

BRIEF BIOGRAPHICAL SKETCH

Krishna R. Reddy, Ph.D., P.E.
Professor of Civil & Environmental Engineering
Department of Civil and Materials Engineering
University of Illinois-Chicago

Dr. Krishna Reddy is Professor of Civil and Environmental Engineering at the University of Illinois, Chicago (UIC). He is also the Director of Geotechnical and Geoenvironmental Engineering Laboratory at this university. Dr. Reddy received his Ph.D. in Civil Engineering from the Illinois Institute of Technology, Chicago. He received gold medals for being first in his class of B.S. (Civil Engineering) in Osmania University and M.S. (Civil Engineering) in Indian Institute of Technology, Roorkee.

Dr. Reddy is a professional engineer (P.E.) in the State of Illinois, and he worked as civil engineer and project manager in consulting engineering companies for several years and involved in several major projects dealing with geotechnical site investigations, foundations, earth structures, landfills, contaminated sites, and groundwater flow and contaminant transport modeling.

Dr. Reddy teaches various geotechnical and geoenvironmental engineering courses at both undergraduate and graduate levels. Dr. Reddy has developed and taught several geoenvironmental engineering courses including *Environmental Geotechnology*, *Environmental Remediation Engineering*, and *Design of Landfills and Impoundments*. He has also developed and taught professional short courses.

Dr. Reddy's research and consulting expertise includes geotechnical site investigations, structural foundations, earth structures, polluted site remediation, landfills, and waste recycling. Dr. Reddy's research has been funded by the National Science Foundation, the Gas Research Institute, the Illinois Environmental Protection Agency, the Department of Commerce and Community Opportunities, and several private industries and consulting firms.

Dr. Reddy has published 90 refereed journal papers and 94 conference papers on various topics in geotechnical and geoenvironmental engineering. He is the author a comprehensive book on **"Geoenvironmental Engineering: Site Remediation, Waste Containment, and Emerging Waste Management Technologies"** published by John Wiley. He has also edited eight books and authored several book chapters.

Dr. Reddy is the North America Editor of the *Land Contamination & Reclamation* journal, and he serves on the editorial boards of *Journal of Soil and Sediment Contamination*, *Journal of Hazardous Materials*, and *International Journal of Earth Sciences and Engineering*.

Dr. Reddy is a member of ASCE, ASTM, NGWA and other professional organizations. He served as the secretary, vice-chair and chair of the Geotechnical Group of the ASCE Illinois Section and also served as the faculty advisor for the ASCE Student Chapter at UIC. He was the co-chair of ASCE's *GeoCongress2008: The Challenge of Sustainability in Geoenvironment*. Currently, he is the chair of the ASCE's Geoenvironmental Engineering Committee and Director on the Board of the ASCE Illinois Section.

Dr. Reddy delivered over 120 presentations, including several invited and keynote presentations, at the national and international workshops and conferences. He has received several awards and honors for excellence in teaching, research, and professional service, including the prestigious University of Illinois Scholar Award and the UIC Award for Excellence in Teaching.

KRISHNA R. REDDY

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EDUCATION:

- **Ph.D.**, Civil Engineering, Illinois Institute of Technology, Chicago, 1990
(**GPA:4.0/4.0**)
- **M.S.**, Civil Engineering, Indian Institute of Technology, Roorkee, India, 1985
(**University First, Gold Medal**)
- **B.S.**, Civil Engineering, Osmania University, Hyderabad, India, 1983
(**University First, Gold Medal**)

PROFESSIONAL APPOINTMENTS:

- **Professor**, Department of Civil and Materials Engineering, University of Illinois at Chicago, August 2006-Present.
- **Associate Professor**, Department of Civil and Materials Engineering, University of Illinois at Chicago, August 1999- July 2006.
- **Assistant Professor**, Department of Civil and Materials Engineering, University of Illinois at Chicago, August 1993- July 1999.
- **Project Manager/Project Engineer**, Patrick Engineering Inc., Glen Ellyn, Illinois, May 1990- August 1993.
- **Civil Engineer (Summer Intern)**, Harza Environmental Services, Inc., Chicago, May 1989-August 1989.
- **Research Assistant/Teaching Assistant**, Civil Engineering Department, Illinois Institute of Technology, Chicago, August 1985-May 1990.
- **Research Associate**, Department of Civil Engineering, Indian Institute of Technology, Roorkee, India, February 1985-August 1985.

PROFESSIONAL REGISTRATION:

- Registered Professional Engineer, State of Illinois (#062-049625)

AWARDS & HONORS:

- University of Illinois Scholar Award, 2007 (**Prestigious award given for excellence in teaching and scholarship at the entire University of Illinois system**)
- Award for Excellence in Teaching, University of Illinois at Chicago, 2007 (**Highest award given for teaching excellence at the university level**)
- Best Practice-Oriented Paper Award, Practice Periodical of Hazardous, Toxic, and Radioactive Waste Management, ASCE, 2006
- Outstanding Geotechnical Educator Award, Great Lakes Geotechnical & Geoenvironmental Conference, 2005-2006
- Faculty Scholar Award, Institute for Environmental Science & Policy, UIC, 2004-2005
- Indian Geotechnical Society Best Paper Award for the paper published in the Indian Geotechnical Journal, 2004
- Edmund Burke Teaching Award, UIC, 2004
- Harold A. Simon Award for Excellence in Teaching, College of Engineering, UIC, 2003
- UIC Flame Award for Teaching Excellence Nominee, 2002 & 2007
- Certificate of Appreciation, 6th International Symposium on Environmental Geotechnology and Global Sustainable Development, Chung-Ang University, Seoul, Korea, 2002
- Faculty Research Award, College of Engineering, UIC, 2001
- Certificate of Appreciation, American Society of Civil Engineers, Illinois Section, 1999-2006
- Citation of Excellence for the Highest Quality Paper published in the Journal of Environmental Management and Health, 1999
- Best Advisor Award, Professional Engineering Societies Council, UIC, 1998
- Teaching Recognition Award, Council for Excellence in Teaching and Learning, UIC, 1997
- Silver Circle Excellence in Teaching Award Nominee, UIC, 1995 & 1996
- Harold A. Simon Award for Excellence in Teaching Nominee, UIC, 1995
- Best Paper Award, Technology Development Conference, Dept. of Energy, 1995
- Certificate of Appreciation, UIC Early Outreach- Health/Science Enrichment Program, 1995
- Clinton E. Stryker Distinguished Service Award, Illinois Institute of Technology, 1989.
- Listed in Who's Who Among Students in American Universities & Colleges in recognition of outstanding merit and accomplishment as a student of IIT, 1988 & 1989
- Indian Society of Earthquake Technology Best Paper Award for the period 1985-1988

- Gold Medal for first position in M.S., Indian Institute of Technology, Roorkee, India, 1985
- Gold Medal for first position in B.S., Osmania University, Hyderabad, India, 1983
- Silver Medal for first position in college, Board of Intermediate Education, Hyderabad, India, 1978

UNIVERSITY SERVICE:

University Level:

- Committee Member, All-Campus Promotion and Tenure Committee, UIC (2008-Present)
- Faculty Mentor: mentored assistant professors on academic career at UIC (2008-Present)
- Committee Member, Council for Excellence in Teaching and Learning, UIC (2008-Present)
- Member, Various ad-hoc committees dealing with research, facilities, awards, etc., UIC (2000-Present)
- Senate Member, UIC (2005-2008)
- Presenter/Panel Member, Brown Bag Lunch Interdisciplinary Discussion on “Water: Recreation and Health”, Organized by the Office of Vice Chancellor for Research, October 30, 2007
- Reviewer, Campus Research Board (2000-Present)
- Reviewer, CETL Teaching Recognition Program (2000-Present)
- Steering Committee Member & Fellow, Institute for Environmental Science and Policy, UIC (2002-Present)
- Fellow (January 1994-Present) & Council Member (August 1997- Present), Honors College, UIC

College Level:

- Lab Space Committee Member, College of Engineering, Appointed by the Dean (2006-2007)
- Faculty Judge, Engineering Expo (1994, 1996, 1997, 2002, 2004)
- Member, Research Award Committee, 2001-2002
- Member, Power Electronics Research Center (2001-2003)
- Member, College ABET Committee (1998-1999)
- National Engineers Week Open-Lab Host (1996)

Department Level:

- Member, Department Advisory Committee (1995-96; 2004-06, 2006-Present)-**Elected**
- Member, Department Graduate Committee (1994-Present)
- Member, Civil Engineering Graduate Committee (1996-Present)
- Member, Civil Engineering Undergraduate Committee (1995-Present)

- Organizer, Environmental Research Seminar Series, Spring 2006
- Member, Structural Mechanics Faculty Search Committee, Spring 2006
- Faculty Advisor, ASCE Student Chapter (1998-2006)
 - Participated in 2003 ASCE Zone III Workshop for Student Chapter Leaders (WSCL), Dallas, Texas, February, 2003
 - Participated in 2002 ASCE Practitioner & Faculty Advisor Training Workshop (PFATW), Reston, Virginia, September, 2002
- Member, Lab Committee (1997-Present)
- Member, Computer Committee (2003-Present)
- Member, CME Distinguished Seminars Committee (2004-2005)
- Member, Langelier Scholarship Committee (1997-2006)
- Director, Geotechnical and Geoenvironmental Engineering Laboratory (1993-Present)
- Chair, Environmental Engineering Faculty Search Committee (1999-2000)
- Director of Undergraduate Studies (1998-1999)
- Member, Faculty Search Committee (1995-1996)
- Department Faculty Secretary (1994-1996)
- Steering Committee Member, UIC Environmental Engineering and Health Center (1994-1996)
- Department Web Master (1996-1998)
- Chairperson, Department Seminars (1996-1999)

PROFESSIONAL AFFILIATION:

- American Society of Civil Engineers/Geo-Institute (Member, 242310)
- American Society for Testing and Materials
- International Society of Soil Mechanics and Geotechnical Engineering
- Association of Ground Water Scientists and Engineers/National Ground Water Association
- American Chemical Society
- Illinois Groundwater Association
- Association of Environmental Health and Science
- Illinois Association of Environmental Professionals
- Transportation Research Board
- Clays and Clay Mineralogy
- International Society of Environmental Geotechnology
- Indian Geotechnical Society
- Association of Environmental Engineering and Science Professors (AEESP)
- United States Universities Council on Geotechnical Education and Research (USUCGER)

PROFESSIONAL SERVICE:**Offices Held:**

- Director, Board of Directors of Illinois Section of the American Society of Civil Engineers (2007-Present)
 - Chair, Student Chapter Committee, 2008-Present
 - Member, Student Outreach Committee, 2008-Present
 - Member, Membership Committee, 2008-Present
 - Member, Awards Committee, 2008-Present
 - Member, Infrastructure Report Committee, 2008-Present
 - Participated in the 2008 Workshop for Section and Branch Leaders (WSBL), January 25-26, 2008, Austin, Texas
- Secretary/Treasurer (1998-Present), President (1996), Vice President (1995) and Member (1997), Great Lakes Geotechnical and Geoenvironmental Conference Steering Committee
- Chairman (1999-2000), Vice Chairman (1998-99), Secretary/Treasurer (1997-98), Geotechnical Group, Illinois Section of the American Society of Civil Engineers
- Honorary Advisor, International Society of Environmental Geotechnology, 2004-Present

Committee Memberships:

- Chair and Member, Committee on Geoenvironmental Engineering, American Society of Civil Engineers/Geo-Institute (1998-Present; Chair: 2008-Present))
- Member, Committee on Physicochemical and Biological Processes in Soils, Transportation Research Board (1994-Present)
- Member of the following ASTM technical committees: D18.06-Physical-Chemical Interactions of Soil and Rock; D18.14-Industrial Byproducts and Recycled Materials; D18.21.07-Ground Water and Vadose Zone Remediation Technologies
- Member, Research Committee, The United States Universities Council on Geotechnical Education and Research (USUCGER) (2004-Present)
- Member, Committee on Ground Water, American Society of Civil Engineers/Geo-Institute (1999-2001)

Editorships/Editorial Boards:

- Editor, *Land Contamination & Reclamation Journal* (2005-Present)
- Guest Editor, Special Issue on Site Remediation Technologies, *Journal of Hazardous Materials* (2007)
- Editorial Board Member, *International Journal of Earth Sciences and Engineering* (2009-Present)
- Editorial Board Member, *Journal of Hazardous Materials* (2006-Present)
- Editorial Board Member, *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE (2004-2008)
- Editorial Board Member, *Geotechnical Testing Journal*, ASTM International (2002-2007)
- Editorial Board Member, *Journal of Soil and Sediment Contamination* (2002-Present)
- Board Member, Special Issue on Electrochemical Decontamination of Soil and Water, *Journal of Hazardous Materials* (1997)

Proposal/Paper/Book Review:

- Proposal review for the following organizations:
 - National Science Foundation, Washington, D.C.
 - National Environment Research Council, UK
 - National Research Council, Canada
 - International Science and Technology Center/U.S. Civilian Research and Development Foundation, Washington, D.C.
 - International Foundation for Science, Stockholm, Sweden
 - University of Wisconsin Water Resources Institute (WRI), Madison, Wisconsin
 - Research Grants Council of Hong Kong, Hong Kong

- Water Resources Research Institute, University of North Carolina
- Mountain-Plains Consortium (MPC), North Dakota State University, Fargo, ND
- Journal paper review (1993-Present) for the following journals (reviewed about 2 papers per month):
 - *Journal of Geotechnical and Geoenvironmental Engineering, ASCE*
 - *Journal of Environmental Engineering, ASCE*
 - *Geotechnical Testing Journal, ASTM*
 - *Journal of Hazardous Materials*
 - *Journal of Soil and Sediment Contamination*
 - *Advances in Environmental Research*
 - *Geosynthetics International*
 - *Journal of Air and Waste Management Association*
 - *Environmental & Engineering Geoscience*
 - *Environmental Engineering Science*
 - *Waste Management*
 - *Geotechnical and Geological Engineering*
 - *Journal of Contaminant Hydrology*
 - *Journal of Environmental Technology*
 - *Progress in Energy and Combustion Science: An International Review Journal*
 - *Environmental Monitoring & Assessment (EMA): An International Journal*
 - *Water Research*
 - *Land Contamination and Reclamation*
 - *Environmental Science & Technology*
 - *Indian Geotechnical Journal*
 - *The Total Science of Environment*
 - *Industrial and Engineering Chemistry Research*
 - *Chemosphere*
 - *The Practice Periodical of Hazardous, Toxic, and Radioactive Waste Management, ASCE*
 - *Separation Science and Technology*
 - *Journal of Environmental Management*
 - *Electrochemistry Communications*
 - *Journal of Materials in Civil Engineering, ASCE*
 - *Canadian Biosystems Engineering Journal*
 - *Environmental Progress, AIChE*
 - *Kuwait Journal of Science and Engineering*
 - *International Journal of Environment and Waste Management*
 - *Electrochimica Acta*
 - *Water, Air, & Soil Pollution*
 - *The Journal of Engineering Research, Oman*
 - *Plant and Soil Journal*
 - *International Journal of Soil, Sediment and Water: Documenting the Cutting Edge of Environmental Stewardship*
 - *Journal of ASTM International*
 - *Waste Management and Research*
- Reviewed numerous papers for the *Transportation Research Board Sessions*, the *ASCE/Geo-Institute Conferences*, *ACS Symposium Series*, *Geosynthetics Conferences*, and other national and international conferences
- Reviewed book proposals for McGraw-Hill Book Co.

