

CURRICULUM VITAE

MANOJ CHOPRA, Ph. D., P.E., M. ASCE

Associate Professor of Engineering
Member, Florida Board of Governors
NCAA Faculty Athletics Representative for UCF

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University of Central Florida
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PROFESSIONAL REGISTRATION: Professional Engineer FL PE 0051889

HONOR SOCIETY MEMBERSHIPS: Phi Kappa Phi, Tau Beta Pi and Chi Epsilon

EDUCATIONAL HISTORY:

- Ph.D.: State University of New York at Buffalo, February 1992.
Major: Civil Engineering
Dissertation: Linear and Nonlinear Analyses of Axisymmetric Problems in Thermomechanics and Soil Consolidation using FEM and BEM.
- M.S.: State University of New York at Buffalo, June 1988.
Major: Civil Engineering
- B.E.: Birla Institute of Technology and Science, Pilani, India, May 1985.
Major: Civil Engineering (with Honors)

EMPLOYMENT HISTORY:

LEADERSHIP EXPERIENCE

July 2012 – present

**Member of the Florida Board of Governors
(Ex-Officio as Chair of the Advisory Council of Faculty Senates)**

State University Systems of Florida

- Serve on the FL Board of Governors that governs all state universities in Florida
- Representing all faculty members in the state on matters related to education, tuition and budgetary issues, state appropriations and legislative actions.
- Served on the Search Committee that selected Frank Brogan as the Chancellor of Higher Education for Florida in 2010.
- Member of the Search Committee for the Presidential Search for FAMU

January 2013 – present

Executive Director

Stormwater Management Academy
University of Central Florida

- Technical and research leadership
- Project planning
- Coordinating Field Laboratory Site

May 2009 – October 2011

Director

Stormwater Management Academy
University of Central Florida

- Managed a staff of five and coordinate research and educational outreach activities of the Academy with participating faculty.
- Chaired meetings of the Board of Directors, met with current and potential sponsors and make presentations about Academy activities to public and private sectors.

May 2005 – April 2009

Member of the Board of Trustees

University of Central Florida

- Representative of the entire UCF faculty body with all powers of a Trustee for the university
- Fiduciary responsibility for all matters related to the University
- Served on several important standing and ad-hoc committees dealing with educational curriculum, finance, audit and fund-raising for the university.
- Served on a committee that developed guidelines for Presidential search process.
- Voted for the establishment of the College of Medicine and the new on-campus Football stadium at UCF.

May 2005 – April 2009

Chair of the Faculty Senate

University of Central Florida

- Chaired all meetings of the Senate and Senate Steering Committee.
- Worked closely with the University Provost on Resolutions from the Senate. Some of these resolutions were transformational and resulted in new or revised policies.
- Served on the President's Advisory Staff.

October 2008 and October 2002

CECE Department ABET Accreditation and Assessment Coordinator

University of Central Florida

- Primary Responsibility for the Civil, Environmental and Construction Engineering Program Reviews by **ABET**.
- Prepared self-studies for civil program and assisted with the environmental and constructions programs.
- Chaired committees to develop assessment criteria, and collect and evaluate assessment data.
- Completed all state and university assessment requirements.
- Made presentation to President, Provost and others at UCF on CECE assessment plan which was selected as a Role Model for the campus.

ACADEMIA EXPERIENCE

June 1998 - present

Associate Professor

Department of Civil and Environmental Engineering
 Joint Appointment: Mechanical, Materials and Aerospace Department,
 University of Central Florida

May 1998 – December 2003

Assistant Chair

Department of Civil and Environmental Engineering
 University of Central Florida
 Duties: Undergraduate advisement, course scheduling and development, FTIC and transfer orientations, Undergraduate Curriculum committee for CEE.

July 1993 – April 1998

Assistant Professor

Department of Civil and Environmental Engineering
 University of Central Florida
 Orlando, Florida

February 1992 - February 1993

Post-Doctoral Research Associate

University at Buffalo Research Foundation,
 State University of New York at Buffalo

July 1988 - December 1991

Graduate Research Assistant

Computational Mechanics Laboratory
 Department of Civil Engineering
 State University of New York at Buffalo

INDUSTRIAL EXPERIENCE

February 1993 - July 1993

Project Engineer

Automated Analysis Corporation
 Ann Arbor, Michigan

1985-1986

Resident Site Engineer

Planners Group - Architects and Engineers
State Bank of India Project, Chandigarh, India

CONSULTING EXPERIENCE

- (1) ECS – Florida, LLC, Jacksonville, Florida
Description: Study of Permeable Asphalt Pavement Failure in Jacksonville
- (2) DPC Engineering, Inc.
Orlando, Florida, 1997.
Description: Investigation of cracks in the walls of Flagler County Courthouse in Bunnell, Florida.
- (3) Bromwell Carrier Company,
Lakeland, Florida, 1995.
Description: Finite element analysis of the seepage through a phosphatic clay dam in South Florida.
- (4) BEST Software Corporation,
Getzville, New York, 1994.
Description: Development of the Boundary Element computer program GPBEST.

HONORS, AWARDS AND RECOGNITIONS:

1. Inducted into **Phi Kappa Phi** Honor Society in April 2013 as a Distinguished Faculty
2. Teaching Incentive Program (TIP) Award
University of Central Florida (2012)
3. CECE Corporate Affiliate Board's Gold Star Award for Faculty Excellence, Builders of the Realm, October 2011
4. 2010 University of Central Florida, Excellence in Professional Service Award
5. Gold Apple Award (by the CECE students) for Outstanding Teaching, November 2009.
6. 2009 Certificate of Commendation for Faculty Advisor, American Society of Civil Engineers, Reston, VA.
7. 2009 CECE Department Excellence in Professional Service Award, Nov. 2009
8. 2009 CECE Department Excellence in Undergraduate Teaching Award, Nov. 2009
9. Gold Apple Award (by the CECE students) for Outstanding Teaching, November 2008.

10. 2008 CECE Department Excellence in Professional Service Award, Nov, 2008
11. Gold Apple Award (by the CECE students) for Outstanding Teaching, November 2007.
12. 2007 CEE Department Excellence in Undergraduate Teaching Award.
13. 2007 Region 5 Faculty Advisor of the Year Award, American Society of Civil Engineers, Committee on Student Activities – EXCEED Program
14. Teaching Incentive Program (**TIP**) Award, University of Central Florida (2006-07)
15. 2003-2004 ASCE East-Central Branch, Outstanding Teacher of the Year.
16. 2003-2004 Chi Epsilon Excellence in Teaching Award for the Southern District. Chi Epsilon - Civil Engineering Honors Society
17. 2003 Tau Beta Pi Professor of the Year, CEE
18. Teaching Incentive Program (**TIP**) Award University of Central Florida (2002)
19. 2002 Engineering Faculty of the Year Florida Engineering Society, FES Annual Meeting, August 2002
20. 2001 Excellence in Environmental Engineering (shared with 4 others) American Association of Environmental Engineers Washington, DC.
21. Gold Quality Dollar Award for Continual Improvement, 2001 NASA – Kennedy Space Center, Florida.
22. University Excellence in Faculty Advising, 2001 University of Central Florida
23. Engineer of the Year 2000, Central Florida 2000 National Engineers Week
24. Teaching Incentive Program (**TIP**) Award State of Florida (1996)
25. Excellence in Faculty Advising, 1998 College of Engineering, University of Central Florida
26. Engineering Professor of the Year, 1998 Tau Beta Pi - Delta Chapter, College of Engineering, University of Central Florida.
27. Excellence in Undergraduate Teaching, 1997, University of Central Florida

28. Undergraduate Teacher of the Year, 1996-97
Department of Civil and Environmental Engineering,
University of Central Florida.
29. Engineering Professor of the Year, 1997 and 1996
Chi Epsilon, National Civil Engineering Honors Society, 1995

RESEARCH ACTIVITIES:

AREAS OF RESEARCH SPECIALIZATION

- Soil Erosion and Sediment Control using a Rainfall Simulator
- Pervious Pavement Systems
- Fertilizer Impacts on Ground and Surface Waters
- Computational Methods: Finite Element and Boundary Element Methods
- Dynamic Soil-Structure Interaction and Poroelasticity and Thermoelasticity
- Nonlinear Soil Consolidation and Stress Analysis
- Structural Dynamics and Vibrations of Bridges
- Permeable Treatment Walls for In Situ Groundwater Remediation
- Stability of Sinkholes
- Soil Properties and Earthwork.



