CURRENT POSITION

Associate Professor

Department of Civil and Environmental Engineering

The University of North Carolina at Charlotte

9201 University City Boulevard

Charlotte, NC 28223

Tel: (704) 687-3248

Fax: (704) 687-6953

Email: jodaniel@uncc.edu

EDUCATION

**University of Massachusetts**, Lowell, MA

D.Eng. Civil Engineering (2001)

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

M.S. Civil Engineering (1998)

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

**Lehigh University**, Bethlehem, PA

B.S. Civil Engineering (1996)

CITIZENSHIP STATUS/CERTIFICATIONS/LICENSES

* U.S. Citizen
* Registered Professional Civil Engineer, Commonwealth of Massachusetts, License No. 41501
* Registered Professional Civil Engineer, State of North Carolina, License No. 028018

#### RESEARCH BACKGROUND AND INTEREST

* Geotechnical and geoenvironmental engineering testing of materials
* Integration of field, laboratory and numerical methods
* Physical, chemical and biological behavior of soils and industrial byproducts
* Science and engineering policy
* Engineering education

#### EMPLOYMENT HISTORY

The University of North Carolina at Charlotte, Charlotte, NC

Department of Civil and Environmental Engineering

Visiting Research Assistant Professor, January 2001 – June 2001

Assistant Professor, July 2001 – June 2007

Associate Professor with Permanent Tenure, July 2007 – Present

**U.S. National Science Foundation, Arlington, VA**

Directorate for Engineering

Division of Civil, Mechanical and Manufacturing Innovation (CMMI)

Program Director, Geomechanics and Geomaterials (GEOMM) 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)

**University of Massachusetts at Lowell, Department of Civil and Environmental Engineering & Center for Environmental Engineering, Science and Technology (CEEST) Lowell, MA**

Research Assistant (1996-2000)

### **Edward H. Kuljian Associates, Inc., Bryn Mawr, PA**

### Intern (1995)

**Lehigh University, Department of Civil and Environmental Engineering & Center for Advanced Technology for Large Structural Systems (ATLSS), Bethlehem, PA**

Research Assistant (1994)

REPRESENTATIVE UNIVERSITY-BASED RESEARCH ACTIVITY

*Completed work for $894,183 in funding, including federal (NSF), state (NCDOT) and private (Duke, URS, S&ME) sources, excluding international support.*

1. Utilization of specific surface area (SSA) analyses to characterize polymer-clay interactions in waste containment applications. Awarded use of SA 3100 Plus from the Beckman-Coulter Corporation (Approximate Equipment Value: $20,000) for research conducted at UNC Charlotte, 2001, (PI)
2. Feasibility of dissolved polymer restoration of deteriorated landfill covers, UNC Charlotte, Graduate School, $4,460, 1/1/02 – 12/31/02, PI
3. 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
4. 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
5. 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
6. 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
7. 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
8. Review of lime-fly ash mixtures: Engineering and Environmental implications, Duke Energy, $1,290, 5/1/03-4/30/04, PI
9. Test Pad Instrumentation For Field Evaluation of Ash Management Options, Duke Energy, $38,775, 5/1/03-4/30/04, PI
10. Improved Leaching Procedure for Coal Combustion Products, UNC Charlotte, Graduate School, $6,000, 1/1/04 – 6/30/04, PI
11. Laboratory Testing and Modeling to Support the Egypt Road Ash Landfill, S&ME, Inc., $20,060, 2/15/04-5/1/04, PI
12. Capillarity Assessment for Coal Combustion Products, Duke Energy, $6,875, 10/1/04-12/31/04, PI
13. Ash Leachate Containment – Technical and Experimental Support, URS Corp., $26,406, 10/1/04-12/31/04, PI
14. Leachate Evaluation with Multi-Layer/Three Dimensional Groundwater Modeling, S&ME, Inc., $4,641, 5/2/05-6/16/05, PI
15. Sorption Testing in Support of an FGD Landfill, Duke Energy, $37,000, 2/14/05-6/27/05, PI
16. Subgrade Stabilization Alternatives to Lime and Cement (Technical Assistance), North Carolina Department of Transportation, $8,750, 5/1/05-6/30/08, PI
17. Waste Containment Comparison with Three Dimensional Groundwater Modeling, S&ME, Inc., $1,988, 10/1/05-11/1/05, PI
18. 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)
19. Subgrade Stabilization Alternatives to Lime and Cement, North Carolina Department of Transportation, $295,723, 7/1/06-12/31/09, PI <http://www.ncdot.org/doh/preconstruct/tpb/research/download/2007-11finalreport.pdf>
20. 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