Conference/Symposia/Workshop Chair/Organizer:

- Organizer/Steering Committee Member, ASCE's Geotechnical Lecture Series on Current Topics in Foundation Engineering, UIC (April 2008)
- Conference Co-Chair, GeoCongress2008: The Challenge of Sustainability in the Geoenvironment, ASCE/GI Annual Conference, New Orleans (March 9-12, 2008); Successful conference with more than 900 participants and comprehensive technical program on a wide range of emerging challenges for sustainable geoenvironment.
- Organizer, Combined Chicago Geotechnical Lecture Series and 14th Great Lakes Geotechnical and Geoenvironmental Conference on Geotechnical Aspects of Earth Retention and Shoreline Protection, UIC (May 2006)
- Organizer, NSF Workshop on Emerging Geoenvironmental Technologies for Pollution Control and Remediation, UIC (September 2003)
- Organizer/Steering Committee Member/Panel Member, Geotechnical Lecture Series on Performance Monitoring of Geotechnical Structures, UIC (May 2003)
- Organizer, Symposium on Emerging Technologies in Hazardous Waste Management, 224th ACS National Meeting, Boston, MA (August 2002)
- Symposium Chair, UIC Environmental Science and Technology (February 2001)
- Organizer, Chicago Geotechnical Lecture Series, UIC (February-March 1998; March-April 2000)
- Conference Chair, Great Lakes Geotechnical/Geoenvironmental Conference on In-Situ Remediation of Contaminated Sites (May 1996)

Conference Advisory/Scientific Committee Member:

- International Advisory Committee Member, International Conference on Developments on Expansive Soils (INDEX-09), Hosur, India (August 27-29, 2009).
- Scientific Committee Member, 8th Symposium on Electrokinetic Remediation, Lisbon, Portugal, (July 27-28, 2009)
- International Scientific Committee Member, 4th ASTM International Symposium on Contaminated Sediments- Sustainable Management and Remediation, Dublin, Ireland (June 30-July 3, 2009)
- International Advisory Committee Member, 12th International Association for Computer Methods and Advances in Geomechanics (IACMAG) Conference, Goa, India (October 2008)
- International Scientific Committee Member, The Third International Meeting on Environmental Biotechnology and Engineering (3IMEBE), Palma de Mallorca, Spain (September 21-25, 2008)
- Scientific Committee Member, 7th Symposium on Electrokinetic Remediation, Seoul, Korea (August 19-22, 2008)
- International Scientific Committee Member, 9th International Symposium on Environmental Geotechnology and Global Sustainable Development, Hong Kong (June 1-4, 2008)

- International Advisory Committee Member, International Conference on Waste Engineering and Management, Hong Kong (May 28-30, 2008).
- International Scientific Committee Member, International Symposium on Geoenvironmental Engineering for Sustainable Development, Xuzhou, China (October 22-24, 2007)
- International Advisory Committee Member, First Sri Lanka Geotechnical Society International Conference on soil and Rock Engineering, Colombo, Sri Lanka (August 6-11, 2007)
- International Advisory Committee Member, International Conference on Cleaner Technologies and Environmental Management (ICCTEM2007), Pondicherry, India (January 2007)
- International Review Panel Member, International Conference on New Developments in Geoenvironmental and Geotechnical Engineering (IETeC2006), Incheon, Korea (November 2006)
- Advisory Committee Member, INDEX 2006-International Conference on Infrastructure Development on Expansive Soils, Erode, India (February 2006)
- International Scientific Committee Member, International Conference on Environmental Management (ICEM2005), Hyderabad, India (October 2005)
- Scientific Committee Member, International Conference on Energy, Environment and Disasters (INCEED 2005), Charlotte, NC (July 2005)
- Advisory Committee Member, International Conference on Geoenvironmental Engineering and Geosynthetics, Indian Institute of Technology, Bombay, India (December 2004)
- Advisory Committee Member, 7th International Symposium on Environmental Geotechnology and Global Sustainable Development, Helsinki, Finland (June 2004)

Technical Session Chair/Organizer:

- Session Chair, Techniques of Contaminated Site Remediation, The 9th International Symposium on Environmental Geotechnology and Global Sustainable Development, Hong Kong (June 2, 2008)
- Session Chair, Characterization and Management of Wastes, International Conference on Waste Engineering and Management, Hong Kong (May 29, 2008)
- Session Chair, Panel Discussion on Current Topics in Foundation Engineering, ASCE's Chicago Geotechnical Lecture Series, Chicago (April 10, 2008)
- Session Chair, Opening and Closing Plenary Sessions of GeoCongress2008: The Challenge of Sustainability in the Geoenvironment (March 9-12, 2008)
- Session Chair, International Symposium on Geo-Environmental Engineering for Sustainable Development, Xuzhou, China (October 23, 2007)
- Session Chair, Geotechnical Construction, First Sri Lanka Geotechnical Society International Conference on Soil and Rock Engineering, Colombo, Sri Lanka (August 9, 2007)
- Opening Plenary Speaker and Chair for Technical Session on Electrokinetic Barriers, 6th

Symposium on Electrokinetic Remediation (EREM 2007), Vigo, Spain (June 13, 2007)

- Session Organizer/Chair, Symposium on Contaminated Sediment Remediation: Challenges and Opportunities, ACS Annual Meeting, Chicago (March 2007)
- Session Organizer/Chair, Symposium on Nanotechnology for Contaminated Site Remediation, ACS Annual Meeting, Chicago (March 2007)
- Session Chair, Advances in Waste Utilization and Disposal, Geo-Denver Conference, Denver, Colorado (February 2007)
- Session Chair, Panel Discussion on Geotechnical Aspects of Earth Retention and Shoreline Protection, Combined Chicago Geotechnical Lecture Series and the 14th Annual Great Lakes Geotechnical and Geoenvironmental Conference, UIC, Chicago (May 12, 2006)
- Session Chair, Geotechnical Issues with Infrastructure Development on Expansive Soils, INDEX 2006-International Conference on Infrastructure Development on Expansive Soils, Erode, India (February 2006)
- Session Chair/Organizer, Bioreactor Landfills Update, Geo-Frontiers2005 Conference, Austin, Texas (January 2005)
- Session Chair, Brownfields Redevelopment-Case Studies, ASCE Annual Conference, Nashville, TN, (October 2004)
- Session Co-Chair, Soil-Waste Interaction Behavior, Indian Geotechnical Conference, Allahabad, India (December 2002)
- Session Co-Chair, Site Remediation Techniques and Management, The 6th International Symposium on Environmental Geotechnology and Global Development, Seoul, Korea (July 2002)
- Session Chair, Recent Experiences and Initiatives in Brownfield Redevelopment, Remaking Chicago Conference, Chicago (November 2000)
- Session Chair, Emerging Technologies for the Remediation of Contaminated Soils and Groundwater, American Chemical Society Conference, San Francisco, California (March 2000)
- Session Chair, Assessment, Characterization and Remediation of Contaminated Transportation Facilities, Transportation Research Board Meeting (January 1998)
- Session Chair, Groundwater Remediation at Petroleum Spill Sites, American Power Conference (April 1997)

External Promotion and Tenure Reviews:

- Indian Institute of Science: promotion to Associate Professor (2003); promotion to Full Professor (2007)
- University of Florida, Gainesville: tenure and promotion to Associate Professor (2004); promotion to Full Professor (2006)
- University of North Carolina, Charlotte: tenure and promotion to Associate Professor (2006)

- Hong Kong University of Science and Technology: promotion to Full Professor (2006)
- State University of New York (SUNY), Buffalo, New York: promotion to Full Professor (2007)
- University of Calgary, Canada: promotion to Full Professor (2007)
- Concordia University, Canada: promotion to Full Professor (2008)
- University of Vermont, tenure and promotion to Associate Professor (2008)
- University of British Columbia, Canada: promotion to Full Professor (2008)

External Ph.D. Examiner:

- University of Calgary, Canada, 2004
- University of British Columbia, Canada, 2005
- Pondicherry Engineering College, Pondicherry, India, 2005
- University of Western Ontario, London, Canada, 2006
- Motilal Nehru National Institute of Technology, Allahabad, India, 2006, 2008
- University of Allahabad, Allahabad, India, 2006
- Indian Institute of Technology-Roorkee, 2006, 2008
- Indian Institute of Technology-Delhi, India, 2007
- Visvesvaraya Technological University, Belgaum, India, 2007
- Manipal University, Manipal, Karnataka, India, 2008
- Anna University, Chennai, India, 2008.

Other Significant Activities:

- Foreign Principal Investigator, Global Research Lab (GRL) Program Preproposal with multi-Korean and foreign universities and industries led by the Korean Advanced Institute for Science and Technology on the Development of Novel Nano/Bio- Remediation Technologies for Ecosystem Restoration, March 2006 and September 2007.
- Invited Participant, European Research Project on Integrated Risk Assessment and Risk-Based Management for River Basin Systems, 2004 and 2005
- NSF-funded collaborative research on electrokinetic remediation with Korean Advanced Institute of Science & Technology (KAIST) and Korea Institute of Construction Technology (KICT), 2004-2006.
- Advisory Committee Member, Center for Geoenvironmental Engineering, J.N. Technological University, Hyderabad, India, 2000- Present

RESEARCH AND TEACHING ACCOMPLISHMENTS:

After specializing in structural engineering (concrete and steel structures) in B.S.(Civil), foundation engineering (pile foundation and retaining structures) in M.S.(Civil), and geotechnical earthquake engineering and geomechanics (liquefaction and constitutive modeling) in Ph.D.(Civil), I joined a civil and environmental engineering consulting company in Chicago to gain real world experiences. After working on standard geotechnical engineering projects for a year, I interjected myself into challenging geoenvironmental projects which dealt with environmental site characterizations, groundwater flow and contaminant transport modeling, landfills, and contaminated sites. I quickly realized that the geoenvironmental projects are challenging and exciting with immediate practical implications, and they provided me immense professional satisfaction.

Since joining UIC in 1993, I have developed and taught several geoenvironmental engineering courses at undergraduate and graduate levels including *Environmental Geotechnology*, *Design of Landfills and Impoundments*, *Environmental Remediation Engineering*, and *Groundwater Flow and Contaminant Transport Modeling*. In addition to teaching, I have focused my research within the broad area of geoenvironmental engineering, specifically addressing: (1) remediation of contaminated soils, sediments, and groundwater; (2) waste containment systems; and (3) beneficial use of waste materials. I have combined laboratory experiments, mathematical modeling, and field investigations to provide comprehensive green and sustainable engineering solutions that are based on sound fundamental principles and are practical in their implementation. My major research accomplishments to date in these specific areas of research are summarized below:

Remediation of contaminated soils, sediments, and groundwater

- Electroremediation of contaminated soils: quantification of geochemical processes; sequentially enhanced electrokinetic removal of heavy metals; removal of hydrophobic organic compounds by pulsed electrokinetics; integrated electroremediation of mixed contaminants; mathematical modeling incorporating geochemical effects
- In-situ air sparging for the remediation of volatile organic contaminants in groundwater: quantification of mass transport/transfer processes; multi-phase and multi-species modeling for system optimization
- Chemical oxidation/reduction: native and chelated native iron in Fenton-like oxidation of organic contaminants; coupled chemical oxidation and electrokinetic remediation; remediation of soils and groundwater using nanoscale iron particles
- Contaminated sediments: reactive capping; electroosmotic dewatering; electroremediation

Waste containment (landfills, impoundments, and in-situ barriers)

- Interface shear behavior of composite liner systems; puncture resistance and protective cover systems for geomembrane liners; seismic stability of liner and cover systems; compatibility of slurry materials with free phase DNAPLs; field performance and coupled flow-mechanical modeling of bioreactor landfills

Beneficial reuse of waste materials in civil and environmental applications

- Field performance of shredded scrap tire drainage layer in landfill final covers; geotechnical characterization and beneficial utilization of glass cullet and biosolids; reuse of contaminated sediments and soils

RESEARCH GRANTS AND CONTRACTS:

1. Principal Investigator (Co-PI: None), "Pollution Prevention Internship Program," Illinois Environmental Protection Agency, 5/94-8/94, \$4,972.
2. Principal Investigator (Co-PI: None), "Evaluation of Protective Cover for Landfill Liners," RUST Environment & Infrastructure, 7/94-6/95, \$12,499.
3. Principal Investigator (Co-PI: None), "Development of a New Test Apparatus to Determine Permeability of Glacial Soils and Rocks," K&S Testing and Engineering Inc., 2/95-1/97, \$5,015.
4. Principal Investigator (Co-PI: None), "Field and Laboratory Evaluation of Protective Cover Soils for Minimizing Mechanical Damage to Landfill Liners," Waste Management Inc., 9/95-8/97, \$52,114 (\$30,000 in-kind support from the sponsor).
5. Principal Investigator (Co-PI: None), "Foam Enhanced Electrokinetic Remediation of Contaminated Soils," Institute of Gas Technology, 3/96-8/96, \$3,062.
6. Principal Investigator (Co-PI: M.Issa), "Protection of the Infrastructure and Environment During Natural Disasters: The Unique Role of Civil Engineers," UIC Council for Excellence in Teaching & Learning, 4/96-2/97, \$7,400.
7. Principal Investigator (Co-PI: None), "Development of Sequential Conditioning System for In-Situ Electrokinetic Remediation of Chromium-Contaminated Soils," UIC Campus Research Board, 6/96-8/97, \$12,000.
8. Principal Investigator (Co-PI: M. Cailas), "Comparative Assessment of Potential Technologies for the Remediation of Brownfields," UIC Great Cities Institute, 12/96-6/97, \$7,500.
9. Principal Investigator (Co-PI: A. Li), "In-Situ Electrokinetic Remediation of Contaminated Soils: Bench and Pilot Scale Testing," Gas Research Institute/ Institute of Gas Technology, 4/98-3/00, \$118,000.
10. Co-Principal Investigator (PI.: M.Issa), "Durability of High Performance Concrete Under Various Environmental Conditions," Applied Concrete Technology, Inc., 4/98-3/99, \$40,000.
11. Principal Investigator (Co-PI: None), "System Effects on Remediation of VOC-Contaminated Saturated Soils and Groundwater Using In-Situ Air Sparging," National Science Foundation, 9/98-8/00, \$120,050.
12. Principal Investigator (Co-PI: None), Searle Environmental Safety and Health Scholarship for Graduate Research in Geoenvironmental Engineering, Searle Foundation, 9/98-8/99, \$10,000.
13. Co-Principal Investigator (PI: T. Stark and Co-PI: D. Daniel), "PVC Geomembrane Institute-Technical Program," \$350,000 (1/98-12/05; \$50K/yr Continuing grant).
14. Co-Principal Investigator (PI: A. Chudnovsky), "Small Scale Testing of Hydraulic Fracture Confinement in Stratified Porous Media," Shell Oil Company, 4/99-3/00, \$156,876.
15. Principal Investigator (Co-PI: None), "Research Experience for Undergraduates," National Science Foundation, 5/99-8/00, \$8,000.
16. Principal Investigator (Co-PI: None), Searle Environmental Safety and Health Scholarship for Graduate Research in Geoenvironmental Engineering, Searle Foundation, 9/99-8/00, \$10,000.