UCF Rainfall Simulator

Conceptualized, designed and constructed at the Stormwater Management Academy by M. Chopra, under a grant from the Florida Department of Transportation. It is capable of handling up to 20 inches/hour of rainfall intensity and is a unique test facility in the United States.

PATENTS AND COPYRIGHTS

1. Reactive Material Placement Technique for Groundwater Treatment, Inventors: J. Quinn, Clausen, C., Reinhart, D. and Chopra, M., Patent Number **6207114**, March 27, 2001.
2. SHARP Model for Storm Water Harvesting and Assessment for Reduction of Pollutants. Copyright Issued, REGISTRATION NUMBER TX 7-621-400, June 2012.

FUNDED RESEARCH ACTIVITIES

Obtained **\$5.20 Million** of sponsored research as PI or Co-PI, not including the NSF-STEP grant of **\$1.23 Million** shared with several faculty in the college. Participated in several Interdisciplinary projects with colleagues from CECE, CECS, Chemistry and other institutions.

FUNDED SPONSORED RESEARCH (in reverse chronological order)

1. Title: "Evaluation of Pollution Levels Due to the Use of Consumer Fertilizers under Florida Conditions: Examination of Lower Slopes and Rainfall Intensities Taking into account Overland Flow", PI, Florida Department of Transportation, August 2012-May 2014, **\$89,495**, (16-60-7050)
2. Title: "Erosion and Sediment Control BMP Standards and Manual Update", PI (with Martin Wanielista), Florida Department of Transportation, April 2012 - Nov 2014, **\$126,134**, (16-60-7043)
3. Title: "Field Implementation of Polyacrylamide Treatment Systems", PI (with Martin Wanielista), Florida Department of Transportation, Nov 2011-Nov 2013, **\$95,000**, (16-60-7040)
4. Title: "Performance Testing and Analysis of Silt Fences using the Tilting Soil Test Beds with Simulated Rainfall", PI (with Martin Wanielista), Florida Department of Transportation, October 2011-Nov 2013, **\$119,650**, (16-60-7039)
5. Title: "Demonstration Project for Bio-sorption Activated Media for Ultra-urban Stormwater Management Treatment", co-PI (with Martin Wanielista, Andrew Randall and Ni-Bin Chang), Florida Department of Transportation, September 2012-May 2014, **\$277,999**, (16-60-7051)
6. Title: "Nutrient based Stormwater Management Design Tools", Co-PI (with Martin Wanielista), Florida Department of Transportation, April 2012-Feb 2014, **\$228,168**, (16-60-7044 to 16-60-7048)
7. Title: "Floating Wetland Systems for Nutrient Removal in Stormwater Ponds", Co-PI (with Ni-Bin Chang and Martin Wanielista), Florida Department of Transportation, April 2010-April 2012, **\$200,706**, (16-60-7026)
8. Title: "Evaluation of Pollution Levels Due to the Use of Consumer Fertilizers under Florida Conditions", PI, Florida Department of Transportation, May 2008-August 2010, **\$150,000**, (16-60-7025)
9. Title: "Inlet Protection Devices and their Effectiveness", Co-PI (with Martin Wanielista), Florida Department of Transportation, May 2008-August 2010, **\$160,000**, (16-60-7022)
10. Title: "Pervious Pavements, Installation, Operation and Strength", PI, Florida Department of Transportation, May 2008-May 2011, **\$210,036**, (16-60-7024)

11. Title: "Stormwater Harvesting Using Retention and In-Line Pipes for Treatment consistent with the new Statewide Stormwater Rule", Co-PI (with Martin Wanielista), Florida Department of Transportation, May 2008-May 2011, **\$370,000**, (16-60-7023)
12. Title: "Index Testing to Support the Stormwater Management Erosion and Sediment Control Laboratory", PI, Florida Department of Transportation, October 2007-January 2010, **\$100,032**, (16-60-7018)
13. Title: "UCF STEP Pathways to STEM: From promise to Prominence", Co-PI (with several CECS faculty, PIs: Michael Georgiopolous and Cynthia Young), National Science Foundation, **\$1.23 Million**.
14. Title: "Waste Tires for Pollution Control", Co-PI (with Martin Wanielista), Seminole County, October 2005, **\$200,000**. (16-60-8003).
15. Title: "Stormwater Management Academy Research and Testing Laboratory", Co-PI (with Martin Wanielista), Florida Department of Transportation, August 2004, **\$643,000**. (16-60-7008)
16. Title: "Performance Assessment of Portland Cement Pervious Pavements", Co-PI (with Martin Wanielista), Florida Department of Transportation, August 2004, **\$92,432**. (16-60-7006)
17. Title: "Performance Assessment of Portland Cement Pervious Pavements", Co-PI (with Martin Wanielista), Rinker Materials Corporation, February 2004, **\$50,000**. (16-60-8001)
18. Title: "Design and Operational Issues Related to the Co-disposal of Sludges and Biosolids in Class I Landfills – Phase II," Co-Principal Investigator (with D.R. Reinhart and T. Townsend), Florida Center for Solid and Hazardous Waste Management, September 2003 – July 2004, **\$70,000**. (16-20-7025)
19. Title: "Design and Evaluation of Tall and Absorptive Noise Barrier Walls", Duratek Corporation, April – July 2003, **\$ 6,358**.
20. Title: "Site Preparation for a Deep Foundation Test Site at the University of Central Florida", Principal Investigator, Florida Department of Transportation, September 2001 – September 2002, **\$71,174**. (16-21-735)
21. Title: "Vehicle Collision with Bridge Piers", Principal Investigator (with Sherif El-Tawil), Florida Department of Transportation, September 2002 – September 2003, **\$67,462**. (16-50-709)
22. Title: "US-Jordan Hazardous Waste Management Collaborative Research-Phase II" Principal Investigator (with D.R. Reinhart), National Science Foundation, April 2002 – December 2003, **\$25,900**. (16-20-409)
23. Title: "Design and Operational Issues Related to the Co-disposal of Sludges and Biosolids in Class I Landfills," Co-Principal Investigator (with D.R. Reinhart and T. Townsend), Florida Center for Solid and Hazardous Waste Management, September 2001 – May 2003, **\$73,530**. (16-21-736)

24. Title: "US-Jordan Municipal Solid Waste Management Collaborative Research" Principal Investigator (with D.R. Reinhart), National Science Foundation, September 2000 – December 2001, **\$26,000**. (16-20-406)
25. Title: "Research Study into Material Performance Testing of Soil Surface Properties using Cyanobacteria Inoculants" Principal Investigator, Engineering Technology Incorporated, August 2000 – June 2002, **\$15,000**. (16-21-844)
26. Title: "Leachate Collection Systems for the New Millennium," Co-Principal Investigator (with D.R. Reinhart), Florida Center for Solid and Hazardous Waste Management, April 1999 – May 2000, **\$14,000**. (16-10-740)
27. Title: "The Interaction of Microbial Activity and Zero Valent Iron Permeable Barrier Technology – Year III", Co-Principal Investigator (with A.A. Randall, D.R. Reinhart), Agency: Gulf Coast Hazardous Substance Research Center, 09/01/98 to 08/31/99, **\$69,729**.
28. Title: "Development of a Graduate Transportation Simulation Curriculum through CATSS", Co-Principal Investigator (with C. Bauer and H. Al-Deek), Agency: CATSS, 03/99-02/2001, **\$20,000**.
29. Title: "Effect of Asphalt Cement Deficiency on Open Graded Friction Course" Principal Investigator, Agency: Florida Department of Transportation (FDOT), November 1998-April 2000, **\$100,000**. (16-20-799)
30. Title: "The Interaction of Microbial Activity and Zero Valent Iron Permeable Barrier Technology – Year II", Co-Principal Investigator (with A.A. Randall, D.R. Reinhart), Agency: Gulf Coast Hazardous Substance Research Center, 09/01/98 to 08/31/99, **\$69,729**. (16-21-831)
31. Title: "Investigation of Shrink and Swell Factors for Soils used in FDOT Construction - Phase II", Principal Investigator Agency: Florida Department of Transportation (FDOT), November 1997 to February 1999, **\$70,000**. (16-20-782)
32. Title: "Permeable Reactive Walls: Field Scale Studies", Co-Principal Investigator (with D.R. Reinhart and C. Clausen), Agency: NASA, Kennedy Space Center, 1996-99, **\$550,000**. (16-20-205)
33. Title: "The Interaction of Microbial Activity and Zero Valent Iron Permeable Barrier Technology – Year I", Co-Principal Investigator (with A.A. Randall, D.R. Reinhart), Agency: Gulf Coast Hazardous Substance Research Center, 09/01/97 to 08/31/98, **\$66,659**. (16-21-828)
34. Title: "Investigation of Shrink and Swell Factors for Soils used in FDOT Construction – Phase I", Principal Investigator, Agency: Florida Department of Transportation (FDOT), 1996-97, **\$66,223**. (16-20-782)
35. Title: "Influence of Modeling Parameters on the Dynamic Response of Concrete Bridges", Co-Principal Investigator (with S.K. Kunnath), Agency: Florida Department of Transportation (FDOT), 1996-97, **\$39,000**.

