering” Charlotte, NC October 29, 2001
136. Served as Moderator, Session C2: Agriculture and Environment, 5th International Symposium on Environmental Geotechnology and Global Sustainable Development, Belo Horizonte, Brazil, August 17-23, 2000
137. Presentation at the 5th International Symposium on Environmental Geotechnology and Global Sustainable Development, Belo Horizonte, Brazil, “Aggregation potential and specific surface area of barrier mixtures at various outgas temperatures.” August 17-23, 2000
138. Presentation at the session on Waste Containment Systems, 15th Annual International Conference on Contaminated Soils and Water, University of Massachusetts at Amherst, MA, USA. “A comparative analysis of contaminant migration models using barrier material data.” October 19, 1999

Grants and Contracts

Funding Awarded (\$8.1 million as PI/Co-PI)

1. Collaborative Research: Engineered Water Repellency to Mitigate Frost Susceptibility: Decoupling Osmotic and Matric Potential, PI (100%), U.S. National Science Foundation, \$335,315, 8/1/19 – 7/31/22, Data Science Supplement March 2021 (\$67,062, PI 100%)
2. Use of Organosilanes to Mitigate the Impact Of Freeze-Thaw Damage to the Granular Roadways In Iowa, PI (100%), Iowa Highway Research Board via Michigan State University, \$90,259, 11/5/2019-10/31/22.
3. National Ash Management Advisory Board. PI (100%), Duke Energy, \$5,148,744, 8/1/2014 – 12/31/20.
4. Computational Modeling: bench-scale, pilot-scale, and full-scale ash/gypsum/wastewater mixtures in support of zero liquid discharge applications, Southern Company, 7/1/14-3/31/16, \$98,040. PI (50%) Co-PIs Bill Langley and Milind Khire (Dr. Milind Khire changed to PI effective 2015)
5. Water Repellency for Ash Containment and Reuse, Environmental Research and Education Foundation, \$291,125, 7/1/14-6/30/18. PI (50%), Co-PIs Vincent Ogunro and Miguel Pando
6. Groundwater Model for Ash Basin Closure Plan, HDR, Inc., \$46,224, 9/1/13 – 3/31/14, PI (50%) Co-PI Bill Langley
7. Acquisition of an ESI Mass Spectrometer Multiple Users in Chemistry, Biology and Environmental Engineering, NSF, \$266,955, 9/1/13-8/31/16, Co-PI (25%) with Olya Keen, Craig Ogle, Pinku Mukherjee and Jerry Troutman
8. Stabilize and Immobilize FGD Waste Water and ZLD Solids: Cost-Effectiveness Indicator Study, Southern Company, \$156,090, 9/1/13-12/1/14, Co-PI (20%) with Vincent Ogunro and Brett Tempest
9. Leachability of Fixated Material from Duke Energy’s Cayuga Station, \$18,450, 9/1/13-12/31/13, PI (50%) Co-PI Vincent Ogunro
10. Technical Assessment and Potential for Large-scale Laboratory Lysimeters, Geosyntec/Electric Power Research Institute, \$3,000, 2/1/13-6/1/13. PI (100%).
11. Beneficial Use Program Development for Biosolids Incinerator Ash for the Water and Sewer Authority of Cabarrus County (WSACC) Phase 2, \$35,400, 4/1/13-12/31/13, PI (100%)
12. Leachability and Sorption Controls on Biosolids Incinerator Ash, Wastewater Sludge Ash for the Water and Sewer Authority of Cabarrus County (WSACC), \$39,558, 4/1/13-12/31/13, PI (100%)