ACADEMIC ADVISING

Undergraduate Curriculum and Professional Advising

Generally more than 20 students at any given time

Undergraduate Research Assistants

1. Mr. Tim Runion, United Nations Encyclopedia of Life Support Systems editorial assistant.(2001-2003)
2. Mr. Nicholas Parker – Bioreactor Project (2002-2003)
3. Mr. Jacob Basinger – Bioreactor Project (2002)
4. Mr. Jason Irish – Bioreactor Project, Soil sampling project (2002-2003)
5. Mr. Timothy Matthews – Soil sampling project (2002)
6. Mr. Robie Goins – U.S. Congressional Appropriation/Dept. of Education, for underrepresented minorities-lysimeter study (Summer 2003, Fall 2003, Spring 2004)
7. Mr. Chris Friel – Externally sponsored (Duke Energy) research (Fall 2003, Spring 2004)
8. Mr. Gabriel Molina – Externally sponsored (Duke Energy) research (Fall 2003, Spring 2004)
9. Mr. Chris Clark – Funded by CE Department to assist with Laboratory Organization (Spring 2004)
10. Mr. Harold Smith – Funded by CE Department to assist with Laboratory Organization (Spring 2004)
11. Ms. Ashlie Wood – Bioreactor Project, Funded by MAPS office (Summer 2004)
12. Ms. Teresa Hernandez Serrano – Spanish Exchange Student - Funded through residual External research funds (Summer 2004)
13. Mr. Nicholas J. DeBlasis, Spring – (Summer, 2005) – Externally sponsored (Duke Energy, NC DOT)
14. Ms. Oksana van Engen, Spring – (Summer, 2005) – Externally sponsored (Duke Energy)
15. Mr. Guillaume Thizy – French Exchange Student - Funded by Department of Civil Engineering, (Summer 2005)
16. Ms. Elizabeth Matson – Funded through NSF REU Funds, (Summer 2006)
17. Mr. Koyett Miles – Funded through NSF REU Funds, (Summer 2006)
18. Ms. Arezou Eslaminejad – Funded through NSF REU Funds, (Summer 2007)
19. Ms. Daniell Bagley – Funded through NSF REU Funds, (Summer 2007)
20. Ms. Katherine Calcaterra – Funded through NSF REU Funds, (Summer 2007)
21. Mr. Matthew Mason – Funded through NSF REU Funds, (Summer 2007)
22. Mr. Benjamin Rupert – Funded by CEE Department (Summer 2011)

Graduate Advising

*(Note: Students could not obtain a Ph.D. in the Civil and Environmental Engineering Department at UNC Charlotte until the INES Ph.D. program was approved in 2005. An inter-institutional program was, and remains, available with NC State University.)*

Ph.D. Major Advisor

1. Dr. Gautham Das (Ph.D. May 2008) Dissertation: “Ash Weathering Controls on Contaminant Leachability”
2. Dr. Shaogang Lei (Ph.D. May 2009) Dissertation: “Monitoring and Analyzing the Mining Impacts on Key Environmental Elements in Desert Area” Degree awarded from China University of Mining and Technology, Xuzhou, China through a joint collaboration. Dr. Lei spent two years in residence as Visiting Scholar at UNC Charlotte, funded as a Research Assistant