17. Principal Investigator (Co-PIs: T. Stark and D. Daniel), "Beneficial Use of Scrap Tires in Waste Containment Systems," Illinois Department of Commerce & Community Affairs, Used Tire Recovery Program, 1/00-1/03, \$169,173.
18. Co-Principal Investigator (PI: A. Chudnovsky), "Small Scale Testing of Hydraulic Fracture Confinement in Stratified Porous Media-Continuation," Shell Oil Company, 4/00-3/01, \$160,020.
19. Principal Investigator (Co-PI: None), "Development of Integrated Electrokinetic Remediation Technology for Cleanup of Contaminated Sites," STAT Analysis Corporation, 8/00-8/02, \$84,250.
20. Principal Investigator (Co-PI: None), "Electrokinetic Remediation of Low Permeability and Heterogeneous Soils Contaminated by Hydrophobic Organic Compounds," National Science Foundation, 9/01-9/05, \$233,800.
21. Principal Investigator (Co-PI: None), "Compatibility of Barrier Wall Materials with Dense Nonaqueous Phase Liquids (DNAPLs)," Hi-Tek Environmental, Inc., 8/02-9/05, \$20,000.
22. Principal Investigator (Co-PI: None), "Monitoring Database of Waste Containment Systems," Great Lakes Soil and Environmental Consultants, Inc., 12/02-11/03, \$10,382.
23. Principal Investigator (Co-PI: None), "Workshop on Emerging Geoenvironmental Engineering Technologies for Pollution Control and Remediation," National Science Foundation, 7/03-6/05, \$28,018.
24. Principal Investigator (Co-PI: None), "Creation of Physical Visualization Experiments to Understand Hazardous Waste Site Remediation Processes," UIC Council for Excellence in Teaching and Learning, 3/04-4/05, \$9,500.
25. Principal Investigator (Co-PIs: N. Sturchio, K. Nagy, A. Khodadoust, K. Rockne, A. Li, A. Mansoori, and U. Diwekar), "Geochemical Characterization and Remediation of Contaminant Mixtures in Subsurface," Faculty Research Cluster Award, Institute of Environmental Science & Policy, UIC, 5/04-4/05, \$15,000.
26. Principal Investigator (Co-PI: J. Bogner), "Dynamic Water Balance and Geotechnical Stability of Bioreactor Landfills: Preliminary Laboratory Study," Centre de Recherche pour l'Environnement, l'Energie, et le Dechet (CREED), Limay, France, 9/04-8/05, \$20,286.
27. Principal Investigator (Co-PI: None), "U.S.-Korea Cooperative Research: Electrokinetic-Enhanced Bioremediation of Metal-Contaminated Soils," National Science Foundation, 9/04-08/06, \$11,000.
28. Co-Principal Investigator (PI: T. Stark), "Puncture Resistance of PVC Geomembranes," PVC Geomembrane Institute, 6/05-6/06, \$20,000.
29. Principal Investigator (Co-PI: J. Bogner and P. Carpenter), "Dynamic Water Balance and Geotechnical Stability of Bioreactor Landfills: Field Monitoring and Mathematical Modeling," Centre de Recherche pour l'Environnement, l'Energie, et le Dechet (CREED), Limay, France and ONYX Waste Services Inc., 7/05-6/08, \$135,062 (direct) and \$173,650 (in-kind).
30. Principal Investigator (Co-PI: None), "Integrated Electrochemical Oxidation: Feasibility Studies for Different MGP Sites," Hi-Tech Environmental Inc., Chicago, 11/05-10/08, \$30,225.
31. Principal Investigator (Co-PI: J. Bogner), "GOALI: Field Monitoring and Performance Evaluation of Four Bioreactor Landfills," National Science Foundation, 5/06-4/08, \$129,932.

32. Principal Investigator (Co-PI: A. Khodadoust and C. Darnault), "Transport Behavior of Surface-modified Reactive Nanoscale Iron Particles," Toda America, Inc., 4/06-12/06, \$7,200.
33. Principal Investigator (Co-PI: None), "Compressibility and Strength Characteristics of Foam Materials Under Landfill Loading Conditions," Argonne National Laboratory, 6/06-8/06, \$7,000
34. Principal Investigator (Co-PI: None), "Geophysical Monitoring of Leachate Recirculation and Its Effects on Waste at Orchard Hills Landfill," Environmental Research and Education Foundation, 10/06-10/07, \$26,875.
35. Senior Investigator (PI: M. Ashley; Co-PIs: S. Forman, K. Havens, and K. Rockne), "IGERT: Ecology, Management and Restoration of Integrated Human/Natural Landscapes," National Science Foundation, 6/06-6/11, \$2,800,000.
36. Principal Investigator (Co-PIs: N. Sturchio, K. Nagy, A. Khodadoust, A. Li, and A. Mansoori), "Multi-disciplinary Research in Environmental Nanotechnology," Faculty Research Cluster Award, Institute of Environmental Science & Policy, UIC, 5/07-4/08, \$10,000.
37. Principal Investigator (Co-PI: A. Khodadoust), "Remediation of Contaminated Subsurface Using Nanoscale Iron Particles," National Science Foundation, 8/07-7/09, \$169,830.
38. Principal Investigator (w/ H. BassiriRad), "Interdisciplinary Perspectives on Global Environmental Changes," UIC Graduate College, 6/08-8/08, \$20,000.

RESEARCH SUPERVISION:

Post-Doctoral Fellows/Visiting Professors:

1. Richard E. Saichek (3/02-7/02): assisted on electrokinetic remediation project
2. Sham Tilak (2/03-5/03): assisted on environmental health risk assessment project
3. Saurabh Sharma (2/03-1/04): assisted on different soil and groundwater remediation projects
4. Solenne Grellier (8/05-1/07): assisted on bioreactor landfill project
5. Claudio Cameselle (9/07-8/08): assisted on environmental nanotechnology and electrokinetic remediation projects
6. Yeliz Yükselen-Aksoy (3/07-Present): assisted on integrated electrochemical remediation project

Ph.D. Dissertations:

1. Adams, Jeffrey, "System Effects on the Remediation of Contaminated Saturated Soils and Groundwater Using Air Sparging," May 1999. (Currently with ENGEO Consultants, San Ramon, California)
2. Chinthamreddy, Supraja, "Geochemical Characterization and Enhanced Mobilization of Heavy Metals During Electrokinetic Remediation of Soils," December 1999. (Currently with Great Lakes Soil & Environmental Consultants, Inc., Bolingbrook, Illinois)
3. Saichek, Richard, "Electrokinetically Enhanced In-Situ Flushing for HOC-Contaminated Soils," December 2001. (Currently with U.S. Army Corps of Engineers, Chicago)
4. Tekola, Luelseged, "Remediation of Subsurface NAPL Contamination by In-Situ Air Sparging," December 2002. (Currently with U.S. Army Corps of Engineers, Chicago)
5. Al-Hamdan, Ashraf, "Speciation, Distribution and Mobility of Heavy Metals in Soils During Electrokinetic Remediation," December 2002. (Currently with University of Alabama)
6. Richards, Kevin, "Piping Potential of Unfiltered Soils in Levees and Dams," December 2008. (Currently with Federal Energy Regulatory Commission)
7. Gangathulasi, Janardhanan, "Effects of Leachate Recirculation on Geotechnical Properties of Municipal Solid Waste in Landfills," December 2008.
8. Darko-Kagya, Kenneth, "Transport and Reactivity of Modified Nanoscale Iron Particles during Contaminated Subsurface Remediation," In Progress.
9. Kulkarni, Hanumanth, "Performance Assessment of Bioreactor Landfills: Field Monitoring and Mathematical Modeling," In Progress.

M.S. Theses:

1. Chad, Oliver, "Seismic Performance Evaluation of Solid Waste Landfills in Illinois," March 1995.

- (Currently with Federal Aviation Authority)
2. Kosgi, Sinduja, "Deformation Characteristics of Landfill Composite Liners Under Incremental Refuse Loading Conditions," March 1995. (Currently with Motorola)
 3. Shirani, Akhgar, "Electrokinetic Remediation of Metal-Contaminated Glacial Till," March 1995. (Currently with Illinois Department of Transportation)
 4. Parupudi, Usha, "Geochemical Processes Affecting Removal of Chromium from Fine-Grained Soils by Electrokinetics," March 1996.
 5. Semer, Robin, "Air Sparging: Contaminant Removal Mechanisms, Parameterization Comparisons and Enhancement," June 1996. (Currently with MWH Engineering, Inc.)
 6. Saichek, Richard, "Performance of Protective Cover Systems for Landfill Geomembrane Liners," December 1997. (Currently with U.S. Army Corps of Engineers)
 7. Chueng, Kent, "Cosolvent Enhanced Electrokinetic Remediation of Soils," May 1998 (Coadvised with An Li).
 8. Chaparro, Carlos, "Electrokinetic Remediation of Mercury Contaminated Soils," May 1999. (Currently with URS Corporation)
 9. Danda, Swapna, "Enhanced Electrokinetic Remediation of Multiple Heavy Metals in Spiked and Field Soils," August 2001. (Currently with Ground Engineering, Inc.)
 10. Marella, Aravind, "Use of Shredded Scrap Tires as Drainage Material in Landfill Covers," May 2002. (Currently with LFR Consultants, Inc.)
 11. Roach, Nicole, "Mineral Structure and Particle Morphology of Kaolin Subjected to Electrokinetic Remediation," May 2002. (Currently with U.S. Army Corps of Engineers)
 12. Chanduri, Kalyan, "Innovative Electrochemical Oxidation Technology for the Remediation of Organic Contaminants in Soils," May 2003. (Currently with Great Lakes Soil & Environmental Consultants, Inc.)
 13. Ala, Prasanth, "Electrokinetic Remediation of Field Contaminated Soils and Sediments," May 2004.
 14. Maturi, Kranti, "Enhanced Electrokinetic Remediation of Soils Contaminated with Co-existing PAHs and Heavy Metals," May 2004. (Currently with URS Corporation)
 15. Karri, Madhusudhana, "Integrated Electrochemical Remediation of Mixed Contaminants in Soils," May 2005. (Currently with Terracon Consultants, Inc.)
 16. Parakalla, Naveen, "Effect of Degradation on Geotechnical Properties of Municipal Solid Waste," May 2008. (Currently with GSG Consultants, Inc.)
 17. Farsalas, Philip, "Coupled Fluid Flow-Mechanical Modeling of Bioreactor Landfills," In Progress.

Thesis/Dissertation Co-advising/Committees:

M.S. Theses:

1. S.M. Richards, *Stream rating curves from dynamic wave routing to evaluate non-kinematic effects in floods*, 1998
2. W.K. Kmeid, *Effect of maximum aggregate size in concrete fracture*, 1998
3. M. Bendok, *Evaluation of Washington hydraulic fracture test (WHFT) for D-cracking aggregate*, 1999
4. A. Rodriquez, *Wastewater treatment at near zero dissolved oxygen*, 1999
5. C.L.R. Do Valle, M.S., 2000
6. T.A. Patton, *Composite behavior of full depth precast concrete bridge decks*, 2000
7. J.S. Salas, *Shear connectors for composite behavior of precast girders with full-depth precast slabs*, 2002
8. J. Jayaraj, *Reductive dechlorination of perchloroethene by a green solvent in bioreactors*, 2002
9. O. Narla, *Remediation of soils contaminated with 2,4-dinitrotoluene*, 2003
10. D.R. Buckley, *Soot and organic carbon flux to Great Lakes sediment : links to atmospheric transport of toxic pollutants*, 2003
11. M. Mittal, *Transport of anaerobic electron acceptors in bioremediated sediments and detection of PAH metabolites*, 2003
12. M.J. Saccomonto, *Correlation of high performance concrete strength between controlled and cored cylinders in compression*, 2003
13. S. Chandrasekaran, *Determination of the chemical availability of hydrophobic organic contaminants in soils*, 2003
14. L.C. Drumm, *Indiana harbor sediment : low density separation for treatment of hydrophobic contaminants*, 2004
15. N.K. Narayana Babu, *Desorption and availability of PCBs in contaminated sediments using XAD-2 sorbent*, 2005
16. Saikrishnan Ramamurthy, *Enhanced anaerobic biodegradation of PCBs in contaminated sediments using Iron*, 2007

Ph.D. Dissertations:

1. A.D. Jazdanian, *Adsorption of nonionic surfactant and hydrophobic organic compounds on clay minerals*, Department of Earth and Environmental Sciences, 1998
2. C.J. Engberts, *Oceanic heat flow and thermal conductivity of sediments with lithology and depth*, Department of Earth & Environmental Sciences, 1998
3. G. Al-Chaar, *Non-ductile behavior of reinforced concrete frames with masonry infill panels subjected to in-plane loading*, 1998

4. T-Y Wu, *Characteristics and treatment of mercury in the dental waste water stream*, EOHS, School of Public Health, 1999
5. M. S. Islam, *Specimen and aggregate size effect on the fracture behavior of concrete*, 2000
6. Z. Ma, *Experimental studies of rock fracture behavior related to hydraulic fracture*, 2000
7. J. J. Zeeberg, *Glacial environments, relative sea-level history, and climatology of Novaya Zemlya, Russian Arctic*, Department of Earth and Environmental Sciences, 2000
8. Erik McShane, Ph.D., Department of Electrical & Computer Engineering, 2001
9. A.M. Khalil, *Strength and durability assessment of high performance concrete*, 2002
10. H.I. Shabila, *Strength and durability assessment of flexure and axial RC members strengthened with carbon fiber polymer*, 2005
11. R.S. Srirangam, *Enhanced anaerobic bio-degradation of PCBs in contaminated sediments using hydrogen*, 2007
12. P. Naithani, *Leaching characteristics of Arsenic from alkaline aged coal flyash*, 2007
13. M. Alhassan, *Performance-based aspects and structural behavior of high performance fibrous bonded concrete overlays*, 2007
14. Georgette Hlepas, *Stabilized finite element methods for porous media flows*, 2008.
15. R.Z. Alrousan, *Experimental and theoretical studies of reinforced concrete beams and columns strengthened with carbon fiber reinforced polymers (CFRP)*, 2008.
16. Hatice Sengul, *Life cycle analysis of quantum dot semiconductor materials*, 2009.
17. H. Jasarevic, *Observation, characterization and modeling of fracture initiation phenomena*, 2009
18. Ke Yin, *Modeling active capping potential of contaminated sediment*, 2008 (Prelim.)
19. A.S. Varadhan, *Enhanced anaerobic biodegradation of PCBs in contaminated sediments*, 2008 (Prelim)
20. Burcu Uysur, *Fate and transport of quantum dot nanomaterials and uranium in the subsurface environment*, 2008 (Prelim.)
21. P.Z. Viana, Ph.D., 2007 (Prelim)
22. K. Granberg, Ph.D., 2008 (Qual.)

Undergraduate Research Assistants:

1. Robin Semer (1993-1994): assisted on NSF-funded research on in-situ air sparging
2. Bill Saari (1994-1995): assisted on research project dealing with protective covers for liners

3. Michelle Honey (1995-1996): assisted on NSF-funded research on electrokinetic remediation
4. Christina Richardson (1996-1997): assisted on brownfields research project
5. Adam Urbanek (1999-2003): assisted on sediment dewatering project
6. Jeff Barnette (2003-2004): assisted in remedial feasibility studies
7. John Lynk (2004-Present): assisted on bioreactor landfill project
8. Vinay Tummala (2004-Present): assisted on electrokinetic remediation project
9. Biren Patel (2004-Present): assisted on bioreactor landfill project

PUBLICATIONS:

Books:

1. Sharma, H.D., and Reddy, K.R., Geoenvironmental Engineering: Site Remediation, Waste Containment, and Emerging Waste Management Technologies, John Wiley & Sons, Inc., Hoboken, New Jersey, 2004, 992p. (ISBN: 0-471-21599-6).
2. Reddy, K.R., Laboratory Testing of Soils for Engineering Purposes, Laboratory Manual, University of Illinois at Chicago, August 1997 (available at: www.uic.edu/classes/cemm/cemmlab/).