13. Sequestration of Halides from FGD Purge Streams, Phase 2.0: Dose-Performance-Cost Relationships, Duke Energy, \$76,813, 6/1/13-12/31/13, PI (50%) Co-PI Vincent Ogunro
14. Treat Halides from FGD Purge Streams, Phase 2.0/Tier 1: Preliminary Screening to Develop Dose-Cost Relationships, Duke Energy, \$53,000, 6/1/13-12/31/13, PI (50%) Co-PI Vincent Ogunro
15. Groundwater Model Refinement Plan for Riverbend Steam Station Ash Basin, Duke Energy, \$9,750, 3/15/13-6/30/13, PI (50%) Co-PI Bill Langley
16. Treat Halides from FGD Purge Streams: Evaluation of Belews Creek Site Conditions (Phase 1.5), Duke Energy, \$9,429, 11/2/12-12/15/12, PI (50%) Co-PI Vincent Ogunro
17. Feasibility Evaluation to Treat Halides from FGD Purge Streams (Phase I), Duke Energy, \$33,712, 7/1/12-10/31/12, PI (50%) Co-PI Vincent Ogunro
18. Sustainably Integrated Buildings and Sites (SIBS), an Industry/University Cooperative Research Center, National Science Foundation, \$93,000/ year (NSF), \$150,000 from Bank of America, Wells Fargo and Ingersoll Rand (\$50K/year/member), 2012-2017, Co-PI (10%) with Rob Cox and Sandra Clinton
19. Development of Beneficial Use Program for Wastewater Sludge Ash for the Water and Sewer Authority of Cabarrus County (WSACC), \$43,531, 2/20/12 – 6/30/12, PI (100%)
20. Subgrade Stabilization Alternatives to Lime and Cement, North Carolina Department of Transportation, \$295,723, 7/1/06-12/31/09, PI (50%) Co-PI Rajaram Janardhanam
21. REU Site: Geotechnical and Geoenvironmental Engineering through Laboratory, Field and Computational Investigation, National Science Foundation, \$299,991, 3/15/06-2/28/10, Award No. 0552629, PI (except while serving at the NSF, 50%) Co-PI Rajaram Janardhanam
22. Waste Containment Comparison with Three Dimensional Groundwater Modeling, S&ME, Inc., \$1,988, 10/1/05-11/1/05, PI (100%)
23. Subgrade Stabilization Alternatives to Lime and Cement (Technical Assistance), North Carolina Department of Transportation, \$8,750, 5/1/05-6/30/08, PI (50%) Co-PI Rajaram Janardhanam
24. Sorption Testing in Support of an FGD Landfill, Duke Energy, \$37,000, 2/14/05-6/27/05, PI (100%)
25. Leachate Evaluation with Multi-Layer/Three Dimensional Groundwater Modeling, S&ME, Inc., \$4,641, 5/2/05-6/16/05, PI (100%)
26. Ash Leachate Containment – Technical and Experimental Support, URS Corp., \$26,406, 10/1/04-12/31/04, PI (100%)
27. Capillarity Assessment for Coal Combustion Products, Duke Energy, \$6,875, 10/1/04-12/31/04, PI (100%)
28. Laboratory Testing and Modeling to Support the Egypt Road Ash Landfill, S&ME, Inc., \$20,060, 2/15/04-5/1/04, PI (100%)
29. Improved Leaching Procedure for Coal Combustion Products, UNC Charlotte, Graduate School, \$6,000, 1/1/04 – 6/30/04, PI (100%)
30. Test Pad Instrumentation For Field Evaluation of Ash Management Options, Duke Energy, \$38,775, 5/1/03-4/30/04, PI (100%)
31. Review of lime-fly ash mixtures: Engineering and Environmental implications, Duke Energy, \$1,290, 5/1/03-4/30/04, PI (100%)
32. Permeable reactive layer for trace metals attenuation: A field, laboratory and computer-based assessment, Duke Energy, \$83,772, 5/1/03-12/31/03, PI (100%)
33. Use of Duke Power Plant Ash in High Volume Superpave Highway Asphalt Concrete Application, Duke Energy, \$19,332, 11/1/02-12/31/03, Co-PI (50%) with Vincent Ogunro
34. Interactions between coal combustion ash and flue gas desulfurization sludge: Implications for innovative waste management, Duke Energy, \$4,560, 7/25/02 – 2/28/03, PI (50%) Co-PIs Helene Hilger and Vincent Ogunro
35. Feasibility of enhanced contaminant attenuation in subgrade soils at the Belews Creek Ash Landfill, Duke Energy, \$4,560, 7/25/02 – 2/28/03, PI (50%) Co-PI Vincent Ogunro
36. Feasibility of a Next Generation Aerobic Municipal Solid Waste Bioreactor, UNC Charlotte, College of Engineering, \$10,000, 1/1/02 – 12/31/03, Co-PI (50%) with Vincent Ogunro

37. Feasibility of dissolved polymer restoration of deteriorated landfill covers, UNC Charlotte, Graduate School, \$4,460, 1/1/02 – 12/31/02, PI (100%)

International Funding Awarded:

1. Organo-silanes for management of coal mining sites and coal combustion products, National Natural Science Foundation of China, through China University of Mining and Technology, Scholarship for International Young Scientists, 200,000 RMB (~US \$30,000), Awarded 2009-2010 Award No. 5095011345, PI (50%, Co-PI Shen Chen)

SERVICE

Administrative Duties:

1. Chair, Department of Civil and Environmental Engineering (CEE), 2018-Present.
2. Chair on Assignment, CEE, 2017-2018.
3. Chair, CEE, 2014-2016.
4. Interim Chair, CEE 2012-2014
5. Leadership Team Member, Infrastructure, Design, Environment and Sustainability (IDEAS) Center (2010-2011)