Ph.D. Committee Member

1. Dr. Gustavo Borel, Ph.D. December 2007, Civil Engineering/INES
2. Dr. Mutiu G. Ayoola, Ph.D. December 2006, Civil Engineering/INES, Dissertation: “Evolution of geotechnical properties of recycled granular waste media”
3. Dr. Humphrey Zebulun, Ph.D. May 2009, Civil Engineering/INES, Dissertation: “Biokinetic processes of extracellular polysaccharide stabilization of surface soils against dust generation”
4. Mr. Zhaochun Meng, Ph.D. Candidate, Civil Engineering/INES, Dissertation: “TMDL modeling methodology for incoporation of the linear highway environment”
5. Mr. Fabien Besnard. Ph.D. Candidate, Civil Engineering/INES, Dissertation: “Evaluation of Waste Gypsum Wallboard from Construction Site as a Soil Amendment and as a Part of a Carbon Sequestration System.”
6. Mr. Olanrewaju Sanusi, Ph.D. Candidate, Civil Engineering/INES, Dissertation: “Geopolymerization of fly ash”
7. Mr. Ping Lu, Ph.D. Candidate Civil Engineering/INES, Dissertation: “Cryptosporidium removal from swimming pool water”

Ph.D. Advisory Committee (appointed by graduate school)

1. Dr. Scott A. Thomas, Ph.D. Candidate in the Electrical and Computer Engineering Department (appointed 10/28/02, graduated December 2004)
2. Dr. Shawnee Wakeman, Ph.D. Candidate in Special Education (appointed 1/7/03, graduated May 2005)
3. Dr. Eric Larsen, Ph.D. Candidate in the Mechanical Engineering Department (appointed 4/6/05, graduated December 2005)
4. Mr. Jonathan Kozar, Ph.D. Candidate in Geography and Earth Sciences Department (appointed 4/18/11, in progress)
5. Ms. Kara Tiller, Ph.D. Candidate in Geography and Earth Sciences Department (appointed 10/28/11, in progress)

MS Major Advisor

1. Mr. Raghuram Cherukuri (MSCE May 2004) Thesis: Geotechnical properties of earthen barriers modified by exopolymeric substances
2. Mr. Gautham Das (MSCE May 2004) Thesis: “Use of Permeable Reactive Soils for Heavy Metal Containment”
3. Ms. Marie Schmader (MSCE December 2005) Thesis: “Hydrodynamic controls on aerobic bioreactor performance”
4. Mr. Nicholas DeBlasis (MSCE December 2008) Thesis: “Effect of temperature on subgrade stabilization with cement”
5. Mr. Kyle Baucom (MSCE December 2008) Thesis: “Effect of temperature on subgrade stabilization with lime”
6. Mr. Benjamin Bowers (MSCE August 2010) Thesis: “Use of calcium chloride to accelerate soil cement stabilization”
7. Mr. Matthew Keatts (MSCE Expected: August 2012) “Geotechnical controls on organo-silane modification of soils and coal combustion fly ash”
8. Ms. Jenet Hattaway (MSCE Expected: May 2012) “Environmental controls on organo-silane modification of soils and coal combustion fly ash”

Independent Studies/Projects Directed

1. Mr. Gairy Taylor, Project: “The influence of methanotrophic bacteria and biofilm production on the shear strength of landfill cover soils” 2002
2. Mr. Dinakar Nimmala, Independent Study “The influence of biofilm on the heavy metal adsorption characteristics of Piedmont Soils” 2003-2004
3. Mr. Raghuram Cherukuri, Independent Study: “Geotechnical and geoenvironmental engineering aspects of geothermal energy” 2001-2002
4. Mr. Gautham Das, Independent Study: “Leaching Characteristics of Flue Gas Desulfurization Sludge” 2002
5. Mr. Mark Hill, Independent Study: “Ash leaching as a function of pH and column flowrate” Summer 2005
6. Ms. Rebekah Schrock, Independent Study: “Geotechnical Properties of FGD/Ash Material” Spring 2006
7. Mr. David Dry, Independent Study: “Geotechnical Properties of FGD/Ash Material” Spring 2006
8. Mr. Ben Bowers, Independent Study “Organo-Silane for management of coal combustion fly ash” Spring 2010. (with Dr. Shenen Chen)
9. Mr. Olanrewaju Sanusi “Effect of clay content on calcium chloride modified soil cement”, Independent study, INES 8890, 3 credits (Fall 2010-Spring 2011)