Edited Books:

1. Reddy, K.R., and Cameselle, C., Electrochemical Remediation Technologies for Polluted Soils, Sediments and Groundwater, John Wiley & Sons, Inc., Hoboken, New Jersey (to be published in March 2009).
2. Reddy, K.R., Khire, M.V., and Alshawabkeh, A.N., Editors, Geosustainability and Geohazard Mitigation, Geotechnical Special Publication No.178, ASCE Press, Reston, Virginia, 2008, 1203p (ISBN: 978-0-7844-0971-8).
3. Alshawabkeh, A.N., Reddy, K.R., and Khire, M.V., Editors, Characterization, Monitoring, and Modeling of Geosystems, Geotechnical Special Publication No.179, ASCE Press, Reston, Virginia, 2008, 1101p (ISBN: 978-0-7844-0972-5).
4. Khire, M.V., Alshawabkeh, A.N., and Reddy, K.R., Editors, Geotechnics of Waste Management and Remediation, Geotechnical Special Publication No.177, ASCE Press, Reston, Virginia, 2008, 856p (ISBN: 978-0-7844-0970-1).
5. Reddy, K.R., Guest Editor, Site Remediation Technologies, Special Issue of *Journal of Hazardous Materials*, Vol.143, Issue 3, 2007 (ISBN: 0304-3894).
6. Burns, S.E., Culligan, P.J., Evans, J.C., Fox, P.J., Reddy, K.R., and Yesiller, N., Editors, Geoenvironmental Engineering, ASCE Special Publication No.163, ASCE Press, Reston, Virginia, 2007 (ISBN: 978-0-7844-0897-1).
7. Alshawabkeh, A., Benson, C.H., Culligan, P.J., Evans, J.C., Gross, B.A., Narejo, D., Reddy, K.R., Shackelford, C.D., and Zornberg, J.G., Editors, Waste Containment and Remediation, ASCE Geotechnical Special Publication No. 142, ASCE Press, Reston, Virginia, 2005, 664p. (ISBN: 0-7844-0769-X).
8. Reddy, K.R., Editor, In-Situ Remediation of Contaminated Sites, Proceedings of the Fourth Great Lakes Geotechnical and Geoenvironmental Conference, Chicago, May 1996.

Book Chapters:

1. Reddy, K.R., and Cameselle, C., Overview of Electrochemical Remediation Technologies, Chapter 1 in *Electrochemical Remediation Technologies for Polluted Soils, Sediments and Groundwater*, John Wiley & Sons, Inc., 2009.
2. Reddy, K.R., and Cameselle, C., Field Applications of Electrokinetic Remediation of Soils Contaminated with Heavy Metals, Chapter 29 in *Electrochemical Remediation Technologies for Polluted Soils, Sediments and Groundwater*, John Wiley & Sons, Inc., 2009.
3. Reddy, K.R., Physical and Chemical Groundwater Remediation Technologies, Chapter 12 in *Overexploitation and Contamination of Shared Groundwater Resources*, Darnault, C.J.G. (ed.), Springer Science Publisher, 2008, pp.257-274 (ISBN: 978-1-4020-6984-0).
4. Reddy, K.R., Enhanced Aquifer Recharge, Chapter 13 in *Overexploitation and Contamination of Shared Groundwater Resources*, Darnault, C.J.G. (ed.), Springer Science Publisher, 2008, pp.275-288 (ISBN: 978-1-4020-6984-0).
5. Jazdanian, A.D., Reddy, K.R., and Chandhuri, K., Chelated Iron in Fenton-Like Oxidation of BTEX and PAHs in Soils, Chapter 2 in *Contaminated Soils*, Volume 8, Calabrese, E.J, Kostecki, P.T., and Dragun, J. (eds.), Amherst Scientific Publishers, Amherst, Massachusetts, 2003, pp.13-26 (ISBN: 1-884940-30-7).
6. Reddy, K.R., and Adams, J.A., Cleanup of Chemical Spills Using Air Sparging, Chapter 14 in *The Handbook of Hazardous Materials Spill Technology*, M. Fingas (ed.), McGraw-Hill Company, 2001, pp.14.1-14.29 (ISBN: 0-07-135171-X).

Refereed Journal Publications:

Submitted:

1. Reddy, K.R., Cameselle, C., and Ala, P.R., "Integrated Electrokinetic Flushing to Remediate Mixed Organic and Metal Contaminants in Field Soil".
2. Richards, K.S., and Reddy, K.R., "Development of True Triaxial Apparatus for Determining Piping Potential in Earth Structures".
3. Sivakumar Babu, G.L., Reddy, K.R., and Chouskey, S.K., "Constitutive Model for Municipal Solid Waste Incorporating Mechanical Creep and Biodegradation-Induced Compression," *Waste Management Journal*.

In Revision (Tentatively Accepted):

1. Maturi, K., Reddy, K.R., and Cameselle, C., "Surfactant-enhanced Electrokinetic Remediation of Mixed Contamination in Low Permeability Soils," *Separation Science & Technology*.
2. Reddy, K.R., Danda, S., and Yükselen-Aksoy, Y., "Sequestration of Heavy Metals in Soils from Two Polluted Industrial Sites: Implications on Remediation," *Land Contamination and Reclamation Journal*.
3. Pantazidou, M., Katsiri, A., and Reddy, K.R., "Evaluating Management Options for the Disposal of Dredged Sediments," *Journal of ASTM International*, In Print.

In Print:

1. Reddy, K.R., Maturi, K., and Cameselle, C., "Sequential Electrokinetic Remediation of Mixed Contaminants in Low Permeability Soils," *Journal of Environmental Engineering*, ASCE.
2. Reddy, K.R., and Chandhuri, K.S., "Fenton-like Oxidation of PAHs in Clayey Soils Using Electrokinetics," *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE.
3. Reddy, K.R., Hettiarachchi, H., Parakalla, N., Gangathulasi, J., Bogner, J.E., and Lagier, T., "Geotechnical Properties of Landfilled Municipal Solid Waste Under Short-Term Leachate Recirculation Operations," *Waste Management & Research*.
4. Reddy, K.R., Hettiarachchi, H., Parakalla, N., Gangathulasi, J., Bogner, J.E., and Lagier, T., "Hydraulic Conductivity of Municipal Solid Waste in Landfills," *Journal of Environmental Engineering*, ASCE.
5. Reddy, K.R., Stark, T.D., and Marella, A., "Beneficial Use of Shredded Tires as Drainage Material in Cover Systems for Abandoned Landfills," *Practice Periodical of Hazardous, Toxic, and Radioactive Waste Management*, ASCE.

Published:

-Over 300 ISI citations as of December 2007 excluding self citations
-Four papers received/nominated for major awards
-All major papers are available for download at: www.uic.edu/~kreddy

6. Roach, N., Reddy, K.R., and Al-Hamdan, A.Z., "Particle Morphology and Mineral Structure of Kaolin Contaminated with Heavy Metals Before and After Electrokinetic Remediation," *Journal of Hazardous Materials*. On-line version published.
7. Reddy, K.R., "Technical Challenges to In-Situ Remediation of Polluted Sites," *Geotechnical and Geological Engineering Journal*, On-line version published.
8. Reddy, K.R., Hettiarachchi, H., Gangathulasi, J., Bogner, J.E., and Lagier, T., "Geotechnical Properties of Synthetic Municipal Solid Waste," *International Journal of Geotechnical Engineering*, Vol.3, No.3, 2009.
9. Reddy, K.R., Hettiarachchi, H., Parakalla, N.S., Gangathulasi, J., and Bogner, J.E., "Geotechnical Properties of Fresh Municipal Solid Waste at Orchard Hills Landfill, USA," *Waste Management Journal*, Vol.29, No.2, 2009, pp.952-959.
10. Maturi, K., and Reddy, K.R., "Extraction of Mixed Contaminants from Different Soil Types," *Soil & Sediment Contamination: An International Journal*, Vol.17, No.6, 2008, pp.586-608.
11. Reddy, K.R., Stark, T.D., and Marella, A., "Clogging Potential of Tire Shred-Drainage Layer in Landfill Cover Systems," *International Journal of Geotechnical Engineering*, Vol.2, No.4, 2008, pp.407-418.
12. Maturi, K., Khodadoust, A.P., and Reddy, K.R., "Comparison of Extractants for Removal of Lead, Zinc, and Phenanthrene from Manufactured Gas Plant Field Soil," *Practice Periodical of Hazardous, Toxic, and Radioactive Waste Management*, ASCE, Vol.12, No.4, 2008, pp.230-238.
13. Reddy, K.R., and Karri, M.R., "Effect of Oxidant Dosage on Integrated Electrochemical Remediation of Contaminant Mixtures in Soils," *Journal of Environmental Science & Health*, Vol. 43, No.8, 2008, pp. 881-893.
14. Al-Hamdan, A.Z., and Reddy, K.R., "Geochemical Assessment of Metal Transport in Glacial Till During Electrokinetic Remediation," *Environmental Monitoring & Assessment Journal*, Vol.139, No.1-3, 2008, pp.137-149.
15. Al-Hamdan, A.Z., and Reddy, K.R., and "Transient Behavior of Heavy Metals in Soils During Electrokinetic Remediation," *Chemosphere*, Vol.71, No.5, 2008, pp.860-871.
16. Maturi, K., and Reddy, K.R., "Cosolvent-enhanced Desorption and Transport of Organic and Metal Contaminants in Soils During Electrokinetic Remediation," *Water, Air, and Soil Pollution*, Vol.189, No.1-4, 2008, pp.199-211.
17. Al-Hamdan, A.Z., and Reddy, K.R., "Electrokinetic Remediation Modeling Incorporating Geochemical Effects," *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, Vol.134, No.1, 2008, pp.91-105.
18. Richards, K.S., and Reddy, K.R., "Critical Appraisal of Piping Phenomena in Earth Dams," *Bulletin of Engineering Geology and the Environment*, Vol.66, No.4, 2007, pp.381-402.

19. Al-Hamdan, A.Z., and Reddy, K.R., "Adsorption of Heavy Metals in Glacial Till Soil," *Journal of Geotechnical and Geological Engineering*, Vol.24, No.6, 2006, pp.1679-1693.
20. Roach, N., and Reddy, K.R., "Electrokinetic Delivery of Permanganate into Low Permeability Soils," *International Journal of Environment and Waste Management*, Vol.1, No.1, 2006, pp.4-19.
21. Khodadoust, A. P., Reddy, K. R., and Narla, O., "Cyclodextrin-Enhanced Electrokinetic Remediation of Soils Contaminated with 2,4-Dinitrotoluene," *Journal of Environmental Engineering*, ASCE, Vol.132, No.9, 2006, pp.1043-1050.
22. Reddy, K.R., and Karri, M.R., "Effect of Voltage Gradient on Integrated Electrochemical Remediation of Contaminated Mixtures," *Land Contamination & Reclamation*, Vol.14, No.3, 2006, pp.685-698.
23. Reddy, K.R., Ala, P.R., Sharma, S., and Kumar, S.N., "Enhanced Electrokinetic Remediation of Contaminated Manufactured Gas Plant Soil," *Engineering Geology*, Vol.85, No.1-2, 2006, pp.132-146.
24. Reddy, K.R., and Ala, P.R., "Electrokinetic Remediation of Contaminated Dredged Sediment," *Journal of ASTM International*, Vol.3, No.6, 2006, pp.254-267.
25. Maturi, K., and Reddy, K.R., "Simultaneous Removal of Heavy Metals and Organic Contaminants from Soils by Electrokinetics using a Modified Cyclodextrin," *Chemosphere*, Vol.63, No.6, 2006, pp.1022-1031.
26. Reddy, K.R., Urbanek, A., and Khodadoust, A.P., "Electroosmotic Dewatering of Dredged Sediments: Bench-Scale Investigation," *Journal of Environmental Management*, Vol.78, No.2, 2006, pp.200-208.
27. Al-Hamdan, A.Z., and Reddy, K.R., "Geochemical Reconnaissance of Heavy Metals in Kaolin after Electrokinetic Remediation," *Journal of Environmental Science & Health*, Vol.A41, No.1, 2006, pp.17-33.
28. Al-Hamdan, A.Z., and Reddy, K.R., "Surface Speciation Modeling of Heavy Metals in Kaolin: Implications for Electrokinetic Soil Remediation Processes," *Adsorption Journal*, Vol.11, No.5-6, 2005, pp.529-546.
29. Saichek, R.E., and Reddy, K.R., "Surfactant-enhanced Electrokinetic Remediation of Polycyclic Aromatic Hydrocarbons in Heterogeneous Subsurface Environments," *Journal of Environmental Engineering & Science*, Vol.4, No.5, 2005, pp.327-339
30. Reddy, K.R., and Ala, P.R., "Electrokinetic Remediation of Metal-Contaminated Field Soil," *Separation Science & Technology*, Vol.40, No.8, 2005, pp.1701-1720.
31. Khodadoust, A.P., Reddy, K.R., and Maturi, K., "Effect of Different Extraction Agents on Metal and Organic Contaminant Removal from a Field Soil," *Journal of Hazardous Materials*, Vol.B117, No.1, 2005, pp.15-24.
32. Saichek, R.E., and Reddy, K.R., "Electrokinetically Enhanced Remediation of Hydrophobic Organic Compounds in Soils: A Review," *Critical Reviews in Environmental Science and Technology*, Vol.35, No.2, 2005, pp.115-192.
33. Roach, N., and Reddy, K.R., "Review of X-ray, Electron Beam and Spectroscopic Methods for

- Characterization of Contaminated Soils," *Trends in Soil Science*, Vol.3, 2004, pp.1-18.
34. Khodadoust, A.P., Reddy, K.R., and Maturi, K., "Removal of Nickel and Phenanthrene from Kaolin Soil Using Different Extractants," *Journal of Environmental Engineering Science*, Vol.21, No.6, 2004, pp.691-704.
 35. Saichek, R.E., and Reddy, K.R., "Evaluation of Surfactants/Cosolvents for Desorption/Solubilization of Phenanthrene in Clayey Soils," *International Journal of Environmental Studies*, Vol.61, No.5, 2004, pp.587-604.
 36. Reddy, K.R., Danda, S., and Saichek, R.E., "Complicated Factors of Using Ethylenediamine Tetracetic Acid to Enhance Electrokinetic Remediation of Multiple Heavy Metals in Clayey Soils," *Journal of Environmental Engineering*, ASCE, Vol.130, No.11, 2004, pp.1357-1366.
 37. Reddy, K.R., and Tekola, L., "Remediation of DNAPL Source Zones in Groundwater Using Air Sparging," *Land Contamination & Reclamation*, Vol.12, No.2, 2004, pp.67-83.
 38. Jazdanian, A.D., Reddy, K.R., Gonzalez, J.V., and Ala, P.R., "Evaluation of Different Slurry Materials for Containment Wall Construction at a DNAPL-Contaminated Site," *Practice Periodical of Hazardous, Toxic, and Radioactive Waste Management*, ASCE, Vol.8, No.3, 2004, pp.173-180.
This paper received the Best Practice-Oriented Paper Award, Practice Periodical of Hazardous, Toxic, and Radioactive Waste Management, Environment & Water Resources Institute, Environmental Multi-Media Council, ASCE, 2004-2006
 39. Reddy, K.R., and Saichek, R.E., "Enhanced Electrokinetic Removal of Phenanthrene from Clay Soil by Periodic Electric Potential Application," *Journal of Environmental Science and Health, Part A-Toxic/Hazardous Substances & Environmental Engineering*, Vol.A39, No.5, 2004, pp.1189-1212.
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 33. Reddy, K.R., and Chaparro, C., "Electrokinetic Decontamination of Mercury-Polluted Soils," Division of Environmental Chemistry, *ACS National Meeting*, Orlando, Florida, April 2002.
 34. Reddy, K.R., and Al-Hamdan, A.Z., "Effect of Treatment Time and Voltage Gradient on Migration of Heavy Metals in Soils During Electrokinetics," *Water Environment Federation*, 2002.
 35. Bogner, J., Reddy, K., and Spokas, K., "Dynamic Water Balance Aspects of Bioreactor Landfills," *Proceedings of the Eighth International Waste Management and Landfill Symposium*, Sardinia, Italy, October 2001, pp.293-302.
 36. Reddy, K.R., and Marella, A., "Properties of Different Size Scrap Tire Shreds: Implications on Using as Drainage Material in Landfill Cover Systems," *Proceedings of the Seventeenth International Conference on Solid Waste Technology and Management*, Philadelphia, Pennsylvania, October 2001.
 37. Reddy, K.R., and Chaparro, C., "Electrokinetic Remediation of Mercury-Contaminated Soils," *Proceedings of the International Conference on Containment & Remediation Technology*, Orlando, June 2001.
 38. Reddy, K.R., "Integrated Electrokinetic Technology for the Remediation of Contaminated Soils and Groundwater," *Proceedings of the Symposium on Environmental Science and Technology*, University of Illinois at Chicago, February 2001, 8p.