36. Title: "Detection and Stability Analysis of Sinkholes using a Combined NDE and Analytical Approach, Principal Investigator, Agency: UCF - Department of Sponsored Research (In-House Grants Program), 1996-97, **\$7,500**.
37. Title: "Effect of Increased Superstructure Flexibility on the Dynamic Response of Concrete Bridges", Co-Principal Investigator (with S.K. Kunnath), Agency: Florida Department of Transportation (FDOT), **\$55,000**, 1995-96.
38. Title: "Hydrodynamic Modeling of Leachate Recirculating Landfills", Co-Principal Investigator (with D.R. Reinhart), Agency: Gulf Coast Hazardous Substance Research Center, Lamar University, TX, **\$64,934**, 1995-96.
39. Title: "Active MSW Landfill: Bio-Chemical Reactor II", Co-Principal Investigator (with D.R. Reinhart), Agency: Environmental Protection Agency (EPA) Grant # 50194, **\$90,000**, 1994-95.
40. Title: "Development of BEM for Dynamic Soil-Structure Interaction", Principal Investigator, Research Initiation Grant, University of Central Florida / EIES Seed Grant, **\$10,000**, 1993.

SPONSORED RESEARCH (PRIOR TO JOINING UCF)

Title: "Nonlinear Analysis of Composite Structures using Fourier Series and Green's Function Representations", Co-Principal Investigator (Co-PI with P.K. Banerjee, A.L. Russo, G.F. Dargush, D.P. Henry and S.T. Raveendra), NASA Contract No. NAS3-26491, CALSPAN-UB Research Center, Agency: NASA Lewis Research Center, **\$734,000**, 1992-93.

SELECT LIST OF SIGNIFICANT DECLINED PROPOSALS

1. Title: "Figure it Out: A Collaborative Effort for the Development, Promotion and Delivery of Basic and Applied STEM Content Presented in an Informal Framework", Co-PI, National Science Foundation, \$3,199,259, August 2009.
2. Title: "Advanced Sensing, Material and Analysis Technologies for Civil Infrastructure Systems", Co-PI, National Institute for Standards and Technology, \$1,499,751, September 2009.
3. Title: "Advanced Concepts for Simulation Based Engineering Education", Co-PI, National Science Foundation, \$632,547, January 2007.
4. Title: "Assessing Student Achievement using an Adaptation of a Performance Mapping Approach used by the US Coast Guard", Co-PI, National Science Foundation, \$194,913, February 2003.

GRADUATE THESES AND DISSERTATIONS

DOCTORAL as CHAIR or CO-CHAIR (Chronological)

1. Bruce Butler, "Modeling of the Interactions between Electrochemical Dissolution and Externally Applied Stress Fields" (Co-Chair), Spring 2000.
2. Li Chen, "Non-homogeneous stress behavior using the Boundary Element Method" (Co-Chair), Fall 2000.
3. Mohamed Hassan, "Inelastic Dynamic Behavior and Design of Hybrid Coupled Wall Systems" (Chair), Spring 2004.
4. Assal Hadded, "Use of Vegetative Mulch as Daily and Intermediate Landfill Cover" (Co-Chair), Assal Haddad, Fall 2010.
5. Ikiensinma Gogo-Abite, "Hydrologic Modification of Stormwater Harvesting Ponds and Effluent Control from Construction Sites", Summer 2012.
6. Samar Younes, "Use of Geosynthetics to Prevent Piping Failures due to Seepage in Earth Dams", PhD. Candidate, Expected Graduation Fall 2013
7. Mohammed Al Rowaimi, "Sinkhole Detection using Groundwater Level Sensor Networks", PhD Student, Qualifying Examination Completed in Fall 2011.
8. Mike Hardin, "Integrated Stormwater Management with Reuse", PhD Student, Qualifying Examination Completed in Spring 2013.
9. Andrew Hood, "Use of Soil Amendment BAM in Stormwater Management", PhD Student (Co-Advisor), Started Summer 2012.
10. Scott Kirts, "Consolidation Behavior of Florida Soils Based on Existing Database and Further Testing", PhD Student, Started Spring 2013.

MASTERS THESIS as CHAIR (Chronological)

1. "Settlement and Flow Characteristics of Municipal Landfills", M.S. Thesis, Riad Touati, Summer 1996
2. "Dynamic Response of Bridges under Moving Loads", M.S. Thesis, Jie Wang, Summer 1996
3. "Influence of Traffic Loads and Boundary Conditions on the Dynamic Response of Pre-stressed Concrete Bridges", M.S. Thesis, Mark E. Williams, Spring 1997.
4. "Consolidation Settlement of Embankments on Poor Soils using BEM", M.S Thesis, William D. Sartor, Summer 1997.
5. "Laboratory Testing of Florida Soils to Determine Shrink and Swell Factors for Earthwork Calculations", M.S. Thesis, Ravi Mehta, Summer 1997.

6. "Shrinkage and Bulkage Factors of Florida Soils used in Earthwork Calculations", M.S. Thesis, Carlos Negron, Summer 1997.
7. "Modeling and Field Investigation of a Permeable Reactive Wall for Groundwater Cleanup", Stephen Burwinkel, Summer 1998.
8. "Fracture Mechanics for Modeling Pull-Out Tests in Fiber-Reinforced Concrete", Dragana Jankovic, Summer 1998.
9. "Statewide Investigation of Shrinkage and Bulkage Factors of Florida Earthwork", Raja Hatoum, Summer 1998.
10. "Seismic Response of Deep Foundations using Dynamic Poroelastic BEM", Li Chun, Spring 2000
11. "Effect of Asphalt Cement Deficiency on Open-Graded Friction Courses", Rachel Andre, Spring 2000.
12. "Modeling of the Combined Behavior of Zero Valent Iron and Methanogenic Archae for the Anaerobic Dechlorination of TCE", Ashish Kulkarni, Fall 2000.
13. "Design and Operational Issues for Improvements in MSW Landfill Leachate Collection System", Makarand Khare, Fall 2000.
14. "Material Performance Testing of Soil Surface Properties using Cyanobacteria Inoculant", Caesar Cabral, Fall 2001.
15. "Variations in Pile Lengths between Geotechnical Design and Actual Installations", Jessica AlKhub, Spring 2003.
16. "Determination of In-situ Unit Weight of Soils using Cone Penetrometer Data and Soil Properties", Charles Braun, Summer 2003.
17. "Stability of Slopes in Class I Landfills with Co-disposal of Sludges and Biosolids", Binoy Koodhathinkal, Summer 2003.
18. "Design of Tall and Absorptive Noise Barrier Walls", Judy Martinez, Summer 2003.
19. "Slope Stability Analysis of Class I Landfills with Co-disposal of Biosolids using Field Test Data", Mrutyunjay M. Vajirkar, Fall 2004.
20. "Attainable Compressive Strength of Pervious Concrete Paving Systems", Ann Marie Mulligan, Summer 2005.
21. "Slope Stability Analysis of Laterite Soil Embankments", Ikiensinma Gogo-Abite, Fall 2005.
22. "Adapting the Modified Cam Clay Constitutive Model to the Computational Analysis of Dense Granular Soils", Jose Arvelo, Fall 2005.
23. "Time Variations of Geotechnical Properties of Landfills Accepting Biosolids", Kishore Pinapati, Spring 2006.