Thesis/Project Committee Member

1. Mr. Dana Hornkohl (Originally expected MSCE May 2003) Thesis: “Quantifying and comparing the effect of oxidation on methane emissions from landfills with compost and soil covers” (student on leave)
2. Mr. Murugesan Venkatapathi (MSME December 2002) Thesis: “A portable fluorometer for kinetic applications”
3. Ms. Bavhana Sinha (Expected MSCE December 2002) Thesis: “Numerical optimization of water quality parameter to maximize calibration performance”
4. Mr. Gustavo Borel (MSCE, May 2005) Thesis: “Evaporation-induced transport of aqueous-phase polymer molecules to desiccating soil surfaces”
5. Mr. Carl Wilson (MSCE, May 2005) Project: “Sanitary sewer overflow remediation for Charlotte-Mecklenburg Utilities wastewater collection system”
6. Mrs. Jessica Montgomery (MSCE December 2005) Thesis: “Waste biodegradation in a meso-scale aerobic bioreactor”
7. Mr. Marcus Allen Cottingham (MSCE May 2006) Thesis: “Evaluation of Instrumentation and Pressuremeter Based P-Y Curves for Laterally Loaded Deep Foundations”
8. Ms. Kellie Hedrick (MSCE, December 2005) Project: “McAlpine sewer system load study mass balance approach”
9. Ms. Mary Fabian (MSCE: May 2006) Thesis: “The architecture of methanotroph biofilms in landfill soil”
10. 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”
11. Mr. Christopher J.L. Stahl (MSCE: August 2006) Thesis: “Laboratory scale aerobic bioreactor-geoenvironmental aspects”
12. Mr. Benoit Duclaud (MSCE: December 2007) Thesis: “Improved Reaeration Prediction For The Lower Cape Fear River Estuary, North Carolina”
13. Mr. Michael S. Young, (MS Geology: December 2007) Project: “Groundwater Model of a Chlorinated Solvent Contaminated Site in Jacksonville, NC”
14. Ms. Ashlie Wood (MSCE: May 2008) Thesis: “Evaluation of the Suitability of New Construction Wallboard Scrap for Amending Mecklenburg County Soils”
15. 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”
16. Mr. Robert Kral (MSCE: Expected May 2011) "Evaluation of Unconfined Compression Test Results on Fiber-Reinforced Soil to Determine the Effects of Varying the Clay and Fiber Content".
17. Mr. Olufemi Oladayo Aborisade (MSCE: Expected May 2011) “Particle Removal During Drinking and Recreational Water Filtration”
18. Mr. Acosta Carlos (MSCE: Expected May 2012) “Properties of cemented Nevada sand for centrifuge sloping ground models”
19. Ms. Rebecca Turner (MSCE: May 2011) “Waste Drywall and Plant Synergy for Carbon Sequestration”
20. Ms. Arezou Eslaminejad (MSCE: May 2011) “Laboratory Evaluation of Performance Improvement from Deep Layers of Lime-Stabilized Subgrade Soils”
21. Mr. David Bost “Development of a new method for predicting oxygen reaeration in a three-dimensional water quality model” (MSCE: May 2012)

Post-Doctoral Researchers

Dr. Hai Pu, Visiting Scholar from China University of Mining and Technology, August – November 2009