39. Reddy, K.R., "Geotechnics of Contaminated Site Remediation and Waste Containment: An Overview," *Proceedings of the Indian Geotechnical Conference- Keynote Presentations*, Bombay, India, December 2000, pp.35-40.
40. Reddy, K.R., "Cleanup Options for Brownfields Sites," *Proceedings of the 8th Great Lakes Geotechnical and Geoenvironmental Conference on Geotechnology for Urban Renewal and Redevelopment*, Detroit, May 2000, pp.75-88.
41. Reddy, K.R., "Use of Glass Cullet as Backfill Material for Retaining Structures," *Proceedings of the Fifteenth International Conference on Solid Waste Technology and Management*, Philadelphia, Pennsylvania, December 1999.
42. Li, A., Cheung, K.A., Reddy, K.R., and Wadden, R.A., "Effect of Cosolvents on the Desorption and Electrokinetic Transport of PAHs in Soils," *Proceedings of the Air & Waste Management Association Annual Meeting*, St. Louis, Missouri, June 1999.
43. Adams, J.A., Hirl, P.J., and Reddy, K.R., "In-Situ Biosparging for the Remediation of Hydrocarbon Contaminated Groundwater," *Proceedings of the 9th Annual West Coast Conference on Contaminated Soils and Water*, Oxnard, California, March 1999.
44. Reddy, K.R., and Motan, E.S., "Shear Behavior of Different Geosynthetic Interfaces in Landfill Liner Systems," *Proceedings of the Indian Geotechnical Society Golden Jubilee Conference- IGC 98*, Vol.1, New Delhi, India, December 1998, pp.295-300.
45. Reddy, K.R., and Saichek, R.E., "Characterization and Performance Assessment of Shredded Scrap Tires as Leachate Drainage Material in Landfills," *Proceedings of the Fourteenth International Conference on Solid Waste Technology and Management*, Philadelphia, Pennsylvania, November 1998.
46. Reddy, K.R., Xu, C.Y., and Chinthamreddy, S., "Speciation of Heavy Metals in Clays During Electrokinetic Remediation," *Proceedings of the Symposium on Emerging Technologies in Hazardous Waste Management IX*, Industrial & Engineering Chemistry Division, American Chemical Society, Pittsburgh, Pennsylvania, September 1997, pp.124-127.
47. Adams, J.A., and Reddy, K.R., "The Effect of Grain Size Distribution on Air Sparging Efficiency," *Proceedings of the Fourth International Symposium on In Situ and On-Site Bioremediation*, Vol.1, New Orleans, April 1997, pp.165-172.
48. Adams, J.A., and Reddy, K.R., "Synergistic Effects of Multiple Contaminants on Air Sparging," *Proceedings of the 59th Annual American Power Conference*, Chicago, April 1997, pp.228-233.
49. Semer, R., Adams, J.A., and Reddy, K.R., "Surfactant-Enhanced Air Sparging for Groundwater Remediation: Preliminary Results," *Proceedings of the Fourth Geotechnical and Geoenvironmental Conference on In-Situ Remediation of Contaminated Sites*, Chicago, May 1996, pp.197-213.
50. Parupudi, U.S., and Reddy, K.R., "Electrokinetic Remediation of Electroplating Waste Sites," *Proceedings of the Fourth Geotechnical and Geoenvironmental Conference on In-Situ Remediation of Contaminated Sites*, Chicago, May 1996, pp.141-150.
51. Reddy, K.R., and Zhou, J., "Development of Air Sparging Model for Groundwater Remediation," *Proceedings of the Fourth Geotechnical and Geoenvironmental Conference on In-Situ Remediation of Contaminated Sites*, Chicago, May 1996, pp.215-225.

52. Reddy, K.R., Parupudi, U.S., and Devulapalli, S., "Electrokinetic Remediation of Soils Contaminated With Electroplating Wastes," *Proceedings of the 58th Annual American Power Conference*, Chicago, April 1996, pp.342-346.
53. Reddy, K.R., and Parupudi, U.S., "Electrokinetic Removal of Chromium from Glacial Clays," *Proceedings of the Eighth International IGT Symposium on Gas, Oil, and Environmental Biotechnology*, Colorado Springs, Colorado, December 1995.
54. Ruetten, M., Bandi, S., and Reddy, K.R., "Rational Design Approach for Landfill Liner Protective Soil Cover," *Proceedings of the Eighteenth International Madison Waste Conference*, Madison, Wisconsin, September 1995, pp.302-308.
55. Reddy, K.R., Kolloju, P., Ruetten, M., and Bandi, S., "Characterization of Protective Cover Soils for Landfill Geomembrane Liners," *Proceedings of the Third Great Lakes Geotechnical/Geoenvironmental Conference*, Cleveland, May 1995, pp.117-143.
56. Oliver, C., and Reddy, K.R., "Roadway Subgrade Improvement Using Geotextiles- A Case Study," *Proceedings of the Third Great Lakes Geotechnical/Geoenvironmental Conference*, Cleveland, May 1995, pp.183-195.
57. Reddy, K.R., Zhou, J., and Kosgi, S., "New Model to Simulate Air Sparging for Groundwater Remediation," *Proceedings of the 5th Annual WERC Technology Development Conference*, Las Cruces, New Mexico, April 1995, pp.299-308.
This paper received the Best Paper Award, Technology Development Conference, Dept. of Energy, 1995
58. Reddy, K.R., and Motan, E.S., "Behavior of Geocomposite Landfill Liner Systems Under Incremental Loading Conditions," *Proceedings of the Second Annual Great Lakes Geotechnical/Geoenvironmental Conference*, Purdue University, West Lafayette, Indiana, May 1994, pp.167-185.
59. Reddy, K.R., and Schuh, J.C., "Groundwater Contamination Due to Seepage from Surface Impoundments," *Proceedings of the 4th Annual WERC Technology Development Conference*, Las Cruces, New Mexico, April 1994, pp.319-329.
60. Saxena, S.K., and Reddy, K.R., "Behavior of Cemented Sands Under Dynamic Loading," *Proceedings of the Eighth Japan Earthquake Engineering Symposium*, Tokyo, Japan, December 1990, pp.757-764.
61. Saxena, S.K., Reddy, K.R., and Avramidis, A., "Dynamic Behavior of Artificially Cemented Sands," *Proceedings of the Ninth World Conference on Earthquake Engineering*, Tokyo-Kyoto, Japan, Vol.III, August 1988, pp.41-46.
62. Saxena, S.K., Reddy, K.R., and Sengupta, A., "Verification of a Constitutive Model for Granular Materials," *Proceedings of the International Workshop on Constitutive Equations for Granular Non-cohesive Soils*, Cleveland, Saada & Bianchini(eds), Balkema Publishers, July 1987, pp.629-645.
63. Saxena, S.K., and Reddy, K.R., "Behavior of Cement Stabilized Sands," *Proceedings of the Indian Geotechnical Conference*, Bangalore, India, Vol.1, December 1987, pp.341-344.
64. Saxena, S.K., and Reddy, K.R., "Dynamic Properties of Sands at Low Strain Amplitudes," *Proceedings of the Pacific Conference On Earthquake Engineering*, Wairakei, New Zealand, Vol.3,

August 1987, pp.61-72.

65. Saran, S., and Reddy, K.R., "Behavior of Soils, Foundations and Slopes During Earthquakes," *Proceedings of the International Symposium on Creation of Awareness about Earthquake Hazards and Mitigation of Seismic Risks*, Roorkee, India, November 1984, pp.19-24.

General Articles:

1. Reddy, K.R., "Electroremediation: A Versatile Environmental Remediation Technology," Review Article, In Preparation.
2. Reddy, K.R., "White Paper on Geoenvironmental Engineering," U.S.–Japan Workshop on Geoenvironmental Engineering, New Orleans, March 2008.
3. Reddy, K.R., "Site Remediation Technologies- Preface," *Special Issue of Journal of Hazardous Materials*, Vol.143, No.3, 2007, pp.607-608.
4. Reddy, K.R., "White Paper on Geoenvironmental Engineering," NSF Workshop on Emerging Geoenvironmental Technologies, University of Illinois at Chicago, September 2003.
5. Reddy, K.R., and Adams, J.A., "In-Situ Air Sparging: A New Method to Remediate Groundwater," *Geotechnical News*, Vol.14, No.4, 1996, pp.27-32.
6. Schuh, J.C., and Reddy, K.R., "Groundwater Management Engineering," *ASCE Illinois Section Newsletter*, Vol.34, No.6, 1993, pp.1-2.

Major Research Reports:

1. Reddy, K.R., and Khodadoust, A.P., "Transport Behavior of Surface-Modified Reactive Nanoscale Iron Particles," Report to Toda America, Inc., Report Number UIC-GGEL-07-01, Department of Civil and Materials Engineering, University of Illinois at Chicago, April 2007.
2. Singh, D., Chen, N., Lorenzo-Martin, C., Routbort, J.L., Pagilla, K., Urgun-Demirtas, M., Reddy, K., Gangathulasi, J., Del Cul, G.D., Simmons, C.M., and Icenhour, A.S., "Study on Degradation of a Commercial Rigid Polyurethane Foam Used for Filling of Process Gas Equipment (PGE) and Pipes and Corrosion Behavior of Pipes at K-25/K-27," Report Number ANL-06/32, Argonne National Laboratory, Argonne, Illinois, August 2006, 143p.
3. Saichek, R.E., and Reddy, K.R., "Electrokinetic Remediation of Heterogeneous and Low Permeability Soils Contaminated by Hydrophobic Organic Compounds," Report to National Science Foundation, Report Number UIC-GGEL-05-02, Department of Civil and Materials Engineering, University of Illinois at Chicago, October 2005.
4. Reddy, K.R., "Workshop on Emerging Geoenvironmental Engineering Technologies for Pollution Control and Remediation," Report to the National Science Foundation, Report Number UIC-GGEL-05-01, Department of Civil and Materials Engineering, University of Illinois at Chicago, September 2005.
5. Ala, P., and Reddy, K.R., "Electrokinetic Remediation of Field Contaminated Soils and Sediments," Report to STAT Analysis Corporation, Report Number UIC-GGEL-04-01, Department of Civil and Materials Engineering, University of Illinois at Chicago, May 2004.
6. Marella, A., and Reddy, K.R., "Use of Shredded Scrap Tires as Drainage Material in Landfill Covers," Report to Illinois Department of Commerce and Community Affairs, Report Number UIC-GGEL-02-01, Department of Civil and Materials Engineering, University of Illinois at Chicago, May 2002.
7. Adams, J.A., and Reddy, K.R., "System Effects on the Remediation of Contaminated Saturated

- Soils and Groundwater Using Air Sparging," Report to National Science Foundation, Report Number UIC-GGEL-99-02, Department of Civil and Materials Engineering, University of Illinois at Chicago, May 1999.
8. Chaparro, C., and Reddy, K.R., "Electrokinetic Remediation of Mercury-Contaminated Soils," Report to Institute of Gas Technology, Report Number UIC-GGEL-99-01, Department of Civil and Materials Engineering, University of Illinois at Chicago, May 1999.
 9. Reddy, K.R., Richardson, C., and Cailas, M., "Assessment and Remediation of Brownfields," Report to Great Cities Institute, Report Number UIC-GGEL-97-02, Department of Civil and Materials Engineering, University of Illinois at Chicago, December 1997.
 10. Saichek, R.E., and Reddy, K.R., "Performance of Protective Cover Systems for Landfill Geomembrane Liners," Report to Waste Management, Inc., Report Number UIC-GGEL-97-01, Department of Civil and Materials Engineering, University of Illinois at Chicago, November 1997.
 11. Reddy, K.R., Zhuo, J., and Davis, J., "Slug Testing in Highly Permeable Confined Aquifers," Report to Illinois Groundwater Association, Report Number UIC-GGEL-95-01, Department of Civil and Materials Engineering, University of Illinois at Chicago, January 1995.
 12. Reddy, K.R., "Behavior of Cemented Sands Under Three-Dimensional Loadings." Ph.D. Dissertation, Report to the National Science Foundation, Department of Civil Engineering, Illinois Institute of Technology, Chicago, Illinois, May 1990.
 13. Saxena, S.K., and Reddy, K.R., "Mechanical Behavior of Cemented Sands," Report to the National Science Foundation (NSF/ENG-87009), Report No. IIT-CE-8701, Department of Civil Engineering, Illinois Institute of Technology, Chicago, Illinois, June 1987.
 14. Reddy, K.R., "Prediction of Displacements of Retaining Walls Under Static and Dynamic Conditions," M.E. Thesis, Report to University Grants Commission, Department of Civil Engineering, Indian Institute of Technology, Roorkee, India, April 1985.
 15. Reddy, K.R., "Behavior of Piles Under Dynamic Loads," Department of Civil Engineering, Indian Institute of Technology, Roorkee, India, October 1984.