Committees (University, College, Department)

University:

1. Provost Search Committee, 2021-2022
2. R1 Commission, 2020-2021
3. InfoEd Steering Committee, 2020
4. Research Restart Task Force, 2020
5. Chair of Committee to review the Chair of the Department of Software and Information Systems (2018)
6. Future of the Faculty, 2014-2016
7. Comprehensive Review Committee for Department Chair in Geography and Earth Sciences , (2011-2012)
8. Alternate Representative for CEE Department on University Faculty Council, (2003-2004)
9. CEE Representative to Interdisciplinary INES Ph.D. Program Committee Member, (2004-2011)
10. Faculty Research Grants Committee – College of Engineering Representative, (2006-2008)

College:

1. College of Engineering Strategic Planning Committee (Co-Chair), 2022-present.
2. Search Committee, Belk-Woodward Distinguished Professor (2018)
3. Search Committee, EPIC Director (2016)
4. Search Committee, Director of Grants/Contracts (2012)
5. Reassignment of Duties Committee (2003)
6. CEE Representative on COE Civil Lab Comm (2002-2004)

Department:

1. Focus Area Improvement Team – Geotechnical (2002-2007, 2010-2012)
2. Focus Area Improvement Team – Environmental (2002-2007, 2010-2012)
3. Search Committee for Geotechnical Faculty Position (Spring 2002)
4. Academic Appeals (Summer 2002 replacement for Dr. Graham)
5. Strategic Planning and Resource Team, Geotechnical Representative, (2002-2003)

6. Civil Engineering Laboratory Committee (2002-2004)
7. Civil Engineering Writing Committee (2002-2004)
8. CEE Computing Committee (2004-2007)
9. CEE Faculty Workload Committee (2004-Present)
10. Search Committee (ad hoc) for Environmental Faculty Position (Spring 2005)
11. Search Committee for faculty in the Engineering Management/Systems Engineering (Spring 2006)
12. Search Committee for Lecturer in Civil Engineering, (2006-2007)
13. Search Committee for Geotechnical Faculty Position (Spring 2010)
14. RPT Committee (2010-2011)
15. Faculty Workload Committee (2010-2011)

Other (e.g. special assignments, programs, etc.):

1. Sponsoring host for the First Korean Geotechnical Society and American Society of Civil Engineers Geo-Institute Workshop, March 20, 2022
2. Sponsoring host for Lime Use Seminar, in conjunction with Lhoist North America, May 4, 2022.
3. Arranged and directed funding for Ben Bowers (MSCE August 2010) to present research in Chicago, Illinois at Portland Cement Association Annual Meeting “The Influence of Temperature on Cement Stabilization of North Carolina Soils” (August 24, 2009)
4. Arranged and directed funding for J. Brian Anderson (former UNC Charlotte faculty) to present research in Lisbon, Portugal “Coupling Agents for Geotechnical and Geoenvironmental Applications” Anderson presented on behalf of Daniels research group. (September 28, 2009)
5. Arranged and directed funding for Ben Bowers (MSCE August 2010) to present research in at a ASCE-sponsored conference in Shanghai, China as well as to conduct independent research in Xuzhou, China at the China University of Mining and Technology (June 1 – July 15, 2010)
6. Directed the Summer 2011 Department of Civil and Environmental Engineering Research Experiences for Undergraduates Program

External (Local, National, International)

U.S. National Science Foundation (NSF):

1. Annually served as panel/proposal reviewer (Engineering for Civil Infrastructure)
2. Served as on-site reviewer (Engineering Research Centers Program), (~5 separate reviews, most recently in October 2019 (awards are ~\$4 million/year and involve meetings with students, faculty and administration).

Academic Program Review Activities

1. ABET Program Evaluator (performed program reviews of undergraduate BS Civil Engineering programs at other universities in 2017, 2018, 2020, 2021)
2. Academic Quality Assessment and Development (AQAD) on-site review of MS and PhD Civil Engineering graduate programs (June 2022)

Other Professional Affiliations and Service:

1. American Society of Civil Engineers (Grade: Fellow)
3. International Society of Environmental Geotechnology, Council Member, 2020-2026.
4. World of Coal Ash Conference (May 2022), Technical Program Committee
5. National Society of Professional Engineers
Treasurer, South Piedmont Chapter, 2006-2007