Student Organizations

National Society of Professional Engineers, Student Chapter Faculty Advisor, 2002-Present

### PRESENTATIONS/SESSION MODERATOR

1. 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.
2. 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.
3. Session Panelist at Georgia Environmental Conference “U.S. EPA Coal Ash Regulation Impacts to Business” Savannah, GA, August 25, 2011.
4. Presentation at World of Coal Ash Conference “Preserving Structural Fill and Mine Reclamation as Acceptable Beneficial Reuse of CCRs” Denver, CO, May 11, 2011
5. Webinar Presentation to Geosyntec Consultants (teleconferenced throughout US offices with geoenvironmental expertise) “Coal fly ash leachability: Measurement and Control”, Charlotte, NC, April 28, 2011
6. Presentation for faculty and students at the University of Illinois at Chicago, “Coupling Agents for Geotechnical and Geoenvironmental Engineering”, Chicago, IL, March 11, 2011
7. Serve as Moderator for a public forum on waste-to-energy, as part of the BioEnergy Symposium, IDEAS/UNC Charlotte, February 7, 2011
8. NSF Days Outreach Workshop, Presentation “Engineering Education Opportunities”, Polytechnic University of Puerto Rico, San Juan, Puerto Rico, February 3, 2010
9. 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
10. Presentation at the World of Coal Ash conference “Coupling Agents for Coal Ash Improvement”, Lexington, KY, May 7, 2009
11. Presentation at the International Foundation Congress & Equipment Expo “Application of cold-weather concreting technology to ground modification”, Orlando, FL, March 18, 2009
12. Presentation at the International Foundation Congress & Equipment Expo “Soil Improvement with Organo-silane”, Orlando, FL, March 14, 2009
13. Presentation at Duke Energy “Ash Modification with Organo-Silane”, Charlotte, NC, January 19, 2009
14. Presentation at NSF Engineering Research Centers Annual Grantees Meeting “Effectiveness of ERC Partnerships Survey Summary”, Bethesda, MD, December 4, 2008
15. 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
16. 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
17. 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
18. Presentation at American Coal Ash Association Fall Meeting, “Ash Modification with Organo-Silane”, Denver, CO, October 22, 2008
19. 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
20. 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
21. Serve as Session 7 Co-Chair and Discussion Facilitator, 6th International Conference on Case Histories in Geotechnical Engineering, Arlington, VA, August 11-16, 2008
22. 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
23. 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
24. 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
25. 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
26. 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
27. 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
28. Presentation at the 2008 International Mechanical Engineering Education Conference, “NSF Funding Opportunities”, Galveston, TX, April 8, 2008
29. 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
30. Presentation at ASCE GeoCongress, New Orleans, LA “Field scale characterization of fly ash stabilized with lime and FGD gypsum” March 10, 2008
31. Presentation at Engineers for a Sustainable World, Annual Conference, “Funding Sustainability Programs” San Francisco, California, February 9, 2008
32. Presentation at the Transportation Research Board, 87th Annual Meeting, “Organo-silane applications in geotechnical and geoenvironmental engineering” Washington, DC, January 15, 2008
33. Lecture at Fassi Chemical - Zycosil Technical Seminar “Geotechnical & Geoenvironmental Applications of Zycosil” Miami, FL, November 9, 2007
34. Presentation at8th 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
35. Lecture at ZYDEX Americas Technical Seminar at UNC Charlotte “Geo-Possibilities with Zycosil” August 8-9, 2007
36. 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
37. 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
38. 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
39. 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
40. Presentation at the ASCE GeoDenver Conference, “Cold-weather subgrade stabilization” Denver, CO, February 18-21, 2007
41. Presentation at the Transportation Research Board, 86th Annual Meeting, “Application of cold-weather concreting technology to soil stabilization”, Washington, DC, January 21-25, 2007
42. Short Course Lecturer at the International Conference on Infrastructure Development and the Environment, Abuja, Nigeria, “Groundwater and Contaminant Transport Analysis” September 13, 2006
43. Panelist on live television broadcast on Nigerian Television Authority, program focus on Sustainability and Infrastructure Development, Abuja, Nigeria, September 13, 2006
44. Panelist on live television broadcast on Cross-River State Broadcasting, program focus on the environment, Calabar, Nigeria, September 18, 2006
45. Serve as Session Moderator “Groundwater Resources and Contamination” International Conference on Infrastructure Development and the Environment, Abuja, Nigeria, September 12, 2006
46. 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
47. 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
48. Lecture at the University of Calabar, Calabar, Nigeria “Groundwater Resources” September 18, 2006
49. 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
50. 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
51. 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
52. Serve as Session Moderator “Coal Utilization Byproducts” Twenty-Second Annual International Pittsburgh Coal Conference, Pittsburgh, PA, USA, September 12-15, 2005
53. Presentation at the 22nd International Pittsburgh Coal Conference “The need for field-relevant leachability mass transfer coefficients” Pittsburgh, PA, USA, September 13, 2005
54. 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
55. 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
56. 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
57. Presentation at the S&ME, Inc., Annual Technical Conference, “Ash Landfill Leachate/Groundwater Evaluation” January 21, 2005
58. Presentation at Duke Energy, “Leachate Containment – Summary Findings and Recommendations” January 24, 2005
59. 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
60. 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
61. Presentation for Duke Energy and URS Corp., Charlotte, NC, “Ash Management and Leachate Containment” June 21, 2004
62. 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
63. 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
64. 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
65. Presentation to the UNC Charlotte NSPE Student Chapter and Freshman Engineering Students, “Moving from Engineering Graduate to Professional Engineer” March 23, 2004
66. Presentation to the UNC Charlotte NSPE Student Chapter and Freshman Engineering Students, “NSPE and Diversifying Your Career” October 1, 2003
67. 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
68. 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
69. Presentation for the faculty and students of Nanjing University, Nanjing, P.R. China, entitled “Challenges and Solutions in Environmental Geotechnology” July 12, 2002
70. 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
71. 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
72. 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
73. 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
74. 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
75. 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
76. 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
77. 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
78. 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
79. 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
80. 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