PRESENTATIONS (not including the presentations given by co-authors):

Invited Keynote/Special Presentations:

1. "Nanotechnology for Decontamination of Polluted Soils: Fundamentals and Applications," Keynote Presentation, International Conference on Developments on Expansive Soils (INDEX-09), Hosur, India, August 27-29, 2009.
2. "Remediation of Contaminated Subsurface Using Nanoscale Iron Particles," Keynote Presentation, Indian Geotechnical Conference, December 15, 2008.
3. "Containment Wall Construction at DNAPL-Contaminated Site," Hong Kong Institute of Engineers-Environmental Division, HKIE Headquarter, Hong Kong, May 29, 2008.
4. "Chemical Oxidation and Reduction of Environmental Pollutants: An Integral Component of Green Remediation," Keynote Presentation, Adventus/Carcus/FMC Workshop on Integration of Technologies, Schaumburg, Illinois, March 27, 2008.
5. "Advances in Electrokinetic Remediation of Contaminated Sites," Environmental Science Research Institute, School of Environmental Science and Engineering, Huazhong University of Science and Technology (HUST), October 27, 2007.
6. "Integrated Electrokinetic Remediation Technologies," Institute of Soil Science, Chinese Academy of Sciences, Nanjing, October 25, 2007.
7. "Nanotechnology for Contaminated Site Remediation," International Symposium on Geo-Environmental Engineering for Sustainable Development, Xuzhou, China, October 23, 2007 .
8. "Monitoring and Performance Assessment of Bioreactor Landfills," Department of Environmental Science and Engineering, Tsinghua University, Beijing, China, October 22, 2007.
9. "Technical Challenges to In-Situ Remediation of Polluted Sites," First Sri Lanka Geotechnical Society International Conference on Soil and Rock Engineering, Colombo, Sri Lanka, August 9, 2007.
10. "Electrokinetic Delivery of Nanoscale Iron Particles for Remediation of Pentachlorophenol in Clay Soil," 6th Symposium on Electrokinetic Remediation, Vigo, Spain, June 14, 2007.
11. "Performance Assessment of Bioreactor Landfills," Association of Environmental & Engineering Geologists-North Central Section Meeting, Chicago, March 20, 2007.
12. "Geotechnical Aspects of Bioreactor Landfills," Keynote Presentation, Indian Geotechnical Conference, Indian Institute of Technology, Madras, India, December 15, 2006.
13. "Physical and Chemical Groundwater Remediation Technologies," NATO Advanced Study Institute on Overexploitation and Contamination of Shared Groundwater Resources: Management, (Bio)technological, and Political Approaches to Avoid Conflicts, Varna, Bulgaria, October 9, 2006.
14. "Enhanced Aquifer Recharge," NATO Advanced Study Institute on Overexploitation and Contamination of Shared Groundwater Resources: Management, (Bio)technological, and Political Approaches to Avoid Conflicts, Varna, Bulgaria, October 7, 2006.
15. "Remediation of Contaminated Sediments," Workshop on Remediation at 5th International Congress

on Environmental Geotechnics, Cardiff, Wales, UK, June 29, 2006.

16. "Technologies for Contaminated Sediment Remediation," 3rd International Symposium on Contaminated Sediments, Shizuoka, Japan, May 24, 2006.
17. "Integrated Electrochemical Remediation of Contaminated Sites: Challenges and Opportunities," Colloquium Honoring Dr. Tamas Meggyes, Federal Institute for Materials Research and Testing (BAM), Berlin, Germany, February 24, 2006.
18. "Dynamic Water Balance and Geotechnical Stability of Bioreactor Landfills," Workshop on Waste Containment, Federal Institute for Materials Research and Testing (BAM), Berlin, Germany, February 21, 2006.
19. "Soil and Geosynthetic Liner Systems for Municipal Solid Waste Landfills," Keynote Presentation, INDEX 2006-International Conference on Infrastructure Development on Expansive Soils, Erode, India, February 2, 2006.
20. "Interface Shear Behavior of Landfill Composite Liners," Keynote Presentation, Japan-Korea Workshop on Geoenvironmental Engineering, Seoul National University, Seoul, Korea, June 4, 2005.
21. "Subsurface Contaminant Remediation: Regulations and Case Studies," Keynote Presentation, Indian Geotechnical Conference, Warangal, India, December 19, 2004.
22. "Geoenvironmental Engineering for Pollution Control and Remediation," Keynote Presentation, Symposium on Awareness of Geoenvironmental Engineering, J.N. Technological University, Kukatpally, Hyderabad, India, December 14, 2004.
23. "Geoenvironmental Engineering: Challenges and Opportunities," Keynote Presentation, National Symposium on Advances in Geotechnical Engineering (NSAGE-2004), Indian Institute of Sciences, Bangalore, India, July 23, 2004.
24. "In-Situ Air Sparging for Contaminated Groundwater Remediation: Effects of System Variables," Keynote Lecture, Fall Meeting of Korean Society of Soil and Groundwater Environment, Jeju, Korea, September 26, 2003.
25. "Assessment and Remediation of Contaminated Sites," Keynote Presentation, Indian Geotechnical Conference, Allahabad, India, December 21, 2002.
26. "Geotechnics of Contaminated Site Remediation and Waste Containment: An Overview," Keynote Presentation, Indian Geotechnical Conference, Indian Institute of Technology-Bombay, India, December 12, 2000.

Invited Seminars:

27. "Containment of Groundwater Pollution: A Case Study," College of Engineering, J.N. Technological University, Kukatpally, Hyderabad, India, December 16, 2008.
28. "Climate Change and Water Crisis," Two-days seminar for UIC Chicago Teachers-as-Scholars program, organized by the UIC Graduate College, Chicago Newberry Library, the Woodrow Wilson Foundation, the Polk Foundation, and the Fry Foundation, November 18-19, 2008.
29. "Bioreactor Landfills: New Paradigm in Design and Operation of Municipal Solid Waste Landfills," Department of Civil, Architectural & Environmental Engineering, Illinois Institute of Technology, Chicago, February 20, 2008.
30. "Field Monitoring and Performance Evaluation of Bioreactor Landfills," UIC/CME Environmental and Water Resources Seminar Series, University of Illinois at Chicago, March 16, 2007.
31. "Geotechnics of Bioreactor Landfills," SV University and Indian Geotechnical Society Tirupathi Chapter, Tirupathi, India, December 19, 2006.
32. "Overview of Geotechnical and Geoenvironmental Engineering at UIC," Burns & McDonnell Company, Downers Grove, Illinois, November 9, 2006.
33. "Environmental Remediation Research: Focus on Contaminated Sediments," USEPA Great Lakes National Program Office (GLNPO), Chicago, August 24, 2006.
34. "Environmental Pollution Control and Remediation: An Overview," UIC/CME Environmental Research Seminar Series, University of Illinois at Chicago, January 13, 2006.
35. "Settlement of Municipal Solid Waste in Conventional and Bioreactor Landfills," Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, April 21, 2005.
36. "Interface Shear Behavior of Composite Liner Systems," Department of Civil and Environmental Engineering, Wayne State University, Detroit, Michigan, March 28, 2005.
37. "Geoenvironmental Engineering Education and Research at UIC," UIC Institute of Environmental Science and Policy Steering Committee Meeting, November 2003, and UIC ASCE Student Chapter Meeting, February 9, 2004.
38. "Electrokinetically Enhanced In-Situ Remediation of Contaminated Sites," Korea Advance Institute for Science and Technology (KAIST), Department of Chemical and Biomolecular Engineering, Dajeon, Korea, September 24, 2003.
39. "Electrokinetically Enhanced In-Situ Remediation of Contaminated Soils," Department of Civil & Environmental Engineering, University of Massachusetts-Amherst, October 23, 2002.
40. "Characterization and Remediation of Brownfield Sites," Guest Lecture, Course on Brownfields, UIC Urban Transportation Center, October 8, 2001.
41. "Electrokinetic Remediation of Contaminated Soils," Department of Engineering Science, Oxford University, Oxford, UK, August 15, 2001.
42. "Electrokinetic Remediation of Contaminated Sites," Environmental Protection Training and Research Institute (EPTRI), Hyderabad, India, December 20, 2000.

43. "Environmental Geotechnology: An Overview," College of Engineering, Jawaharlal Nehru Technological University (JNTU), Hyderabad, India, December 19, 2000.
44. "Remediation of Contaminated Soils and Groundwater at Brownfield Sites," Guest Lecture, Course on Brownfields, UIC Urban Transportation Center, October 17, 2000.
45. "Use of Shredded Scrap Tires as Drainage Material in Landfill Covers," Department of Civil, Urban, and Geosystem Engineering, Seoul National University, South Korea, July 4, 2002.
46. "Remediation of Soils Contaminated with Heavy Metals," Midwest Metals Meeting, University of Illinois at Chicago, May 12, 2002.
47. "Adaptive Electrokinetic Remediation of Contaminated Soils and Groundwater," School of Civil Engineering, Purdue University, West Lafayette, Indiana, September 20, 2000.
48. "Remediation of Hazardous Waste Sites," Department of Civil Engineering and Construction Technology, Bradley University, Peoria, Illinois, April 13, 2000.
49. "New Strategies for the In-Situ Remediation of Contaminated Soils and Groundwater," American Society of Civil Engineers- Geotechnical Group Meeting, Chicago, December 2, 1997.
50. "New Strategies for the In-Situ Containment and Remediation of Contaminants in Soils and Groundwater," Department of Earth and Environmental Sciences, UIC, November 20, 1997.
51. "Soil Compositional Influence on Electrokinetic Remediation of Chromium-Contaminated Sites," Institute of Gas Technology, Des Plaines, Illinois, August 31, 1995.
52. "Air Sparging for Groundwater Remediation," Illinois Groundwater Association, March 22, 1995.
53. "Design of Waste Containment Systems- Two Case Studies," University of Illinois at Chicago, May 27, 1993.

Symposia/Workshop Presentations:

54. "Contaminated Site Remediation Using Nanotechnology," Nanoscience Working Group, University of Illinois at Chicago, April 24, 2007 (invited).
55. "Remedial Options for Contaminated Sediments," Symposium on Contaminated Sediments: Challenges and Opportunities, ACS National Meeting, Chicago, March 29, 2006.
56. "Transport of Modified Reactive Nanoscale Iron Particles in Subsurface Soils," U.S. EPA Workshop on Nanotechnology for Site Remediation, Chicago, September 6, 2006 (invited).
57. "Electrochemical Remediation of Mixed Contaminants in Soils", 27th Annual Midwest Environmental Chemistry Workshop, University of Wisconsin, Madison, October 17, 2004.
58. "Subsurface Contaminant Remediation: Regulations and Case Studies," Workshop on Remediation of Contaminated Soils and Groundwater in Korea, Jeju, Korea, September 25, 2003 (Invited).
59. "Mathematical Modeling of Air Sparging," Symposium on Emerging Technologies in Hazardous Waste Management, 224th ACS National Meeting, Boston, MA, August 19, 2002.
60. "Chelated Iron in Fenton-Like Oxidation of Organic Contaminants in Soils," Symposium on Emerging Technologies in Hazardous Waste Management, 224th ACS National Meeting, Boston, MA, August 19, 2002.
61. "Electrokinetic Remediation Modeling Incorporating Geochemical Reactions," Symposium on Emerging Technologies in Hazardous Waste Management, 224th ACS National Meeting, Boston, MA, August 18, 2002.
62. "Remediation of DNAPLs in Groundwater using In-Situ Air Sparging," The 6th International Symposium on Environmental Geotechnology and Global Sustainable Development, Seoul, Korea, July 5, 2002.
63. "Technologies for the Remediation of Mercury-Contaminated Soils," The 6th International Symposium on Environmental Geotechnology and Global Sustainable Development, Seoul, Korea, July 3, 2002.
64. "Transmissivity Behavior of Shredded Scrap Tire Drainage Layer in Landfill Cover System," The 6th International Symposium on Environmental Geotechnology and Global Sustainable Development, Seoul, Korea, July 3, 2002.
65. "Protection of Geomembranes from Mechanical Damage," Short Course on Constructing with PVC Geomembranes, PVC Geomembrane Institute, Naperville, Illinois, July 21, 2000 (Invited).
66. "Removal of HOCs from Heterogeneous Soils Using Electrokinetically Enhanced Surfactant/Cosolvent Flushing," Symposium on Emerging Technologies: Waste Management in the 21st Century, American Chemical Society, San Francisco, California, March 29, 2000.
67. "Integrated Electrokinetic Technology for the Remediation of Contaminated Soils and Groundwater," Symposium on Environmental Science & Technology, University of Illinois at Chicago, February 16, 2001 (Invited).
68. "Field Assessment of Air Sparging for Remediation of LUST Sites," Environmental Professionals of Iowa Fall Symposium, Ames, Iowa, November 17, 2000 (Invited).

69. "Electrokinetic Remediation of Low Permeability Soils Contaminated by Polycyclic Aromatic Hydrocarbons," *ASTM Symposium*, Reno, Nevada, January 25, 2001.
70. "Geochemistry of Chromium During Electrokinetic Remediation," 4th International Symposium on Environmental Geotechnology and Global Sustainable Development, Boston (Danvers), Massachusetts, August 11, 1998.
71. "Speciation of Heavy Metals in Clays During Electrokinetic Remediation," ACS I&EC Special Symposium, Pittsburgh, September 16, 1997 (Invited).
72. "The Effect of Grain Size Distribution on Air Sparging Efficiency," Fourth International Symposium on In Situ and On-Site Bioremediation, New Orleans, April 29, 1997.
73. "Geochemical Characterization of Heavy Metals in Clays During Electrokinetics," Committee On Physicochemical Phenomenon in Soils, Transportation Research Board Meeting, Washington, D.C., January 14, 1997.
74. "Electrokinetic Removal of Chromium from Glacial Clays," Eighth International IGT Symposium on Gas, Oil, and Environmental Biotechnology, Colorado Springs, Colorado, December 1995.
75. "New Applications of Shredded Scrap Tires and Glass Cullet in Civil Engineering," OSWR Solid Waste Research Symposium, March 29, 1995.
76. "Seismic Performance Evaluation of Solid Waste Landfills in Illinois," OSWR Solid Waste Research Symposium, March 28, 1995.
77. "Development of Rational Design Method for Landfill Liner Protective Soil Cover," OSWR Solid Waste Research Symposium, March 28, 1995.
78. "Contaminant Transport Through Landfill Composite Liners," OSWR Solid Waste Research Symposium, March 28, 1995.
79. "Deformation Characteristics of Landfill Composite Liners Under Incremental Refuse Loading Conditions," OSWR Solid Waste Research Symposium, March 28, 1995.

Conference Presentations:

80. "Transport and Reactivity of Lactate-Modified Nanoscale Iron Particles in PCP-Contaminated Field Sand," International Environmental Nanotechnology Conference, USEPA, Chicago, October 8, 2008.
81. "Correlation between Electrical Resistivity and Moisture Content of Municipal Solid Waste in Bioreactor Landfill," Ge-Denver 2007 Conference, Denver, Colorado, February 20, 2007.
82. "Integrated Electrochemical Remediation of Mixed Contaminants in Subsurface," 5th International Congress on Environmental Geotechnics, Cardiff, Wales, UK, June 28, 2006.
83. "Electrokinetic Remediation of Contaminated Dredged Sediments," 3rd International Symposium on Contaminated Sediments, Shizuoka, Japan, May 25, 2006 (invited).
84. "Coupled Fenton-like Oxidation and Electrokinetic Remediation of Contaminated Mixtures," Proceedings of the 4th International Conference on Oxidation and Reduction Technologies for In-Situ Treatment of Soil and Groundwater, Chicago, Illinois, October 25, 2005.
85. "Enhanced Electrokinetic Remediation of Mixed Heavy Metal and Organic Contaminants in Low Permeability Soils," 16th International Conference on Soil Mechanics and Geotechnical Engineering, Osaka, Japan, September 13, 2005.
86. "Mathematical Modeling of In-Situ Air Sparging," International Conference on Energy, Environment and Disasters (INCEED 2005), Charlotte, North Carolina, July 29, 2005.
87. "Clogging Potential of the Shredded Scrap Tire Drainage Layer in Landfill Cover Systems," International Conference on Energy, Environment and Disasters (INCEED 2005), Charlotte, North Carolina, July 28, 2005.
88. "Integrated Electrochemical Remediation of Heavy Metal and PAH-Contaminated Sites," The 15th Annual AEHS Meeting and West Coast Conference on Soils, Sediments and Water, San Diego, California, March 15, 2005
89. "Electrochemical Remediation of Mixed Contaminants in Soils", The 229th ACS National Meeting, San Diego, California, March 13, 2005.
90. "Enhanced Electrokinetic Remediation of Contaminated Manufactured Gas Plant Soil," 4th BGA Geoenvironmental Engineering Conference, Stratford-Upon-Avon, U.K., June 29, 2004.
91. "Contaminated Site Remediation Using Nanomaterials: The Process and Current Utilization Trends," 35th Great Lakes Regional Meeting, American Chemical Society, Loyola University of Chicago, June 2, 2003.
92. "Technical Challenges to Cost-Effective In-Situ Remediation of Polluted Sites," Conference on the Environment, University of Illinois at Chicago, April 9, 2003.
93. "Electroosmotic Dewatering of Dredged Sediments," The 18th Annual International Conference on Contaminated Soils, Sediments and Water, University of Massachusetts at Amhurst, October 24, 2002.
94. "Effect of Treatment Time and Voltage Gradient on Migration of Heavy Metals in Soils During Electrokinetics," WEFTEC 2002, Chicago, September 2, 2002.