24. "Construction Specifications and Analysis of Rehabilitation Techniques of Pervious Concrete Pavements", Craig G. Ballock, Fall 2007.
25. "Development of Hydraulic and Soil Properties for Soil Amendments and Native Soils for Retention Ponds in Marion County, Florida", Lisa Naujock, Fall 2008
26. "Strength of Pervious Pavement System", Ikenna Uju, Summer 2010.
27. "Field Implementation of Polyacrylamides for Runoff from Construction Sites", Rafiqul Chowdhury, Masters Thesis, completed Summer 2011.
28. "Viability Study of a Residential Integrated Stormwater, Graywater, and Wastewater Treatment System at Florida's Showcase Green Envirohome", Matthew Goolsby, Masters Thesis, completed Fall 2011.
29. "Turbidity Removal Efficiency and Toxicity Issues Associated with the Chitosan-Based Dual Polymer Systems", Rylee Hernandez, Masters Thesis, completed Spring 2012.
30. "Evaluation of Biosorption Activated Media under Roadside Swales for Stormwater Quality Improvement and Harvesting", Andrew Hood, Masters Thesis, completed Spring 2012.
31. "Computer Tool for Stormwater BMP Selection", Przemek Kuzlo, Masters Candidate, Spring 2013 expected.
32. "Fertilizer runoff from lower slopes and rainfall intensities", Zuzanna Wasowska, Masters Candidate, Spring 2014 expected.
33. "Toxicity in residual stormwater runoff after polymer treatment", Alicia McDougal, Masters Candidate, Spring 2014 expected.
34. "Performance of Silt Fence under Different Rainfall Intensities and Soil Slopes", Gregg Dubinsky, Masters Candidate, Spring 2014 expected.

PUBLICATIONS

BOOKS

Boundary Element XX – Advances in Boundary Elements Series, Editors: A. Kassab, C. Brebbia and M. Chopra, Computational Mechanics Publications, U.K., 1998.

BOOK CHAPTERS

Chopra, M., Stuart E., and Wanielista, M. “Pervious Pavement Systems in Florida – Research Results”, *Low Impact Development 2010: Redefining Water in the City* (Editors: Scott D. Struck and Keith H. Lichten), Environmental and Water Institute, ASCE Press, 2010.

Chopra, M. B. “Recent Developments in Poroelasticity using BEM”, Book Chapter in *Coupled Problems* (Editors: Aliabadi and Kassab), July 2000.

Chopra, M.B., Dargush, G.F. and Banerjee, P.K., “Finite Deformation Analysis of Soil Penetration Problems”, Chapter 5 in *Developments in Soil Mechanics and Foundation Engineering - 4*, (P.K. Banerjee and R. Butterfield, Eds.) Elsevier Applied Science, London, 1990.

REFEREED JOURNAL PUBLICATIONS

PUBLISHED

1. Gogo-Abite, I, Chopra, M., and Wanielista, M., “Performance Evaluation of Two Silt Fence Fabrics using a Tilting Test-Bed with Simulated Rainfall”, *Geotextiles and Geomembranes*, Vol. 39, pp 30-38, doi: 10.1016/j.geotexmem.2013.07.001, 2013.
2. Gogo-Abite, I., Chopra, M., and Uju, I., “Evaluation of Mechanical Properties and Structural Integrity for Pervious Concrete Pavement Systems”, *J. Materials in Civil Engineering (ASCE)*, doi: 10.1061/(ASCE) MT.1943-5533.0000918, 2013.
3. Chen, X, Wang, D, and Chopra, M., “Constructing Comprehensive Datasets for Understanding Human and Climate Change Impacts on the Hydrologic Cycle”, Invited Article, *Irrigation and Drainage Systems Engineering*, 2:106. doi: 10.4172/2168-9768.1000106, 2013.
4. Butler, B, Chopra, M., Kassab, A, and Chaitanya, V. “Boundary Element Model for Electrochemical Dissolution under Externally Applied Low Level Stress”, *Eng. Anal. Boundary Elem.* (2013), <http://dx.doi.org/10.1016/j.enganabound.2013.03.010>.
5. Kakuturu, S., Chopra, M., Hardin, M., and Wanielista, M. “Runoff Curve Numbers for Simulated Highway Slopes under Different Slope, Soil-Turf, and Rainfall Conditions”, *J. of Hydrologic Engineering*, ASCE, DOI 10.1061/(ASCE) HE.1943-5584.0000605, 2013.

6. Hood, A., Chopra, M., and Wanielista, M., "Assessment of Biosorption Activated Media Under Roadside Swales for the Removal of Phosphorus from Stormwater". *Water*, 5(1), 53-66; doi: 10.3390/w5010053.
7. Gogo-Abite, I, Chopra, M., and Wanielista, M., "Integrated Surface-Ground Water Model for Stormwater Harvesting Using Basic Mass Balance Principles", *J. Irrigation and Drainage Engineering*, ASCE, DOI 10.1061/(ASCE) IR.1943-4774.0000518, 2012.
8. Kakuturu, S., Chopra, M, Hardin, M., and Wanielista, M. "Effect of Rainfall, Slope, Soil, and Fertilizer Type on Losses of Total Nitrogen (TN) from Fertilized Turfs on Highway Slopes", *J. Environmental Engineering*, ASCE, DOI 10.1061/(ASCE) HE.1943-7870.0000690, 2012.
9. Chopra, M, Kakuturu, S., Ballock, C, Spence, J and Wanielista, M. "Determination of the Infiltration Rates and the Effect of Rejuvenation Methods for Pervious Concrete Pavements, *J. of Hydrologic Engineering*, ASCE (Special Issue on LID), Vol 15, No. 6, pp. 426-433, 2010.
10. Butler, B, Kassab, A, Chopra, M. and Desai, V. "Boundary Element Model of Electrochemical Dissolution with Geometric Nonlinearities", *Engineering Analysis with Boundary Elements*, Vol. 34, pp. 714-720, 2010.
11. Chen, L., Kassab, A.J., Nicholson, D.W., and Chopra, M.B., "Generalized Boundary Element Method for Solids Exhibiting Nonhomogeneities," *Engineering Analysis with Boundary Elements*, Vol. 25, No. 6, pp. 407-422, 2001.
12. Dargush G.F. and Chopra, M.B., "Dynamic Analysis of Circular Foundations on a Poroelastic Soil Stratum using the Boundary Element Method", *Journal of Engineering Mechanics*, ASCE, Vol. 122, No. 7, pp. 623-632, July 1996.
13. Chopra, M.B. and Dargush G.F., " Boundary Element Analysis of Stresses in an Axisymmetric Soil Mass Undergoing Consolidation", *International Journal of Numerical and Analytical Methods in Geomechanics*, Vol. 19, No. 3, pp. 195-218, 1995, 24 pages.
14. Chopra, M.B. and Dargush, G.F., "Development of BEM for Thermoplasticity", *Int. J. Solids Structures*, Vol. 31, No. 12/13, pp. 1635-1656, 1994.
15. Chopra, M.B. and Dargush, G.F., "Thermal Stress Analysis of Axisymmetric Bodies via the Boundary Element Method", *Comp. Meth. in Appl. Mech. Engng.*, Vol. 108, pp 53-71, 1993.
16. Chopra, M.B. and Dargush, G.F., "Finite Element Analysis of Time-Dependent Large Deformation Problems", *Int. J. Num. Anal. Methods in Geomechanics*, Vol.16, No.2, pp. 101-130, 1992.

UNDER REVIEW, FINAL REVISIONS OR IN PRESS

17. Hardin, M., Chopra, M., Wanielista, M. and Gogo-Abite, I, "Determination of Porosity and Curve Numbers for Pervious Pavement Systems", J. of Hydrologic Engineering, ASCE , Under Final Revisions, Submitted May 2013.
18. Gogo-Abite, I, Chopra, M., Hardin, M., Wanielista, M. and Stuart, E., "In situ Permeability Determination Device for Porous Pavement Systems", J. Irrigation and Drainage Engineering, ASCE, Under Review, Submitted July 2013.
19. Behring, Z., Nam, B.-Y., and Chopra, M., "The Use of Recycled Concrete Aggregate in French Drain Applications", Transportation Research Board, Under Review, Submitted August 2013.
20. Yun, H.-B., Park, S.-Y., Mehdawi, N., Chopra, M. and Reddi, L.N., "Monitoring for Close Proximity Tunneling Effects on Existing Tunnel using Blind Source Separation Technique with Limited Sensor Data", Tunneling and Underground Space Technology, Under Review, Submitted February 2013.
21. Haddad, A., Chopra, M., and Reinhart, D.R., "Geotechnical and Hydraulic Behavior of Vegetative Mulch used as Alternative Daily and Intermediate Landfill Cover", Land, Under Review, Submitted for Publication, February 2013.

OTHER PUBLICATIONS (Reviewed)

Chopra, Manoj, Hagen Scott, and Reddi, L.N., "Hydro-Environmental Education at the University of Central Florida, The Florida Watershed Journal, An Official Publication of the FWEA and the Florida Section of AWRA, Volume 3, Issue 1, 2010.