### TEACHING EXPERIENCE

Department of Civil Engineering, University of North Carolina, Charlotte, NC

*Instructor:*

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

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

CEGR 4145/5145 Groundwater Resources Engineering (Fall 2004, 2005, 2006, 2010)

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)

Department of Civil and Environmental Engineering, University of Massachusetts, Lowell, MA

*Co-Instructor:*

* 1. Design and Analysis of Waste Containment Systems (Fall 1998, Fall 1999)
  2. Physical and Chemical Interactions in Earthen Barriers (Spring 2000)

*Teaching Assistant:*

14.225 Surveying (Fall 2000)

14.226 Geomatics (Spring 2000)

*2010-2011 Summary of Courses Taught (Example):*

*CEGR 2104 Surveying and Site Design 84 students (Spring 2011)*

*CEGR 4145/5145 Groundwater Resources Engineering 17 students (Fall 2010)*

*CEGR 2104 Surveying and Site Design 35 students (Fall 2010)*

*Teaching Evaluations:*

*Consistently above Department, College and University levels (e.g., 4.88 Overall Instructor Effectiveness for CEGR 5145 for Fall 2010, compare with 4.37 Department, 4.10 College and 4.04 for University)*

PUBLICATIONS

Textbooks

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

Fang, H.Y. and **Daniels, J.L.** *Environmental Geotechnology*, co-author with HY Fang, CRC Press (asked to join HY Fang to completely re-develop 2nd edition, first edition was published in 1997,Under contract to complete by April 2012, extension has been requested.