95. "DNAPL Removal During In-Situ Air Sparging," The Third International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey, California, May 23, 2002.
96. "Electrokinetically Enhanced Surfactant/Cosolvent Flushing," The Third International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey, California, May 21, 2002.
97. "Electrokinetic Decontamination of Mercury-Polluted Soils," ACS National Meeting, Orlando, Florida, April 11, 2002.
98. "Electrokinetic Remediation of Organic Silty Sand Contaminated with Heavy Metals and PAHs at a MGP Site," The Twelfth Annual West Coast Conference on Contaminated Soils, Sediments and water, AEHS, San Diego, CA, March 18, 2002.
99. "Engineering Properties of Different Size Shredded Scrap Tire Chips," International Conference on Solid Waste Technology and Management, Philadelphia, Pennsylvania, October 22, 2001.
100. "Bioaugmentation and Nutrient Amendment to Chromium Contaminated Soil using Electrokinetics," ACS National Meeting, Chicago, August 30, 2001.
101. "Electrokinetic Remediation of PAHs in Subsurface," First International Conference on Petroleum Contaminated Soils, London, UK, August 16, 2001.
102. "Electrokinetic Remediation of Mercury-Contaminated Soils," International Conference on Containment & Remediation Technology, Orlando, Florida, June 12, 2001.
103. "Use of Tires in Landfills," 3rd Midwest Regional Scrap Tire Conference, Indianapolis, Indiana, June 5, 2001 (Invited).
104. "New Technologies for Assessment and Remediation of Brownfield Sites," Remaking Chicago Conference, Chicago, November 30, 2000 (Invited).
105. "Cleanup Options for Brownfields Sites," Great Lakes Geotechnical and Geoenvironmental Conference on Geotechnology for Urban Renewal and Redevelopment, Detroit, May 19, 2000 (Invited).
106. "Adaptive Electrokinetic Remediation of Heavy Metal Contaminated Soils," The Tenth Annual West Coast Conference on Contaminated Soils and Groundwater, AEHS, San Diego, California, March 22, 2000.
107. "Integrated In-Situ Electrokinetic Soil Flushing System for the Remediation of Hydrophobic Organic Contaminants Under Heterogeneous Subsurface Conditions," Topical Conference on Integrated Environmental Technologies in the 21st Century, American Institute of Chemical Engineers, Atlanta, Georgia, March 6, 2000 (Invited).
108. "Remediation of TCE-Contaminated Groundwater Using In-Situ Air Sparging," National Ground Water Association Midwest Focus Conference, Schaumburg, Illinois, October 8, 1999.
109. "Comparative Assessment of Different Electrode-Purging Solutions on the Removal of Heavy Metals from Clays by Electrokinetics," ACS Meeting, Boston, Massachusetts, August 24, 1998.
110. "Effect of Pulsed Air Injection During In-Situ Air Sparging for Groundwater Remediation," ASCE Conference on In-Situ Remediation of the Geoenvironment, Minneapolis, Minnesota, October 6, 1997.

111. "Development of Air Sparging Model for Groundwater Remediation," Fourth Geotechnical and Geoenvironmental Conference on In-Situ Remediation of Contaminated Sites, Chicago, May 17, 1996.
112. "Electrokinetic Remediation of Electroplating Waste Sites," Fourth Geotechnical and Geoenvironmental Conference on In-Situ Remediation of Contaminated Sites, Chicago, May 17, 1996.
113. "Groundwater Remediation Using In-Situ Air Sparging: Laboratory Investigation of System Variables," 59th Annual American Power Conference, Chicago, April 2, 1997 (Invited).
114. "Electrokinetic Remediation of Soils Contaminated with Electroplating Wastes," 58th Annual American Power Conference, Chicago, April 10, 1996 (Invited).
115. "Rational Design Approach for Landfill Liner Protective Soil Cover," Eighteenth International Madison Waste Conference, Madison, Wisconsin, September 21, 1995.
116. "Characterization of Protective Cover Soils for Landfill Geomembrane Liners," Third Great Lakes Geotechnical/Geoenvironmental Conference, Cleveland, Ohio, May 19, 1995.
117. "New Analysis Procedure to Analyze Slug Tests in Highly Permeable Confined Aquifers," Illinois Groundwater Association Meeting, March 22, 1995.
118. "Computer Modeling to Define the Extent of Groundwater Contamination at a Coal Refuse Disposal Facility," First International Congress on Environmental Geotechnics, Edmonton, Canada, July 11, 1994.
119. "Behavior of Geocomposite Landfill Liner Systems Under Incremental Loading Conditions," Second Annual Great Lakes Geotechnical/Geoenvironmental Conference, Purdue University, West Lafayette, Indiana, May 20, 1994.
120. "Groundwater Contamination Caused Due to Seepage from Surface Impoundments," Fourth Annual Technology Development Conference, New Mexico State University, Las Cruces, April 15, 1994.

TEACHING EXPERIENCE:

University Courses Developed and/or Taught:

- CME415 Geoenvironmental Engineering (revised with new title in 2005- originally developed in 2004 as CEMM415 Environmental Geotechnology)
- CME425 Hazardous Waste and Site Remediation Engineering (revised with new title in 2005- originally developed in 2004 as CEMM425 Environmental Remediation Engineering)
- CME549 Subsurface Flow and Contaminant Transport Modeling (revised with new title in 2005- originally developed in 2004 as CEMM428 Groundwater Flow and Contaminant Transport Modeling)
- CME516 Solid Waste Management and Landfill Engineering (revised with new title in 2005- originally developed in 2004 as CEMM516 Design of Landfills and Impoundments)
- CME315 Soil Mechanics and Laboratory- newly developed in 2004
- CME405 Foundation Analysis and Design- newly developed in 1994
- CME505 Advanced Soil Mechanics- newly developed in 1994
- Developed Soil Mechanics Laboratory and taught every Fall semester as a part of CME315; developed a comprehensive Laboratory Manual (available at: www.uic.edu/classes/cemm/cemmlab/)
- Statics and Dynamics (CME200)
- Statics (CME201)
- Environmental Pollution Control (CME216)

Professional Short Courses Developed and Taught:

- Design, Construction and Monitoring of Landfills, One-day short course taught at the First Sri Lanka Geotechnical Society International Conference on Soil and Rock Engineering, Colombo, Sri Lanka, August 7, 2007 (sole instructor, 25 participants)

Undergraduate Senior Design Projects Advised:

Advised several senior undergraduate civil engineering student groups on design projects to meet the CME397 requirements. Many of these projects have won awards in the annual UIC Engineering Expo competition.

1. Cecich, V., Gonzales, L., Hoisaeter, A., and Williams, J., "Use of Shredded Tires as a Lightweight Backfill Material for Retaining Structures," April 1994. ***Won the First Place Award at the Engineering Expo 1994 under Environmental Concern Category.***
2. Custodio, M.A.C., "Remediation of Contaminated Soils by Soil Washing Process," April 1994. ***Won the Second Place Award at the Engineering Expo 1994 under Environmental Concern***

Category.

3. Gasiorek, C., Gould, S., Marchese, A., and Skolmoski, L., "Use of Shredded Tires and Glass Cullet as Trench Backfill," May 1995. **Won the Second Place Award at the Engineering Expo 1995 under Environmental Concern Category.**
4. Semer, R., "Experimental Investigation of Air Sparging for Groundwater Remediation," May 1995.
5. Busking, C., Gembara, S., Ford, M., Saari, W., and Syler, B., "Hazardous Waste Sludge Remediation: An Electroplating and Acid Washing Process," April 1996. **Won the First Place Award at the Engineering Expo 1996 under Environmental Concern Category.**
6. Darley, S., Ryan, P., Saichek, R., Scifers, B., and Vetter, D., "Remediation of Contaminated Soil by Sequential Soil Washing," April 1996. **Won the Second Place Award at the Engineering Expo 1996 under Environmental Concern Category.**
7. Chiu, S., Donahue, M., Laud, M., and Sasaoka, R., "Design of a Remediation System for the Treatment of Contaminated Soil and Sludge Using Electrokinetics," April 1996.
8. Anderson, R., and Gruenke, P., "Solid Waste Landfill Design with the Use of Recyclable Materials," April 1996.
9. Daube, D., Forsythe, P., Gerardi, P., Gherlan, C., and Tkaczyk, M., "Use of Glass Cullet as Alternate Backfill for Retaining Structures," April 1998. **Won the First Place Award at the Engineering Expo 1998 under Transportation/Infrastructure Category.**
10. Berry, G., Clauson, R., Coachman, M., and Koning, C., "Comparisons of Controlled Low-Strength Material as Backfill," April 1998. **Won the Second Place Award at the Engineering Expo 1998 under Construction/Design Category.**
11. Carroll, B., Desario, N., Hamilton, M., Kelecious, T., and Riyal, A., "Land Development- Harvard, Illinois," April 1998. **Won the First Place Award at the Engineering Expo 1998 under Construction/Design Category.**
12. Banks, C., Detwiler, M., Dossemagan, J., Flodstrom, S., and Palarz, S., "Deer Valley Golf Course Improvements," April 1999.
13. Griffin, K., Pastrana, O., and Regopoulos, E.E., "Foundation Design for Residential Home on Poor Quality Soil," April 1999.
14. Chanwongse, V., Chiang, W-H, Ibarra, J., and Sujak, J., "Gymnasium Design," April 1999. **Won the Second Place Award at the Engineering Expo 1999 under Structure/Site Design Category.**
15. Bachula, C., Dimitriou, K., Morcos, J., Rodriguez, J., and Ameika, C., "New Cabrini Green Multi-Use Structure," April 1999.
16. Urban, A., "Residential Site Development: Bailey's Harbor, Wisconsin," April 1999. **Won the First Place Award at the Engineering Expo 1998 under Structure/Site Design Category.**
17. Honey, M., "Use of Shredded Scrap Tires as Drainage Material in Landfill Covers," April 2000. **Won the First Place award at the Engineering Expo 2000.**
18. Urbenek, A., "Electroosmotic Dewatering of Dredged Sediments in Indiana Harbor," April 2003. **Won**

the First Place award at the Engineering Expo 2003.

19. Heine, J., Curry, R., and McClellan, D., "Chicago Shoreline Protection Design," April 2004.
20. Hernandez, B., Patel, M., Shirani, R., Sanati, M., and Zalewsai, M., "Beneficial Use of Biosolids in Civil Engineering," April 2006. ***Won the First Place Award at the Engineering Expo 2006 under Environment Category.***
21. Sidorczuk, P., and Cain, D., "Dewatering of Dredged Materials," April 2006.
22. Javardi, R., Klinicki, K., and MacDonald, J., "Design of an Eco-Friendly Retaining System for a Resort Community," April 2008. ***Won the First Place Award at the Engineering Expo 2008 under Environmental and Energy Conservation Category.***
23. Campos, M., Chan, C., Klem, P., Le, K., McDermott, T., Ordzowialy, S.F., and Rodriguez, J., "Gravity-Based Energy Machine," April 2008 (co-advised with Khodadoust, A.P.).
24. Basta, P., Brodzinsky, S., Fler, L., Johnson, C., and Owens, K., "Sustainable Land Development," April 2008 (co-advised with Darnault, C.). ***Won the First Place Award at the Engineering Expo 2008 under Structure and Site Design Category.***
25. Abdagic, M., Brozek, L., Krupenko, L., Rogalny, E., and Trocki, W., "The New Generation of Earth Retaining Structures," April 2008. ***Won the Second Place Award at the Engineering Expo 2008 under Structure and Site Design Category.***

Independent Study Projects Advised:

Advised several independent study projects for both undergraduate and graduate civil engineering students on various topics in geotechnical and geoenvironmental engineering. The recent projects include the following:

- Harper, Brian, "Construction on Closed Landfills," Fall 2006.
- Richards, K.S., "Slope Failure of Embankment Dam Under Extreme Flooding Conditions," Fall 2004.
- Barnette, J., "Geotechnical Properties of Contaminated Soils after Their Remediation," Spring 2005.
- Lynk, J., "Synthetic Municipal Solid Waste Characterization," Spring 2004.
- Farslas, P., "Modeling with FLAC," Fall 2005.
- Rualo, J., "Use of Foam in Civil Engineering," Fall 2005.
- Doug, K., "Properties and Beneficial Uses of Biosolids," Spring 2007.
- Harper, B., "Lime-stabilized Soils," Fall 2007.
- Lambiasi, C.E., "Soil Stabilization for Rigid & Flexible Airport Pavements," Fall 2007.