REFEREED CONFERENCE PROCEEDINGS PUBLICATIONS AND PRESENTATIONS (in reverse chronological order)

1. Behring, Z., Nam, B-H, Chopra, M., and Shoucair, J., 2013, "Evaluating the Use of Recycled Concrete Aggregate in French Drain Applications", GeoCongress 2014, Atlanta, GA, February 2014.
2. Younes, S., Reddi, L. and Chopra M., "Mutual Influence of Two Inadvertent High-Permeability Zones on Hydraulic Gradients in Earth Dams", Paper 328, GeoHubei 2014, Geohubei International Conference, Hubei China, July 2014.
3. Dubinsky, G., Gogo-Abite, I. and Chopra, M., "Evaluation of Silt Fence Materials During and After Rainfall Events", Environmental Connection 2014, International Erosion Control Association (IECA), Nashville, TN, February 2014.
4. Gogo-Abite, I., and Chopra, M., 2011. "Performance Evaluation of Silt Fence and Polyacrylamide Enhanced Silt Fence" Environmental Connection (EC11) Conference, Orlando, Florida. February 20 - 23, 2011. International Erosion Control Association, Section 7 online.

5. Haddad, A., Reinhart, D. R. and Chopra, M., "Use of Vegetative Mulch as Alternative Landfill Cover", 2010 Global Waste Management Symposium, San Antonio, TX, October 2010.
6. Chopra, M., Wanielista, M. and Stuart, E., "Pervious Pavement Systems", Geotechnical and Materials Engineering Council (GMEC) Conference, Florida Engineering Society, Orlando, FL, May 2010.
7. Chopra, M, Wanielista, M. and Stuart E. "Pervious Pavement Systems in the Statewide Stormwater Rule", Florida Stormwater Association, Winter Conference, Tampa, FL, December 2009.
8. Chopra, M., Kakuturu, S. and Hardin, M., "Runoff and Erosion Testing at the Stormwater Academy Laboratory at UCF", 2009 H2O and Erosion Control Workshop, March 2009.
9. Chopra, M., "Pervious Pavement Systems, ASCE Annual Low Impact Design Conference, (Invited), Seattle, WA, November 18, 2008.
10. Chopra, M., "Design and Construction of a Test Bed for Erosion and Sediment Control BMP Testing", STORMCON 2008, Orlando, FL, August 5, 2008.
11. Chopra, M, and Wanielista, M, "Performance of Pervious Pavements" Design Conference, Florida Department of Transportation, July 29, 2008
12. Chopra, M., "Index Testing to Support the Stormwater Management Erosion and Sediment Control Laboratory, FDOT Geotechnical Research in Progress (GRIP) Conference, July 17, 2008
13. Chopra, M., "Ongoing and new research efforts at the UCF Stormwater Management Academy", (invited paper), 24th Annual ASCE Water Resources Technical Group Seminar, May 2008.
14. Chopra, M., "UCF Erosion and Index testing", H2O and Erosion Control Workshop, UCF, March 14, 2008.
15. Chopra, M., "Sediment Control Countermeasures", GMEC Conference, Florida Engineering Society, Orlando, FL, April 2007.
16. Chopra, M., "Alum and Polymers from a Design Perspective", H2O and Erosion Control Workshop, Stormwater Management Academy, UCF, March 2007.
17. Chopra, M., "UCF Research and Education Laboratory", H2O and Erosion Control Workshop, Stormwater Management Academy, UCF, March 2007.
18. Chopra, M, Wanielista, M, Offenber, M., Spence J. and Ballock, C., "Pervious Concrete Pavements – Geotechnical and Materials Issues", GMEC Conference, Florida Department of Transportation, Orlando, FL, April 2006.
19. Chopra, M, Wanielista, M, Spence J. and Ballock, C. and Offenber, M., "Hydraulic Performance of Pervious Concrete Pavements", 2006 Concrete Technology Forum,

Focus on Pervious Concrete, National Ready Mix Concrete Association, Publication 2PCTF06, May 2006, Nashville, TN.

20. Chopra, M, Wanielista, M, Spence J. and Ballock, C. and Offenber, M., "System Performance of Pervious Concrete Parking Areas", 2nd Biennial Stormwater Management Research Symposium, (editors M. Wanielista and J. Smoot) pp. 285-298, May 2006.
21. Chopra, M., Reinhart, D., Vajirkar, M. and Koodhathinkal, B., "Stability of Slopes of Municipal Solid Waste Landfills with Co-disposal of Biosolids", Geo-Environment and Landscape Evolution II, Rhodos, Greece, June 2006, WIT Press, (Editors. Martin-Duque, Brebbia, Emmanoloudis and Mander), pp. 215-224.
22. Chopra, M. and Wanielista, M., "Green Pavements – Feasibility and Performance of Pervious Concrete Pavements", India 2006, Proceedings of the International Perspective on Environmental and Water Resources Conference, New Delhi, December 2006.
23. Wanielista, M. and Chopra, M., "Florida Erosion and Sediment Control Initiative", FICE/FDOT Design Conference-Designing for More than Bridges and Roads, Orlando, FL, July, 2006.
24. Wanielista, M., Chopra, M., Offenber, M., Spence. J., and Ballock, C., "Performance of Pervious Concrete Pavements", Annual Meeting of the Florida Stormwater Association, June 29-July 1, 2005, Sanibel Island, FL.
25. Chopra, M., Wanielista, M., Offenber, M., Spence. J., and Ballock, C., "Stormwater Management Issues related to Performance of Pervious Concrete Pavements", Stormwater Management for Highways, Transportation Research Board TRB AFB60 Special Symposium, July 11-12, 2005, Bonita Springs, FL.
26. Chopra, M., "Sinkholes and bearing capacity failures on Mars", Invited paper, Conference on Granular Materials on Lunar and Martian Surface", NASA Kennedy Space Center, February 2 and 3, 2005. (to be published in the Report of the Group to MARS Mission Director).
27. Chopra, M.B. "Outcomes Assessment Tools Identified for the Civil and Environmental Engineering Programs at the University of Central Florida", ASCE National Convention, Nashville, TN, November 14, 2003.
28. Chopra, M.B. "Deep Foundation and Geotechnical Test Site at University of Central Florida", FDOT – GRIP Conference, July 22, 2003.
29. Khare, M., Chopra, M.B. and Reinhart, D.R., "Innovative Landfill Leachate Collection Systems", Environmental Engineering Conference, IIT Chennai, India, October, 2003.
30. Khare, M., Chopra, M.B. and Reinhart, D.R., "Design Issues with MSW Landfill Leachate Collection Systems", Waste Tech 2002.

31. Chopra, M.B., McCreanor, P.T. and Reinhart, D.R., "Hydrodynamic Modeling of Leachate Recirculating Landfills, SECTAM, Orlando, June 2002.
32. Chopra, M.B. and Andre, R. "Asphalt Pavement Deterioration", GMEC Conference, Florida Department of Transportation, Orlando, FL, May 2001.
33. Butler, B, Chopra, M.B. and Kassab, A.J. "Boundary Element Model for Stress Field – Electrochemical Dissolution Interactions", 14th ASCE Engineering Mechanics Conference (EM2000), Austin, May 21-24, 2000.
34. Sfeir, H, Randall, A., Reinhart, D. and Chopra, M. "Biotic Attenuation and Zero-Valent Iron Permeable Barrier Technology", presented at Battelle Conference on Remediation of Chlorinated and Recalcitrant Compounds, Second International Conference, Monterey, CA, May 22-25, 2000.
35. Reinhart, D., M. Chopra, C. Clausen, and J. Quinn, "NASA PRB Installation Using Deep Soil Mixing," RTDF Permeable Reactive Barriers Action Team Meeting, Melbourne, FL, Feb. 16-17, 2000.
36. Chun, L., Chopra, M.B. and Dargush, G.F. "Response of a Pile to Impinging Seismic Waves using a Poroelastic Boundary Element Method ", presented at the 13th ASCE Engineering Mechanics Conference, Baltimore, June 13-16, 1999.
37. Eaglin, R., Miller, R., Batarseh, I. And Chopra, M., "Planning and Evaluation of a New Engineering Freshman Experience Course at the University of Central Florida", presented at the ASEE Southeast Regional Conference, Clemson University, April 12, 1999.
38. Chopra, M.B., S. Burwinkel, D. R. Reinhart, and J. Quinn, "Installation of a Field-Scale permeable Reactive Wall Using Deep Soil Mixing," Proceedings of the 4th International Symposium on Environmental Geotechnology and Global Sustainable Development, Boston, MA, August 9-13, 1998.
39. D. R. Reinhart, J W. Quinn, C. A. Clausen, M. B. Chopra, C. Geiger, N. Ruiz, S. Burwinkel, "Scale-Up Of Zero-Valent Iron Permeable Treatment Wall Design Parameters." Proceedings of the Water Environment Federation Conference, Orlando, FL, Oct. 5-8, 1998.
40. Chen, L., Kassab, A.J. and Chopra, M.B., "Strain Energy Density Based BEM for Rotor Dynamic Analysis, 12th ASCE Engineering Mechanics Conference Proceedings, La Jolla, CA., May 17-20, 1998.
41. Dargush, G.F. and Chopra, M.B., "Seismic Response of Poroelastic Media via BEM", 12th ASCE Engineering Mechanics Conference Proceedings, La Jolla, CA., May 17-20, 1998.
42. Reinhart D.R., M. B. Chopra, S. Burwinkel, and J. Quinn, "Installation of a Filed-Scale permeable Reactive Wall Using Deep Soil Mixing," 4th Annual Florida Remediation Conference, Orlando, FL, Nov. 10-11, 1998.