##### Peer-Reviewed Journals

1. 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
2. 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
3. Lei, S**.**, **Daniels, J.L**., Bian, Z. and Wainaina, N. (2010) “Improved soil temperature modeling” *Environmental Earth Science*, 62(6), 1123-1130 <http://www.springerlink.com/content/4270051v730891w4/>
4. **Daniels, J.L.,** Wood, S.L. and Kemnitzer, S.C. “The role of NSF’s Department Level Reform program in engineering education practice and research” *Advances in Engineering Education, accepted*.
5. **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
6. 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
7. **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
8. **Daniels, J.L.** andDas, G.P. (2006) “Leaching Behavior of Lime-Fly Ash Mixtures” *Journal of Environmental Engineering Science* Vol. 23, No. 1, pp. 42-52
9. **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
10. **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
11. **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
12. **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
13. **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
14. 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
15. **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
16. **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 and Book Chapters

1. **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
2. **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
3. **Daniels, J.L.**, Hourani, M.S. (2009). “Soil improvement with organo-silane” *Advances in Ground Improvement*, (GSP 188) ASCE Reston/VA: 217-224
4. **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
5. **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
6. **Daniels, J.L.** and Janardhanam, R. (2007). “Cold-weather subgrade stabilization” *Soil Improvement*, (GSP 172), ASCE, Reston/VA: 1-10
7. 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
8. **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)
9. 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
10. **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
11. 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
12. 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
13. 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. **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.
2. 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
3. **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>
4. 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>

1. **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
2. **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>

1. **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
2. 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.
3. **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
4. **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.
5. 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
6. **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
7. **Daniels, J.L.** (2005) Compliance Demonstration Report - Revised (2-Layer, 3D) Groundwater Modeling, Addendum Report to S&ME, Inc., Charlotte, NC, Completed June 2005
8. **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
9. **Daniels, J.L.** (2005) Leachability Evaluation of Mixtures of FGD Material and Fly Ash, Technical Report to Duke Energy, Completed 7/8/05
10. **Daniels, J.L.** (2005) Site-Specific Distribution Coefficients (Kd Values) - Marshall Steam Station FGD Material Landfill, Completed 8/22/05
11. **Daniels, J.L.** (2005) Site-Specific Distribution Coefficients (Kd Values) – Belews Creek Steam Station FGD Material Landfill, Completed 8/22/05
12. **Daniels, J.L.** (2005) Compliance Demonstration Report - Liner System Comparison Groundwater Modeling, Addendum Report to S&ME, Inc., Charlotte, NC, Completed October 2005
13. 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.
14. **Daniels, J.L.** (2004) Capillary Rise Assessment, Technical Report to Duke Energy, Completed 11/1/04
15. **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
16. **Daniels, J.L.** (2004) Craig Road Landfill – Laboratory Testing and Modeling, Technical Report to S&ME, Inc., Charlotte, NC, Completed 5/31/04
17. **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
18. **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
19. **Daniels, J.L.** (2003) Permeable reactive layers for trace metals attenuation, Final Report to Duke Energy, Charlotte, NC, Completed 12/24/03
20. **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
21. **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
22. **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
23. **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.
24. **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
25. **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.
26. **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.
27. 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.
28. 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.
29. 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.
30. Inyang, H.I., Bruell, C.J., Parikh, J.M. and **Daniels, J.L.** (1998) “Batch sorption of heavy metals on additve-amended barrier materials” CEEST/008R-98, Center for Environmental Engineering, Science and Technology, University of Massachusetts, Lowell, MA 203 pp.
31. 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.
32. **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.
33. **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.
34. 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.
35. Fang, H.Y., **Daniels, J.L.** and Inyang, H.I. (1997) “Failure mechanisms of landfill covers” *Proceedings of GREEN 2,* t*he 2nd International Green Symposium on Geotechnics and the Environment*, Cracow, Poland, Sept. 8-11, 1997.
36. **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.