Special Courses and Teaching Activities:

- Taught a seminar on “Climate Change and Water Crisis” for K-12 Chicago School Teachers as a part of Teachers as Scholars (TAS) Program co-organized by The Newberry Library and UIC, November 17-18, 2008.
- GC495 Interdisciplinary Perspectives on Global Environmental Changes (jointly developed with Prof. Hormoz BassiriRad, Department of Biological Sciences, UIC College of Liberal Arts and Sciences; taught during Summer 2008)
- HON201-Environmental Pollution Control and Waste Management-newly developed and taught twice
- HON201- Environmental Engineering Laboratory-newly developed and taught twice
- Faculty-in-charge for the Environmental Research Seminar Series offered as HON201, CME496 and CME594 for undergraduate and graduate students, Spring 2006
- Faculty Advisor for several civil engineering undergraduate special projects/problems each year (2003-Present)
- Faculty Advisor for the Student Environmental Design Contest consecutively for three years. This contest is organized by Waste-management Education and Research Consortium, Las Cruces, New Mexico under the sponsorship of DOE to seek innovative solutions to the actual contamination problems.
- Faculty Mentor for a group of high school students during Summer 1995 as a part of Outreach Program for the underrepresented students in the Chicagoland area.
- Faculty Mentor for a graduate student (Mr. Igor Jokanovic) during the 1997 UIC-Yugoslav Summer Program.
- Math Volunteer, Ranchview Elementary School, Naperville, Illinois, 2002-2003.
- Faculty Advisor for Honors College Student Projects on various topics (1993-Present)

Student Evaluations:

Semester	Course #	Course Title	Enrollment	*Average Evaluation \pm SD
Fall 1993	315	Soil Mechanics and Foundation Engineering	21	4.5
Spring 1994	415	Geotechnical Engineering II	8	4.8
Fall 1994	315	Soil Mechanics and Foundation Engineering	36	4.6
Spring 1995	516	Design of Landfills and Impoundments	8	NA
	405	Foundation Analysis and Design	41	NA
Fall 1995	315	Soil Mechanics and Foundation Engineering	43	4.3 \pm 0.5
	415	Environmental Geotechnology	16	3.9 \pm 0.9
Spring 1996	405	Foundation Analysis and Design	32	4.1 \pm 1.1
Fall 1996	315	Soil Mechanics and Foundation Engineering	33	4.2 \pm 0.7
	415	Environmental Geotechnology	17	4.4 \pm 0.8
Spring 1997	405	Foundation Analysis and Design	31	4.7 \pm 0.5
	516	Design of Landfills and Impoundments	10	4.3 \pm 0.7
Fall 1997	315	Soil Mechanics and Foundation Engineering	42	4.3 \pm 0.9
	415	Environmental Geotechnology	11	3.9 \pm 1.3
Spring 1998	405	Foundation Analysis and Design	47	4.7 \pm 0.6
	505	Advanced Soil Mechanics	9	4.4 \pm 0.7
Fall 1998	315	Soil Mechanics and Foundation Engineering	32	4.6 \pm 0.5
	415	Environmental Geotechnology	16	4.8 \pm 0.4
Spring 1999	405	Foundation Analysis and Design	40	4.6 \pm 0.7
	516	Design of Landfills and Impoundments	19	4.7 \pm 0.6
Fall 1999	216	Environmental Pollution Control	24	3.5 \pm 0.5
	415	Environmental Geotechnology	17	5.0 \pm 0.0
Spring 2000	425	Environmental Remediation Engineering	13	5.0 \pm 0.0
	516	Design of Landfills and Impoundments	11	4.9 \pm 0.4
Fall 2000	315	Soil Mechanics and Foundation Engineering	26	4.6 \pm 0.5
	415	Environmental Geotechnology	12	4.4 \pm 0.8
Spring 2001	405	Foundation Analysis and Design	32	4.4 \pm 0.6
	516	Design of Landfills and Impoundments	8	4.8 \pm 0.4
Fall 2001	315	Soil Mechanics and Foundation Engineering	27	4.6 \pm 0.5
	415	Environmental Geotechnology	18	4.5 \pm 0.7
Spring 2002	405	Foundation Analysis and Design	31	4.4 \pm 0.6
	425	Environmental Remediation Engineering	13	4.6 \pm 0.5
Fall 2002	315	Soil Mechanics and Foundation Engineering	38	4.2 \pm 0.7
Spring 2003	405	Foundation Analysis and Design	34	4.5 \pm 0.7
	516	Design of Landfills and Impoundments	11	4.6 \pm 0.5
Fall 2003	315	Soil Mechanics and Foundation Engineering	42	4.5 \pm 0.6
	415	Environmental Geotechnology	16	4.8 \pm 0.4
Spring 2004	405	Foundation Analysis and Design	41	3.8 \pm 1.1
	494	Groundwater & Contmmt.Transport Modeling	20	4.8 \pm 0.4

*Average of students' ratings of the instructor, on a scale of 5 (Excellent) to 1 (Poor); SD = standard deviation; Numbers in parenthesis show number of undergraduate (UG) and graduate (G) student evaluations; NA = not available.

Student Evaluations (Continued):

Semester	Course #	Course Title	Enrollment	*Average Evaluation \pm SD
Fall 2004	315	Soil Mechanics and Laboratory	42	4.3 \pm 0.9
	415	Environmental Geotechnology	8	4.7 \pm 0.5
Spring 2005	405	Foundation Analysis and Design	44	4.4 \pm 0.8
	516	Design of Landfills and Impoundments	9	4.8 \pm 0.4
Fall 2005	315	Soil Mechanics and Laboratory	43	NA
	425	Environmental Remediation Engineering	23	NA
Spring 2006	405	Foundation Analysis and Design	46	4.38 \pm 0.74
	415	Environmental Geotechnology	15	4.33 \pm 0.58
	594/496	Environmental Research Seminar	15	NA
	HON201	Environmental Pollution Control and Waste Management	15	NA
Fall 2006	315	Soil Mechanics and Laboratory	64	3.88 \pm 0.56
	516	Design of Landfills & Impoundments	14	4.69 \pm 0.63
Spring 2007	405	Foundation Analysis and Design	66	-
	415	Environmental Geotechnology	18	4.43 \pm 0.53 (7UG) 5.00 \pm 0.00 (10G)
Fall 2007	315	Soil Mechanics and Laboratory	65	4.11 \pm 0.80
Spring 2008	405	Foundation Analysis and Design	57	4.65 \pm 0.48 (52UG) 4.50 \pm 0.71 (3G)
	516	Design of Landfills and Impoundments	14	4.54 \pm 0.80 (13G)
Fall 2008	315	Soil Mechanics and Laboratory	66	
Spring 2009	405	Foundation Analysis and Design	65	
	594	Computational Methods in Geoenvironmental Engineering	16	

*Average of students' ratings of the instructor, on a scale of 5 (Excellent) to 1 (Poor); SD = standard deviation; Numbers in parenthesis show number of undergraduate (UG) and graduate (G) student evaluations; NA = not available.

CONSULTING EXPERIENCE:

I am a registered professional civil engineer in the State of Illinois, and I have over 20 years of professional experience in the field of geotechnical and geoenvironmental engineering. Until September 2000, I served as the Chairman of the Geotechnical Group of the American Society of Civil Engineers-Illinois Section. I have worked on projects dealing with site exploration, soil testing, foundation engineering, embankments and earth retaining structures, flood control systems including reservoirs, geotechnical earthquake engineering, groundwater flow and contaminant transport modeling, design of landfills and impoundments, beneficial reuse of waste and recycled materials, and remediation of contaminated sites. Selected major projects are listed below:

Foundations:

- **New Primary Tanks at the Calumet and Stickney Water Reclamation Plants, Metropolitan Water Reclamation District of Greater Chicago (MWRDGC):** Performed QA/QC review of geotechnical data and design reports.
- **McWhorter Facility, Carpentersville, Illinois:** Performed a geotechnical investigation and provided information on soil and groundwater conditions. Presented geotechnical recommendations for the pipe rack structure supports.
- **Fisher Service Company, Oak Forest, Illinois:** Performed a geotechnical investigation to obtain the site subsurface information. Photoionization Detector (PID) was used to test samples for the presence of organic vapors. Provided geotechnical recommendations for foundation design and construction of proposed warehouse building.
- **Illinois Route 47 Site, Woodstock, Illinois:** Performed a geotechnical investigation to delineate subsurface conditions. Fill, peat and soft clays were encountered at the site. Pile foundation recommendations were provided. Floor slab support alternatives were also discussed.
- **Illinois National Guard Armory, Woodstock, Illinois:** Performed a geotechnical investigation. Fill was encountered at the site. Drilled piers were recommended for foundation support.
- **Building Adjacent to Ravine, Highland Park, Illinois:** Existing building was located close to a steep ravine. A subsurface investigation was performed to provide site conditions. Slope stability analyses were performed to evaluate stability of the ravine due to proposed addition to the building.
- **Safety Kleen Facility, Dolton, Illinois:** Performed a geotechnical investigation for the proposed buildings and tank farms. Soil conditions were variable at the site. Pile foundations were designed for the tank farms in some areas. Supervised and monitored pile driving in the field.
- **Forest Preserve District of Dupage County, Illinois:** Evaluated development potential of land parcels based on soils, flood plains and wetlands. Estimated costs for developing sewage and water systems.
- **Communication Tower, Amoco Chemical Company, Joliet, Illinois:** Performed a geotechnical investigation. Designed a drilled pier foundation system for the proposed communication tower.
- **Raw Water Transmission Main, Northbrook, Illinois:** Performed a geotechnical investigation along the proposed alignment of the water main. Provided recommendation for installation of the main by conventional cut and cover method, pipe jacking and tunneling. Recommendations on dewatering and pipe bedding and backfill were also provided.
- **Pump Test, Aurora, Illinois:** Analyzed the pump test results by various methods to determine the characteristics of the aquifer.
- **Indiana Harbor Belt (IHB) Railroad Relocation, Franklin Park, Illinois:** Performed a geotechnical investigation and provided geotechnical recommendations for the subgrade, sub-ballast and top ballast along the proposed relocation alignment.
- **Illinois Route 78- Bridge, Illinois Department of Transportation:** Evaluated soil conditions and calculated pile lengths for the bridge and abutments. Discussed construction related concerns.
- **South Side Facility, SEC Donohue, Oak Brook, Illinois:** Performed three single well and one multiple well pump tests. Services included pump test design, instrumentation and data collection,

analysis of the test data, and report preparation.

- **Typhoon Project, Hong Kong:** Performed a geotechnical analysis. Evaluated settlement of marine clays due to sand filling for land reclamation. The analyses considered with and without prefabricated vertical drains.
- **Finley Road Widening, Downers Grove, Illinois:** Evaluated lateral load capacity of piers using different methods including computer program COM624. Performed stability analyses for the proposed reinforcement earth wall.
- **Casino Beach Jetty, U.S. Army Corps of Engineers, Chicago District:** Performed a geotechnical investigation. It involved drilling borings in Lake Michigan using a barge. Performed laboratory triaxial tests. Prepared a report summarizing the soil conditions and recommended soil parameters for sheet pile wall design.
- **Metropolitan Water Reclamation District of Greater Chicago:** Performed a geotechnical investigation for the proposed 265 feet long by 68 feet wide aeration tanks and 110 feet diameter final settling tanks. All these tanks are approximately 35 feet deep and located below the grade. Provided foundation recommendations, slope geometry during construction based on slope stability analyses and lateral earth pressures to be used in tank wall design. Also discussed construction related concerns.

Earth Structures:

- **Little Calumet River Levees in Indiana, U.S. Army Corps of Engineers, Chicago District:** Supervised drilling, performed soil sampling and logging of borings, conducted and analyzed in-situ permeability tests, directed laboratory testing, prepared soil profiles and prepared report detailing regional geology, suitability of site conditions for levee construction and potential for on-site borrow materials.
- **North Libertyville Estates Flood Control Levee, Libertyville, Illinois, U.S. Army Corps of Engineers, Chicago District:** Performed a subsurface investigation which included making soil borings, performing in-situ permeability tests and obtaining representative soil samples. Performed extensive laboratory testing including triaxial and consolidation tests. Prepared soil profiles and a report discussing the site suitability for levee construction and materials properties for slope stability and seepage analyses.
- **Moraine Hills State Park, McHenry County, Illinois:** Performed a geotechnical investigation. Evaluated slope stability of an earth dam located in the park. Evaluated buried pipe stability. Performed buoyancy analyses of the proposed inlet and outlet structures.
- **Drake Oak Brook Office Complex, Oak Brook, Illinois:** A geotechnical investigation was performed for the distressed retaining walls. Possible reasons for cracking of the retaining walls were identified. Earth pressures were computed and a new backfill and drainage systems were recommended.
- **McCook Reservoir, McCook, Illinois:** U.S. Army Corps of Engineers propose to convert an existing quarry into a reservoir to store combined storm and sanitary sewer overflow as part of Greater Chicago's Tunnel and Reservoir Plan (TARP). Performed a literature survey to obtain information on projects making use of mined out rock quarries, projects concerned with stabilizing high rock walls, projects storing urban stormwater runoff and projects which involved groundwater cutoff in rock. The obtained information can provide useful input to the McCook Reservoir.
- **Forest Preserve District of Will County, Isle a la Cache Floodway, Romeoville, Illinois:** Performed seepage analysis to estimate seepage rate and quantity and piping potential for the proposed earthen berm. Slope stability and settlement analyses were performed for the berm.
- **WoodDale-Itasca Flood Control Reservoir:** Performed a slurry wall construction inspection which included (1) deciding suitability of soils at the bottom grade, (2) testing slurry for viscosity, density, and fluid loss (3) testing backfill for slump and density.
- **Cady Marsh Ditch, U.S. Army Corps of Engineers, Chicago District:** Performed geotechnical investigation for the proposed diversion system which will divert flood water from Cady Marsh Ditch to

the Little Calumet River. Performed in-situ hydraulic conductivity tests. Prepared a report with recommendations on method of installation for conduits and culverts and diversion ditch and channel improvements.

- **Reservoir Site 15, Spoil Pile Investigation, U.S. Army Corps of Engineers, Chicago District:** Performed a geotechnical investigation to delineate soil conditions within and underneath the distressed spoil piles. Performed field vane shear tests to determine undrained shear strength of soft clays. Developed soil profiles. Prepared a report summarizing the findings.

Environmental Assessment and Remediation:

- **In-Situ Reactive Capping of Subaqueous Contaminated Sediments:** Performed expert review of design for the Indiana Harbor Sediment Remediation Project.
- **MGP Contaminated Soil Treatment- Treatability Study:** Characterization of soil, evaluated different remediation technologies, selected a remediation technique, conducted laboratory feasibility experiments, economic assessment.
- **Eagles Lake Development, Naperville, Illinois :** Performed wetland delineation and mitigation. Evaluated the quality of wetlands using Wilhelm Analysis and Army Corps of Engineers Computer Program – Wetland Evaluation Technique (WET).
- **Lagoon Sludge Sampling and Analysis, Amoco Chemical Company, Joliet, Illinois:** Prepared a report detailing sampling and testing procedures of the sludge samples from four lagoons. The test results were statistically evaluated following USEPA documents to characterize the sludge (hazard or non-hazard). All these information was summarized in the report.
- **Spent Lime Lagoon Closure, City of Des Plaines:** Performed a field investigation to delineate the extent of soil mixed with lime and evaluated methods for disposal.

Landfills and Impoundments:

- **Balefill Sanitary Landfill, Solid Waste Agency of Northern Cook County, Illinois (SWANCC):** Planned a groundwater monitoring system, performed slope stability analyses, estimated waste quantities, analyzed nesting supporting structures, evaluated compaction criteria and studied drainage enhancement alternatives using computer model MODFLOW.
- **Baled Waste Transfer Station, SWANCC:** Supervised drilling, performed soil sampling and logging of borings, prepared soil profiles and cross-sections, designed pile foundation and evaluated settlements.
- **Christian County Landfill, Taylorville, Illinois:** Performed a hydrogeological investigation. Installed piezometers and monitoring wells. Performed and interpreted slug and packer tests. Evaluated liner and leachate collection efficiencies using HELP and WONG analyses. Prepared a hydrogeo report.
- **Monterey Coal Company Mine No. 2, Albers, Illinois:** Performed a pump tests. Reviewed hydrogeologic conditions. Evaluated effects of refuse disposal areas on groundwater quality. Prepared groundwater flow and contaminant transport models (MODFLOW and MT3D) to establish a groundwater management zone.
- **City Water, Light and Power, City of Springfield:** Performed a hydrogeologic investigation at the CWLP FGDS landfill to delineate subsurface conditions and groundwater flow regime. It included installing piezometers and performing slug tests. Prepared a hydrogeologic report.
- **Marathon Oil Company, Robinson, Illinois:** Evaluated leachate characteristics of the construction demolition and asbestos landfills.

In addition to the above projects, a number of small projects were completed. Also, confidential projects are not included in the above list.