43. Chopra, M.B., Wang, J., Williams, M.E., Kunnath, S.K. and Shahawy, M., "Dynamic Response of Highway Girder Bridges Subjected to Traffic Loads", Proceedings of the Structural Engineers World Congress in San Francisco, July 1998.
44. Chopra, M.B. and Dargush, G.F., "Dynamic Response of Embedded Strip and Rectangular Foundations using a Poroelastic BEM", Proceedings of the 19th World Conference on the Boundary Element Method (BEM19), Rome, Italy, September 1997.
45. Chopra, M.B. and Dargush, G.F., "Dynamic Response of Embedded Circular Foundations using a Poroelastic BEM", Proceedings of the 9th Conference of the International Association for Computer Methods and Advances in Geomechanics (IACMAG), Wuhan, China, November, 1997.
46. Chopra, M.B., Reinhart, D.R., Touati, R. and Quinn, J.W., "Design of a Field Scale Permeable Reactive Wall for Zero Valent Metal Treatment of Contaminated Groundwater", Proceedings of the 1997 CSCE-ASCE Environmental Engineering Conference, Edmonton, Canada, July 1997.
47. Wang, Jie, Chopra, M.B. and Kunnath, S.K., "Sectional Analysis for Nonlinear System Identification of Concrete Structures" Proceedings of the 11th Engineering Mechanics Conference, ASCE, Fort Lauderdale, Florida, May 1996.
48. Butler, B., Kassab, A.J., Desai, V.H. and Chopra, M.B., "Boundary Element Model for Pitting Corrosion in Passivated Metals", Proceedings of the 11th International Conference on Boundary Element Technology (BETECH96), Hawaii, April 1996.
49. Chopra, M.B. and Dargush, G.F., "Seismic Analysis of Pile-Soil Interaction with a Poroelastic Soil Model using the Boundary Element Method", Special Session on the Performance of Deep Foundations under Seismic Loading, Proceedings of ASCE National Convention, San Diego, October, 1995.
50. Chopra, M.B. and Dargush, G.F., "Dynamic Analysis of Axisymmetric Foundations on a Poroelastic Stratum using BEM", Proceedings of 10th ASCE Engineering Mechanics Conference, Boulder, Colorado, May 1995.
51. Onyemelukwe, U.O., Mirmiran, A.M. and Chopra, M.B., "Application of Boundary Element Method for Structural Damage Assessment", Proceedings of ASCE Structures Congress '95, Boston, Massachusetts, April 1995.
52. Butler, B., Kassab, A., Chopra, M.B. and Desai, V., "Galvanic Corrosion Prediction of Roof Systems at Walt Disney World", Proceedings of BETECH 95, Madison, Wisconsin, August 1995.
53. Butler, B., Chopra, M.B., Desai, V.H. and Kassab, A.J., "A Coupled BEM-Experimental Method for the Detection of Corrosion Activity in Buried Pipelines", Proceedings of the 10th Engineering Mechanics Conference, ASCE, Boulder, Colorado, May 1995.

54. Butler, B., Kassab, A.J., Chopra, M.B. and Desai, V.H. "Galvanic Corrosion Predictions of Roof Systems at Walt Disney World", Proceedings of BEM17, 17th World Conference on the Boundary Element Method, Hawaii, July 1995.
55. Chopra, M.B. and Dargush, G.F., "Application of BEM to problems of Elastoplasticity and Nonlinear Soil Consolidation", Proceedings of Ninth International Conference on Boundary Element Technology (BETECH94); Orlando, Florida, March 1994.
56. Chopra, M.B., Dargush, G.F. and Banerjee, P. K., "Development of BEM for Thermoplastic Analyses", Proceedings of the Second U.S. National Congress on Computational Mechanics, Washington, D.C., August 1993.
57. Dargush, G.F. and Chopra, M.B., "An Advanced BEM for Thermoplastic and Nonlinear Soil Consolidation Analysis", Proceedings of the First U.S. National Congress on Computational Mechanics, Chicago, July 1991.
58. Chopra, M.B. and Dargush, G.F., "Numerical Solutions to Some Geotechnical Problems with Material and Geometric Nonlinearities", Proceedings of Seventh Annual Joint Meeting of Geotechnical Engineering, Rensselaer Polytechnic Institute, Troy, New York, July, 1990.

OTHER PUBLISHED ABSTRACTS OR PRESENTATIONS AT SCHOLARLY MEETINGS

1. Chopra, M., "Pervious Pavement Systems, Presentation at the Nodarse and Associates Annual Geotechnical Group (Invited), October 24, 2008.
2. Chopra, M.B, and Townsend F. "Deep Foundation Test Site at the University of Central Florida", Geotechnical Research in Progress (GRIP) Meeting, Gainesville, Florida, July, 2002.
3. Chopra, M.B., Negrón, C.A. and Morgan, K. "Improved Shrinkage and Bulkage Factors for Borrow Soils used in Florida Earthwork", 1998 Annual Meeting of the Transportation Research Board (TRB), January 1998.
4. Dargush, G.F. and Chopra, M.B., "An Advanced BEM for Thermoplastic and Nonlinear Soil Consolidation Analysis", The First U.S. National Congress on Computational Mechanics, Chicago, July 1991.

BOOK REVIEWS

Chopra, M.B., "Computer Methods and Advances in Geomechanics - H.J. Siriwardane and M.M. Zaman, Editors", Book Review in the *Int. Journal for Numerical and Analytical Methods in Geomechanics*, Vol. 19, pp. 453-454, 1995.

NATIONAL AND INTERNATIONAL SCHOLARLY ACTIVITIES

- Fellow of the Wessex Institute of Technology, United Kingdom.

- Member of the Organizing Committee for the 10th International Conference on Hydroscience and Engineering (ICHE) in Orlando, November 4-9, 2012.
- Travelled to Jordan on three occasions (1999-2002) to collaborate on research in water and solid waste issues funded by the National Science Foundation.
- Invited Speaker and International Presentations –
 - “Pervious Pavement Systems”, ASCE Annual Low Impact Design Conference, (Invited), Seattle, WA, November 18, 2008.
 - “Stability of Slopes of Municipal Solid Waste Landfills with Co-disposal of Biosolids”, (Invited) Geo-Environment and Landscape Evolution II, Rhodes, Greece, June 2006.
 - “Green Pavements – Feasibility and Performance of Pervious Concrete Pavements”, India 2006, The International Perspective on Environmental and Water Resources Conference, New Delhi, December 2006.
 - “Dynamic Response of Embedded Circular Foundations using a Poroelastic BEM”, (Invited) Ninth Conference of the International Association for Computer Methods and Advances in Geomechanics (IACMAG), Wuhan, China, November, 1997.
- Member, Transportation Research Board (TRB) Project Panel E21-06, Corrosion in the Soil Environment – Soil Resistivity Measurements, 1999-00.
- Member, TRB Project Panel 24-11, Specifications for Geofoam as Lightweight Fill, 1997-2010.
- Member, TRB Project Panel 24-13, Tensioned Systems in Geotechnical Applications, 1997-present.
- Member of Committee 522 of the American Concrete Institute dealing with Pervious Concrete Pavements.
- Reviewer for Journal of Engineering Mechanics, ASCE and Journal of Geotechnical, Geomechanical and Geoenvironmental Engineering, ASCE and International Journal for Numerical and Analytical Methods in Geomechanics.
- Reviewer for the journal “Water”
- Reviewer for Transportation Research Board Journal
- Reviewer for International Journal for Numerical Methods in Engineering.
- Reviewer for the 9th Conference of the International Association for Computer Methods and Advances in Geomechanics, Wuhan, China.
- Received the NASA Certificates of Honor for Contributions to Technical Briefs and for Submission of Patent through NASA.