UNIVERSITY AND PROFESSIONAL SERVICE

Internal (Department, College, University)

University Committees:

1. Alternate Representative for CEE Department on University Faculty Council, (2003-2004)
2. CEE Representative to Interdisciplinary INES Ph.D. Program Committee Member, (2004-Present)
3. Faculty Research Grants Committee – College of Engineering Representative, (2006-2008)
4. Comprehensive Review Committee for Department Chair in Geography and Earth Sciences , (2011-2012)

College Committees:

1. Reassignment of Duties Committee (2003)
2. CEE Representative on COE Civil Lab Comm (2002-2004)

Department Committees:

1. Focus Area Improvement Team – Geotechnical (Spring 2002-Present)
2. Focus Area Improvement Team – Environmental (Spring 2002-Present)
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-Present)
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)

Administrative Duties:

Associate Director, Infrastructure, Design, Environment and Sustainability (IDEAS) Center (2010-2011)

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

1. 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)
2. 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)
3. 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)
4. 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. Served as Program Director for National Science Foundation, Division of Engineering Education and Centers (EEC), September 2007 – August 2009 through AAAS Fellowship
2. Served as Program Director for National Science Foundation, Division of Civil, Mechanical and Manufacturing Innovation (CMMI), August 2009 – July 2010 as a Federal Employee
3. 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.
4. Responsibility for Rapid Response Research awards for geotechnical and tsunami reconnaissance after earthquakes in the American Samoa, Chile and Haiti.
5. 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.
6. 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.
7. Program Officer/Panel moderator for Engineering Research Centers Program (Civil Infrastructure related proposals)
8. 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>
9. Prior to returning to the university, these responsibilities involved 203 ongoing awards, totaling $73.1 million.

Professional Affiliations:

1. American Society of Civil Engineers (Grade: Member)
2. National Society of Professional Engineers

Treasurer, South Piedmont Chapter, 2006-2007

Board of Directors, 2005-2006

Scholarship Chairman, 2004-2006

1. American Society for Engineering Education
2. American Association for the Advancement of Science
3. International Society for Environmental Geotechnology

Member of HY Fang Research Paper Award Selection Committee, 2006

1. Transportation Research Board, Member of Committee AFP40 “Physicochemical and Biological Processes in Soils” 4/15/2007 – 4/15/2013.
2. Transportation Research Board, Member of Committee AFS 80 “Cementitious Stabilization Committee” 4/15/2007 – 4/15/2013

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), $1M, 5 years estimate, submitted February 2009

1. ASTM International, Member of Committee D18 on Soil and Rock (2011-Present)
2. 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 – 2008, renewed by invitation 2009-2011.
2. International Journal of Terraspace Science and Engineering, published by World Scientific, March 2008 - present.

Formal Peer-Reviewer (Reviewed 97 papers from January 2001-August 2011):

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

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)*

Community Service and Outreach:

1. 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)
2. 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)
3. Panelist at A.L. Brown High School, Kannapolis, NC, PENC/JETS Panel Discussion, November 9, 2009.
4. Introduction to Engineering Presentation at Trinity High School, Washington, PA, March 31, 2010
5. Testified at the U.S. Environmental Protection Agency public hearing for coal combustion residues, September 14, 2010.
6. Provided three days of “job-shadowing” for Kevin Graben, a student at Bishop McGuinness High School in Kernersville, NC, January 18-20, 2011.

## AWARDS/HONORS

* Awarded Young Engineer of the Year, Professional Engineers of North Carolina, 2006
* Service Medal, International Society of Environmental Geotechnology, August 2005.
* Recipient of a Certificate in recognition of contributions to the International Society of Environmental Geotechnology, July 2002.
* Graduate Student Association, University of Massachusetts Lowell, Research Grant Award, 2000
* Clay Minerals Society Research Grant Award, 1999
* Solid Waste Association of North America-Massachusetts Chapter Scholarship Winner, 1998
* Francis College of Engineering Graduate Research Poster- 2nd Prize, Spring, 1998
* DuPont Graduate Fellow, 1996-1997