- Board of Directors, 2005-2006
- Scholarship Chairman, 2004-2006
- 6. American Society for Engineering Education
- 7. International Society for Environmental Geotechnology
Member of HY Fang Research Paper Award Selection Committee, 2006
- 8. Transportation Research Board, Member of Committee AFP40 “Physicochemical and Biological Processes in Soils” 4/15/2007 – 4/15/2017
- 9. Transportation Research Board, Member of Committee AFS 80 “Cementitious Stabilization Committee” 4/15/2007 –4/15/2017
Primary author of Research Needs Statement entitled “Environmental Characterization of Coal Fly Ash for Use in Pavement Structures”, submitted for possible support by National Cooperative Highway Research Program (NCHRP), February 2009
- 10. ASTM International, Member of Committee D18 on Soil and Rock (2011-Present)
- 11. ASTM International, Member of Committee E50 on Environmental Assessment, Risk Management and Corrective Action (2011-Present)

Editorial Board Membership:

- 1. Journal of Waste Management & Research (WMR), as part of the International Solid Waste Association (ISWA), Term: 2006 – 2015
- 2. Coal Combustion and Gasification Products Journal, Term: 2015-2020

Formal Peer-Reviewer:

- 1. Advances in Engineering Education
- 2. ASCE Journal of Environmental Engineering
- 3. ASCE GeoCongress
- 4. ASCE Journal of Geotechnical and Geoenvironmental Engineering
- 5. ASCE Journal of Hydrologic Engineering
- 6. ASCE Journal of Materials in Civil Engineering
- 7. ASCE Journal of Natural Hazards Review
- 8. ASCE Practice Periodical of Hazardous, Toxic and Radioactive Waste Management
- 9. ASTM Geotechnical Testing Journal
- 10. Environmental Earth Sciences
- 11. Fuel
- 12. International Journal of Environment and Waste Management
- 13. Journal of Applied Clay Sciences
- 14. Journal of Engineering Geology
- 15. Journal of Environmental Monitoring and Assessment
- 16. Journal of Environmental Technology
- 17. Journal of the Air and Waste Management Association
- 18. Journal of the American Water Resources Association
- 19. Separation Science and Technology
- 20. Soil and Sediment Contamination: an International Journal
- 21. Transportation Research Board
- 22. Waste Management and Research
- 23. Waste Management: Journal of Integrated Waste Management
- 24. ASCE Geoenvironmental Engineering Manual of Practice

Advisory Board Membership:

- 1. Hero Global Services, LLC, Fort Mill, SC, Advisory Board Member, July 2007 – May 2009

2. ReVenture Park Advisory Council, as affiliated with the Mecklenburg County Waste Management Advisory Board, which reports to the Mecklenburg County Board of County Commissioners (ReVenture is a proposed development plan to convert a 667 acre Superfund (hazardous waste) site along the Catawba River in Charlotte, NC into the region's first Renewable Energy Eco-Industrial Park. *This council serves to evaluate ReVenture's proposal to convert municipal solid waste from Mecklenburg County into fuel and electricity (Appointed October 4, 2010)*

Example Community Service and Outreach:

1. Stephen Ministries, Stephen Minister Training, June, 2020
2. Stephen Ministries, Stephen Ministry Leader's Training Course, August 2019
3. Communities of Calling Initiative, Nativity of the Holy Virgin Orthodox Church, Charlotte, NC 2020-present.
4. Leave No Trace Trainer, Certified May 2019.
5. Assistant Scoutmaster, Boy Scouts of America, 2017-2022, Merit Badge Counselor, 2022-present.
6. Provided three days of "job-shadowing" for Kevin Graben, a student at Bishop McGuinness High School in Kernersville, NC, January 18-20, 2011.
7. Testified at the U.S. Environmental Protection Agency public hearing for coal combustion residues, September 14, 2010.
8. Introduction to Engineering Presentation at Trinity High School, Washington, PA, March 31, 2010
9. Panelist at A.L. Brown High School, Kannapolis, NC, PENC/JETS Panel Discussion, November 9, 2009.
10. Made a presentation and conducted a hands-on demonstration to promote engineering in a 2nd Grade classroom at the Reedy Creek Elementary School, Charlotte, NC (February 23, 2007)
11. Made a presentation and conducted a hands-on demonstration to promote engineering in a 1st Grade classroom at the University Meadows Elementary School, Charlotte, NC (February 24, 2006)

AWARDS/HONORS

1. Elected Fellow of the American Society of Civil Engineers, 2018.
2. Outstanding Technical Achievement Award, Professional Engineers of North Carolina, 2015.
3. Awarded Young Engineer of the Year, Professional Engineers of North Carolina, 2006.
4. Service Medal, International Society of Environmental Geotechnology, August 2005.
5. Recipient of a Certificate in recognition of contributions to the International Society of Environmental Geotechnology, July 2002.