- Recognized by the UCF Board of Trustees for NASA Research project and AAEE award, January 23, 2003.

IMPACT OF MY RESEARCH

The broader aspects of the impact of my research activities are summarized below:

- The results of the research on pervious pavements and stormwater reuse have been included in the new Statewide Rule and Stormwater Applicant Handbook by the Florida Department of Environmental Protection and the Water Management Districts in Florida. The work at the Stormwater Management Academy forms the basis for many of the best management practices included in these publications.
- The recently completed research project on the impact of fertilization on slopes using the innovative rainfall simulator has been published in the FDOT Research Showcase as a success story in quantifying the nutrients in the runoff from fertilization. The new practice adopted by FDOT is significantly reducing the amount of nitrogen and eliminating all phosphorus in the discharge from these slopes.
- My research on the investigation of shrink and swell factors for soils used in earthwork calculations has led to millions in savings to the state of Florida due to improved factors. The results of the research were incorporated into the FDOT payment schedules and form the basis for earthwork in the state.
- I served as a member of the ACI 522 Committee that developed the specifications for the construction and testing of pervious concrete pavement. Our research formed the basis for a portion of this national publication.
- The research on Zero-Valent Permeable Treatment walls has been used as the basis for enhanced technologies in groundwater cleanup for TCE contamination.

EDUCATIONAL ACTIVITIES:

UNDERGRADUATE COURSES

Engineering Mechanics - Statics
Statics (Honors)
Mechanics of Materials
Geotechnical Engineering I and II
Introduction to the Engineering Profession
Civil Engineering Capstone Design
Geotechnical Engineering Design

GRADUATE COURSES

Geotechnical Engineering II
Boundary Elements in Civil Engineering
Advanced Geotechnical Engineering
Foundation Engineering

TEACHING-RELATED RECOGNITION

- Consistently amongst the highest scores in the Student Perception of Instruction for the Department and the College of Engineering and Computer Science.
- Teaching Incentive Program (TIP) Award, University of Central Florida 2012, 2006, 2002, and 1996 (Each time I was eligible to compete for this award)
- Gold Apple Award for Outstanding Teaching voted by the CECE Students: 2009, 2008, and 2007.
- 2009 CECE Department Excellence in Undergraduate Teaching Award, Nov. 2009
- 2007 CEE Department Excellence in Undergraduate Teaching Award.
- 2009 Certificate of Commendation as a Faculty Advisor– Committee on Student Activities of the American Society of Civil Engineers (ASCE), Reston, VA.
- 2007 Region 5 Faculty Advisor of the Year Award, American Society of Civil Engineers, Committee on Student Activities.
- 2003-2004 ASCE East-Central Branch, Outstanding Teacher of the Year.
- 2003-2004 Chi Epsilon Excellence in Teaching Award for the Southern District.
Chi Epsilon - Civil Engineering Honors Society
- Tau Beta Pi Professor of the Year voted by ALL ENGINEERING STUDENTS in the College of Engineering and Computer Science, 2003, 1998, 1997, and 1996.
- 2002 Engineering Faculty of the Year
Florida Engineering Society, FES Annual Meeting, August 2002
- Excellence in Undergraduate Teaching, 1997, University of Central Florida
- Undergraduate Teacher of the Year, 1996-97
Department of Civil and Environmental Engineering, University of Central Florida.

- Engineering Professor of the Year, Chi Epsilon, National Civil Engineering Honors Society, 1997, 1996 and 1995

ASSESSMENT RELATED ACTIVITIES

- Primary Responsibility for the Civil, Environmental and Construction Engineering Program Reviews by **ABET** in 2002 and 2008.
- Serve as a **Program Reviewer for ABET** (2004-present).
- Serve as Invited Mock Program Reviewer for programs preparing for ABET (2008 and 2009).
- Presentation to Chairs and Deans at the Assessment Workshop on Assessment on Civil Engineering Assessment Activities, March 28, 2003. Civil Engineering selected by UCF as the example of “**best practice**” for entire university system.

EDUCATIONAL ENHANCEMENT ACTIVITIES

- Developed and piloted the **New Civil Engineering Capstone Design Course**. - The class uses a team of practicing engineers to teach a multi-disciplinary project-based design class. The projects are done in teams of three and include different aspects of civil engineering such as water resources, transportation, structural, geotechnical and construction engineering. Team members bring different ‘expertise’ from a prior design course and contribute to an overall design project. The final report and presentation are presented in front of a group of professional engineers in a mock county-commission hearing format.
- One of the participating faculty in the successful and high profile **NSF funded EXCEL program since 2008**. Taught two sections on Applications of Calculus to Engineering – one on extreme value and optimization and the other on the use of exponential and logarithmic functions in engineering applications. Also participating in **NSF funded COMPASS program** at UCF.
- Mentored TWO students in the NSF funded I-CUBED **STEAM** (Science, Technology, Engineering, ARTS, Mathematics) Program. Partnership between engineering and arts majors.
- **Hosted TEN NSF funded EXCEL students** in my laboratory for Undergraduate Research Experience. Three students from this program went on to join the graduate program and graduate with MS degrees.
- **Proposals** related to Educational Activities
 - 2010 - Proposal to NSF CCLI program with Michael Georgiopolous of EECS on educational opportunities and recruitment of STEM Majors.
 - 2009 – Proposal to NSF Informal Education program with Michael Georgiopolous called Figure it Out to develop STEM content to educate general public in an informal education setting.

- 2009 – Proposal to NSF CCLI program with Melody Bowden and others through FCTL on including service-learning projects for engineering students.
- Taught a session of the **SPACE program** class to minority students interested in engineering careers in 2008.
- Participated in the “**Teach-In Seminole County**” program at Carillon Elementary School in Oviedo in November 2007.
- Member of the Development Team for the **Quality Enhancement Plan** for the University of Central Florida on Informational Fluency 2006.
- Co-Principal Investigator for NSF Action Agenda Proposal for UCF 2K+ Undergraduate Curriculum for the Next Millennium submitted in October 1998.
- Member of a team that developed and implemented the new Freshmen Engineering class EGN 1006 Introduction to the Engineering Profession in the Fall 1998 semester. Taught one of the 16 sections with 20 students. Held breakout sessions and coordinated external speaker presentations.
- Member of the team that developed and implemented the new Freshmen Engineering class EGN1007 Engineering Concepts and Methods in the Spring 1999 semester. Helped with formulation of the syllabus and topics, and the selection of the customized text material for this course.
 - Obtained two grants totaling, \$10,000, from the Florida Department of Transportation (FDOT) to purchase new equipment for the Geotechnical Engineering Laboratory. Equipment such as an Automatic Compaction Machine for Proctor Tests, new Sieve Shaker and several modern scales.
 - Attended the Industrial Needs Workshop organized by the Gulf Coast Hazardous Substance Research Center in Texas.
 - Offer the PE and FE Review Course every term.
 - Acquired equipment donations from Rinker Materials and Florida Concrete and Products Association for the Geotechnical and Pavement Laboratory.
- Judge: Showcase of Undergraduate Research (**SURE**) and **Graduate Research Forum** in 2008, 2009, and 2010.
- Mentor for **THREE National Merit Scholars** through the Burnett Honors College at UCF, 2011.
- Collaborated with Burnett Honors College on the development of **E-Portfolios**.

TEACHING RELATED CONFERENCES

- Organized **five workshops on Technology Transfer and Educational Materials** related to proper Erosion and Sediment Control measures for environmental management. Through the UCF Continuing Education for professional development.
- Attended the **FCTL Workshop on Ethics and Core Commitments** in 2007.
- Attended a **Seminar on Preventing Discrimination** through UCF Continuing Education in August 2008.

RECRUITING RELATED ACTIVITIES

- Procured \$2000 by the COE International Travel Committee to travel to India in March 2000 to make presentations at two campuses of Indian Institute of Technology in Mumbai and Delhi for recruitment of quality graduate students.
- Worked in recruiting quality STEM students from local schools on a project with Science Teacher Cap Jadonath of Menard Evans High School in Orlando to develop bilateral relations where UCF faculty will provide expertise through lectures at the school and educating the students (both at the school and at UCF) and utilize some excellent laboratory equipment that Evans H.S. has obtained through a grant from a multinational company.
- Worked on a proposal with Professor Y. Hosni of Industrial Engineering Department for a joint partnership with local schools (starting with Menard Evans High School) for recruitment of potential engineering students. Particular emphasis on recruitment of minority students in engineering.
- Organized a seminar on “Education Needs and Job Search Strategies for Engineers” on the campus of UCF through the local chapter of the Florida Engineering Society (FES) on March 26, 1995. Speakers included prominent consulting engineers and the Chief Engineer of Seminole County. Also assisted in hosting PROJECT CREATE at UCF sponsored by FES for local elementary school children.

PROFESSIONAL SERVICE:

UNIVERSITY AND STATE EDUCATION SERVICE ACTIVITIES

- **Member of the Florida Board of Governors, July 2012 - present**
- **Chair of Advisory Council of Faculty Senates** for all State Universities in Florida (Chair of this Committee serves on the Board of Governors for FL).
- **Chair of the UCF Faculty Senate, May 2005 - May 2009**
- **Member of the UCF Board of Trustees, May 2005 – May 2009**
- **Member of the Search Committee for the Chancellor of the State University System** for the Board of Governors, September 2009.
- **University Contact**, Gulf Coast Hazardous Substance Research Center, 1996-present

UNIVERSITY ATHLETICS RELATED ACTIVITY

- **NCAA Faculty Athletics Representative for UCF, June 2012 - present**
(Officially charged with Certification and Eligibility of ALL Student Athletes at UCF, Coordinating Academic Mentoring for Student Athletes)

PROFESSIONAL ASSOCIATION MEMBERSHIPS

- Member, American Society of Civil Engineers (ASCE).
- Fellow, Wessex Institute of Technology, Southampton, UK
- Treasurer, Florida Engineering Education Committee, Florida Engineering Society, 2008-2010.
- Member, American Society of Engineering Education (ASEE)
- Member, International Society of Soil Mechanics and Foundation Engineering (ISSMFE)
- Member, U.S. Association of Computational Mechanics (USACM)

PROFESSIONAL COMMITTEE MEMBERSHIPS

- Member of the ASCE LID Committee, 2008-present
- Member of the American Concrete Institute, Committee on Pervious Pavements, 2006-present
- Member, ASCE Dynamics Committee, Engineering Mechanics Division, 1995-present.
- Member, TRB Committee on Modeling Techniques in Geomechanics - A2K05, 1997-present.
- Member, ASCE Computational Mechanics Committee, Engineering Mechanics Division, 1995-98.
- Member, TRB Subcommittee on Reliability of Geotechnical Structures - A2K05(2) 1995-2000.
- Regional Correspondent, Newsletter, International Society of Computer Methods and Advances in Geomechanics (IACMAG), 1995-2001.

CONFERENCE ACTIVITIES

- Organizing Committee for the 10th International Conference on Hydroscience and Engineering (ICHE) in Orlando, November 4-9, 2012.
- Conference Co-Chair, H2O and Erosion Control, 2007, 2008 and 2009, University of Central Florida, Orlando.
- Faculty Mentor for the National Student Steel Bridge Competition at UCF in 2005 and the Southeast Regional Conference of ASCE at UCF in 2008.
- Conference Organizing Committee, International Deep Foundations Congress, ASCE Geo-Institute, Orlando, 2002.
- Conference Co-Chair, BETECH2001, Orlando, Florida, September 2001.
- Conference Co-Chair, BEM20, 20th World Conference on the Boundary Element Method, Orlando, Florida, December 1998.
- Session Chair, 14th Engineering Mechanics Conference, Austin, TX, May 2000.
- Session Chair or Co-Chair, 11th, 12th and 13th Engineering Mechanics Conference, Fort Lauderdale (1996), San Diego (1997) and Baltimore (1999).
- Session Chairman, Session on Acoustics: 9th International Conference on Boundary Element Technology (BETECH 94), Orlando, Florida, March 1994.

UNIVERSITY SERVICE ACTIVITIES AND COMMITTEES

- President's Advisory Council (PAS), 2005-present
- University Budget Committee – 2005-present
- Chair of the Trustee Chair Selection Committee, 2006
- Chair of the University Excellence in Professional Service Awards Selection, 2006
- Member of the College of Science Deans Search Committee, 2006
- Member of the Federal Priorities in Research for UCF, 2006
- Member of the Game-day Activities Committee, 2006-present
- Member of the Pegasus Professor Selection Committee, 2006
- Member of the SACS Review Planning Council, 2006
- FCTL Advisory Board, 2005-present
- Member of the Alcohol and Tailgating Task Force, 2005-06
- Member of the QEP Development Team, 2005-2006
- Member of the FCTL Advisory Board, 2005-2006
- Member of the Search Committee for the Dean of the College of Sciences, 2006
- Member, Subcommittee on Electronic Thesis and Dissertations, 2002-03

COLLEGE AND DEPARTMENT COMMITTEES

- Member of the Geotechnical/Materials and Construction Search Committee 2010-11
- Chair of the Hydro-Environmental Search Committee 2009-2010

- Chair of the Construction Engineering Search Committee, 2006
- Member of the Infrastructure Search Committee, 2009
- Member of the Water Resources Search Committee, 2009
- Member of the CEE ABET Committee, 2006
- Member – CEE Chair Search Committee, 2004-2005
- Member – CEE Construction Engineering Search Committee, 2005-06
- Member – CECS Scholarships and Awards Committee, 1996-2009
- Member – CEE Personnel Committee, 2005
- Member – CEE Structural Engineering Faculty Search Committee, 2003
- Member – CECS Sabbatical Committee, 2002
- Member – CECS Promotion and Tenure Committee, 2001-2003
- Member, CECS New Building Committee, 1998-2001

FACULTY ADVISOR FOR STUDENT CHAPTERS

- **Faculty advisor for American Society of Civil Engineers (ASCE)**, Student Chapter at the University of Central Florida, May 1997-July 2010.
- **Faculty Advisor for Tau Beta Pi**, Engineering Honors Society, Student Chapter at the University of Central Florida, 2007-present.
- **Faculty advisor for Florida Engineering Society (FES)**, Student Chapter at the University of Central Florida, January 1994-2001.
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- **Faculty advisor for CECS-Deans Student Advisory Council**, University of Central Florida, January 2000-2002.
- **Faculty Advisor for the Student Chapter of Chi Epsilon**, National Honors Society for Civil Engineering, 1995-2000.
- Advisor to the students of ASCE in the Geotechnical Engineering Competition at the Southeast Regional Competition of the ASCE.

JUDGING

- Judge for Graduate Research Forum and Showcase of Undergraduate Research (SURE), 2005-present.
- Judge for the Florida Annual Science Fair, Orlando 1999 and Lakeland 2002 and Jacksonville 2003.
- Judge for the Orlando Science Center, Science Fair, Orlando, Florida, 1999, 2000 2002 and 2003.
- Judge for FJAS Florida Junior Academy of Science, Rollins College, March, 1998.
- Advisor and judge for the bridge competition during the Annual Florida SECME Olympiad Student Competition at the University of Central Florida in 1996 and 1997
- Judge for the NSBE National Convention USTR Competition, 2002.

PUBLIC RELATIONS ACTIVITIES

- NBC National News and Today Show – Sinkhole Coverage
<http://www.nbcnews.com/video/nightly-news/52739627/#52739627>
- Featured on the UCF TV Show “The Faculty Lounge”.
<http://www.youtube.com/watch?v=FfmcGMqjrT4>
- Member of the UCF Board of Trustees – interacting with political and cultural leaders of the region and state. Met with Prime Minister Ehud Barak and Senator John McCain on their visit to UCF. Invited to meet FL Senate Candidates at the Florida Senatorial Debate at UCF. Invited to meet with President Abdul Kalam of India on his visit to UCF.
- Master of Ceremony (with Dr. Terri Fine) for Founders’ Day Ceremony 2006-present.
- Participated in Order of the Engineer Initiation Ceremony as Reader 2006-present.
- Met with Director of Florida Hospital Dr. Lars Houmann related to the UCF Medical School Development.
- Met with ORMC Doctors to investigate collaborative research ideas in Biomechanical Engineering.
- Other Media Appearances –
 - (a) FOX Channel 35 on Sinkhole Activity in Central Florida
 - (b) UCF Student TV Channel on Role of a BOT Member
 - (d) Channel 9 ABC on Coach O’Leary Contract as a BOT Member
 - (e) Channel 9 ABC on Sinkholes in January 2010
 - (f) Interviewed on Tampa ABC TV Channel for Sinkhole Story in Hillsborough County in February and March 2013.